

A *udit*

R *eport*



USE OF THE DOD JOINT TECHNICAL ARCHITECTURE
IN THE ACQUISITION PROCESS

Report No. D-2001-121

May 14, 2001

Office of the Inspector General
Department of Defense

Form SF298 Citation Data

Report Date <i>("DD MON YYYY")</i> 14 May 2001	Report Type N/A	Dates Covered (from... to) <i>("DD MON YYYY")</i>
Title and Subtitle Use of the DOD Joint Technical Architecture in the Acquisition Process		Contract or Grant Number
Authors		Program Element Number
		Project Number
		Task Number
Performing Organization Name(s) and Address(es) OAIG-AUD (ATTN: AFTS Audit Suggestions) Inspector General Department of Defense 400 Army Navy Drive (Room 801) Arlington, VA 22202-2884		Work Unit Number
		Performing Organization Number(s) D-2001-121
		Monitoring Agency Name(s) and Address(es)
Sponsoring/Monitoring Agency Name(s) and Address(es)		Monitoring Agency Acronym
		Monitoring Agency Report Number(s)
Distribution/Availability Statement Approved for public release, distribution unlimited		
Supplementary Notes This document contains some blank pages.		
Abstract This report is the second in a series and discusses the extent that DoD planned and implemented DoD Component use of the Joint Technical Architecture (JTA) to help in achieving weapon systems interoperability requirements and to support affordability and an open systems approach to weapon system design. The JTA specifies a set of primarily commercial specifications and standards that cover information processing, information transfer, content, format, and security. In August 1996, the Office of the Secretary of Defense mandated that acquisition program managers use the JTA for all command, control, communication, and intelligence systems. In November 1998, the Office of the Secretary of Defense broadened the JTA requirement to include all systems that produce, use, or exchange information electronically; cross a functional or DoD Component boundary; or give the warfighter or DoD decisionmaker an operational capability.		
Subject Terms		
Document Classification unclassified		Classification of SF298 unclassified

Classification of Abstract unclassified	Limitation of Abstract unlimited
Number of Pages 120	

Additional Copies

To obtain additional copies of this audit report, contact the Secondary Reports Distribution Unit of the Audit Followup and Technical Support Directorate at (703) 604-8937 (DSN 664-8937) or fax (703) 604-8932 or visit the Inspector General, DoD Home Page at www.dodig.osd.mil.

Suggestions for Future Audits

To suggest ideas for or to request future audits, contact the Audit Followup and Technical Support Directorate at (703) 604-8940 (DSN 664-8940) or fax (703) 604-8932. Ideas and requests can also be mailed to:

OAIG-AUD (ATTN: AFTS Audit Suggestions)
Inspector General, Department of Defense
400 Army Navy Drive (Room 801)
Arlington, VA 22202-4704

Defense Hotline

To report fraud, waste, or abuse, contact the Defense Hotline by calling (800) 424-9098; by sending an electronic message to Hotline@dodig.osd.mil; or by writing to the Defense Hotline, The Pentagon, Washington, D.C. 20301-1900. The identity of each writer and caller is fully protected.

Acronyms

C ⁴ I	Command, Control, Communications, Computers, and Intelligence
CJCSI	Chairman, Joint Chiefs of Staff Instruction
DII COE	Defense Information Infrastructure Common Operating Environment
JTA	Joint Technical Architecture



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-4704

May 14, 2001

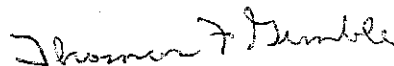
MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION,
TECHNOLOGY, AND LOGISTICS
ASSISTANT SECRETARY OF DEFENSE (COMMAND,
CONTROL, COMMUNICATIONS, AND
INTELLIGENCE)
DIRECTOR, JOINT STAFF

SUBJECT: Audit Report on Use of the DoD Joint Technical Architecture in the
Acquisition Process (Report No. D-2001-121)

We are providing this report for review and to obtain comments and statement of actions to be taken. We considered management comments on a draft when preparing this final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. Management comments were not fully responsive on Recommendations A.1 and B.1. We request that the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications, and Computers provide coordinated comments to Recommendation A.1. Additionally, we redirected recommendation B.1 to the Joint Chiefs of Staff Director and request that he, in coordination with the Assistant Secretary, provide comments on this recommendation. We request management comments on the above recommendations by July 16, 2001.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. John E. Meling at (703) 604-9091 (DSN 664-9091) (jmeling@dodig.osd.mil) or Mr. Harold C. James at (703) 604-9093 (DSN 664-9093) (h james@dodig.osd.mil). See Appendix H for the report distribution. Audit team members are listed inside the back cover.


Thomas F. Gimble

Acting
Deputy Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. D-2001-121

May 14, 2001

(Project No. D1999AE-0101.001)

(Formerly Project No. 9AE-0091.01)

Use of the DoD Joint Technical Architecture in the Acquisition Process

Executive Summary

Introduction. This report is the second in a series and discusses the extent that DoD planned and implemented DoD Component use of the Joint Technical Architecture (JTA) to help in achieving weapon systems interoperability requirements and to support affordability and an open systems approach to weapon system design. The JTA specifies a set of primarily commercial specifications and standards that cover information processing, information transfer, content, format, and security. In August 1996, the Office of the Secretary of Defense mandated that acquisition program managers use the JTA for all command, control, communication, and intelligence systems. In November 1998, the Office of the Secretary of Defense broadened the JTA requirement to include all systems that produce, use, or exchange information electronically; cross a functional or DoD Component boundary; or give the warfighter or DoD decisionmaker an operational capability.

Objectives. The primary audit objective was to evaluate DoD progress in implementing the standards contained in the JTA. We also followed up on recommendations in the 1997 Inspector General, DoD, Report No. 98-023, "Implementation of the DoD Joint Technical Architecture," November 18, 1997. Additionally, we reviewed management controls applicable to the audit objective.

Results. The Secretary of Defense Policy Offices have worked to promote program manager and DoD Component use of the JTA in the design and development of weapons systems and, in response to Inspector General, DoD, Report No. 98-023, established a hierarchy of management councils and groups through which they exercise oversight and configuration management of the JTA. However, the Policy Offices have not yet established centralized tracking and controls to ensure that DoD Components effectively plan and execute implementation of JTA requirements in the acquisition process. Specifically:

- Six of the 17 DoD Components that submitted JTA implementation plans to the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) for JTA Version 1.0 did not submit updated plans as requested to meet the expanded requirements of Versions 2.0 and 3.0. Also, 7 of the 10 DoD Components that submitted updated plans, along with 1 DoD Component making an initial submission, omitted one or more major planning topics from their implementation plans (finding A);
- Thirty-nine of 43 program managers did not insert JTA or JTA-compliant DoD Component technical architecture standards requirements into one or more key acquisition planning documents. Also, 10 of the 43 program managers did not require contractors to use the JTA standards in supporting the design of their system or system upgrade (finding B); and

- Thirteen of 15 program managers did not submit a waiver request as required for using alternative standards to JTA performance-based standards (finding C).

As a result, the DoD will not fully realize the JTA objective of improving and facilitating the ability of its systems to support joint and combined operations in an overall investment strategy.

See Appendix A for details on the management control program as it relates to controls over program managers and DoD Components using the JTA in acquisition programs. Recommendations in this report, if implemented, will improve the process for planning and executing implementation of JTA requirements and correct the material management control weaknesses identified in the report.

Summary of Recommendations. We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics (the Under Secretary); the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) (the Assistant Secretary); and the Joint Chiefs of Staff Director for Command, Control, Communications, and Computers (the Joint Chiefs of Staff Director) establish centralized tracking and controls to ensure that DoD Components effectively plan and execute implementation of JTA requirements in the acquisition process.

Management Comments. The Under Secretary concurred with the findings and recommendations but nonconcurred with establishing an office with responsibility for implementing the recommendations in finding A. Instead, he requested that we recommend establishing organizational responsibilities for implementing the recommendations. He concurred with developing a guidance template for preparing JTA plans but did not comment on the recommendations for reviewing, updating, and reporting the status of JTA plans. He also concurred with establishing timeframes for DoD Component submission of requirements documents for Defense Information Systems Agency review but requested that we redirect the recommendation to the Joint Chiefs of Staff Director. Additionally, he concurred with reviewing contractual documents for JTA content but requested that we recommend establishing a review process rather than assigning an organization responsibility for the review. He partially concurred with providing clarifying guidance on preparing waiver requests. The Assistant Secretary concurred with the findings and the recommendations. The Joint Chiefs of Staff Director nonconcurred with the findings and the recommendations. The Army provided unsolicited comments. The Army agreed with the findings and basically agreed with the recommendations. A discussion of the management comments is in the Findings section of the report, and the complete text is in the Management Comments section.

Audit Response. We made the revisions to the recommendations as the Under Secretary suggested. Because the Assistant Secretary had taken responsibility and provided plans for implementing the report recommendations, our requests for further comments are limited to those recommendations where the Under Secretary and the Joint Chiefs of Staff Director still need to coordinate with the Assistant Secretary. Specifically, we request that the Under Secretary and the Joint Chiefs of Staff Director, along with the Assistant Secretary, provide a coordinated response for establishing responsibilities for identifying the universe of DoD Components that should submit plans for implementing the JTA. Additionally, we request that the Joint Chiefs of Staff Director and the Assistant Secretary coordinate to establish timeframes for DoD Components to submit requirements documents for Defense Information Systems Agency review. We request that the Under Secretary, the Assistant Secretary, and the Joints Chiefs of Staff Director provide comments by July 16, 2001.

Table of Contents

Executive Summary	i
Introduction	
Background	1
Objectives	5
Findings	
A. Joint Technical Architecture Implementation Plans	6
B. Use of Joint Technical Architecture Requirements in the Weapon System Acquisition Documentation.	20
C. Requesting Waivers to Using Standards in the Joint Technical Architecture	35
Appendixes	
A. Audit Process	
Scope	40
Methodology	40
Management Control Program Review	41
Prior Coverage	42
B. Definitions of Terms Relating to the Joint Technical Architecture	43
C. Relationship of the Joint Technical Architecture to Other DoD Programs and Initiatives	47
D. Responsibilities for Managing the Joint Technical Architecture	51
E. DoD Component Joint Technical Architecture Implementation Plans	54
F. Key Acquisition Planning Documents	59
G. Audit Response to Management Comments Concerning the Report	61
H. Report Distribution	76
Management Comments	
Under Secretary of Defense for Acquisition, Technology, and Logistics	79
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)	85
Vice Director, Joint Staff	92
Department of the Army	113

Background

Need for the Joint Technical Architecture. This report is the second in a series discussing the use of an open systems approach in the acquisition process for weapon systems. The first report discussed the extent that acquisition program managers considered and used an open systems approach in the design and development of major Defense weapon systems. This report discusses the extent that DoD planned and implemented DoD Component use of the Joint Technical Architecture (JTA) to help in achieving weapon systems interoperability requirements and in supporting affordability and an open systems approach to weapon system design. This report was made in response to:

- a request from the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) for followup on Inspector General, DoD, Report No. 98-023, "Implementation of the DoD Joint Technical Architecture," November 18, 1997, to assess DoD progress in planning and implementing the standards contained in the JTA, and
- concerns of the DoD Open Systems Joint Task Force stated during the audit field work supporting Inspector General, DoD, Report No. D-2000-149, "Use of an Open Systems Approach for Weapons Systems," June 14, 2000, on the need for DoD to improve the JTA documentation and procedures that program offices use in applying the JTA in weapon systems development.

The open systems approach and the JTA are closely linked. The open systems approach involves acquisition program managers and contractors choosing commercially supported specifications and standards for system interfaces. The JTA prescribes a minimum set of information technology standards consisting primarily of consensus commercial standards but also including military-unique, and federal-unique standards. JTA standards cover information processing, information transfer, content, format, security, and commonality.

In August 1996, the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) mandated that program managers use the JTA for all DoD command, control, communication, and intelligence systems, and for the interfaces of these systems to other key assets, such as weapons and office automation systems. In May 1998, the offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Staff Director for Command, Control, Communications, and Computers, Joint Chiefs of Staff, agreed to broaden use of the JTA to include emerging capabilities, and in November 1998, issued a memorandum promulgating their May 1998 agreement. The memorandum required acquisition program managers to use the JTA for all emerging capabilities, or changes to an existing capability that

produces, uses, or exchanges information in any form electronically; crosses a functional or DoD Component boundary; or gives the warfighter or DoD decision maker an operational capability. Since October 1, 1998, Public Law has made the DoD Chief Information Officer responsible for ensuring that interface standards that apply throughout DoD are prescribed, as discussed below in the paragraph “Public Law and Government Policy.”

The JTA:

- provides a foundation for interoperability among all tactical, strategic, and combat support systems at the technical architecture level,
- mandates interoperability standards and guidelines for system development and acquisition that will facilitate joint force operations,
- communicates to industry the DoD intent to consider open systems products and implementation, and
- acknowledges the direction of industry’s standards-based development.

The JTA provides interoperability standards that apply to Information Technology and to National Security Systems, which include weapon systems segments involving telecommunication and information exchange. DoD operates the weapon systems telecommunication and information exchange segments to fulfill military or intelligence missions. Additionally, program managers use the JTA to provide commercial standards and specifications needed to enable interoperability and to support an open systems design approach. The JTA does not contain every standard that program managers may need to develop the telecommunication and information exchange segments of weapon systems; therefore, program managers may require additional standards to meet system’s requirements.

The lessons learned from conflicts, including Desert Storm, resulted in Joint Vision 2010 and Joint Vision 2020, conceptual templates of how the DoD will leverage technological opportunities to achieve new levels of effectiveness in joint warfighting. The ability of the National Security Systems supporting these joint operations to interoperate (work together and exchange information) is critical to their success. Implementation of the JTA is a crucial element in achieving the goals of Joint Vision 2010 and Joint Vision 2020 because the JTA provides DoD systems with the basis for the needed seamless interoperability at the technical architecture level. The JTA defines the service areas, interfaces, and standards (JTA elements) applicable to all DoD systems. The standards and guidelines in the JTA are publicly available and, whenever possible, commercially supported.

The JTA, by itself, is not sufficient to achieve interoperability. The JTA is complementary to other DoD programs and initiatives aimed at the development and acquisition of effective and interoperable information systems. These related programs and initiatives include the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance Architecture Framework, developed through the DoD Architecture Coordination

Council, the Requirements Generation System, and the initiative for interoperability and supportability of National Security Systems and Information Technology Systems administered through the Joint Chiefs of Staff. Also, to maximize interoperability, DoD must fully implement two additional architectures, the Operational Architecture, which identifies warfighter relationships and information needs, and the Systems Architecture, which relates characteristics and capabilities of individual systems to operational requirements.

Appendix A provides details on DoD goals and performance measures in response to the Government Performance and Results Act that are pertinent to this report. Appendix B provides a listing of terms and definitions germane to understanding DoD implementation of the JTA in designing weapon systems. Appendix C explains how the JTA is complementary to other DoD programs and initiatives.

Management of the JTA. The Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Staff Director for Command, Control, Communications, and Computers, Joint Chiefs of Staff, (the Policy Offices) jointly manage the JTA. The Policy Offices exercise management oversight and configuration management of the JTA as co-chairs of the Architecture Coordination Council and through subordinate management councils and groups made up of representatives from their respective offices and from the DoD Components. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), as the DoD Chief Information Officer, must ensure the interoperability of National Security Systems and Information Technology Systems throughout DoD and that DoD Components use prescribed National Security Systems and Information Technology Systems data standards, including applicable standards in the JTA. Also the DoD Chief Information Officer has additional responsibilities for pre- and post-acquisition interoperability of Information Technology and National Security Systems that overlap the responsibilities of the Under Secretary of Defense for Acquisition, Technology, and Logistics. Appendix D provides details on the roles and responsibilities for managing the JTA, as well as the overall information technology responsibilities of the Chief Information Officer.

The DoD manages JTA implementation planning and compliance through DoD Component Acquisition Executives, program executive officers, and program managers. The Component Acquisition Executives are responsible for developing and enforcing JTA implementation plans. If program office use of a JTA-mandated standard will negatively impact cost schedule or performance, the DoD Component Acquisition Executive or cognizant Office of the Secretary of Defense Principle Staff Assistant may grant a waiver from use. For mission-critical or mission-essential programs, the DoD Components submit waiver requests through the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) to the Under Secretary of Defense for Acquisition, Technology, and Logistics for review and concurrence. Program executive officers are to assist the Acquisition Executives in enforcing JTA implementation plans by reviewing the efforts of program managers to implement the standards contained in the JTA.

Structure of the JTA. The JTA consists of two main parts: the JTA Core and the JTA annexes. The JTA Core contains the minimum set of JTA elements applicable to all DoD systems to support interoperability and commonality requirements. The JTA annexes contain additional JTA elements applicable to specific functional domains (families of systems). These additional JTA elements are needed to ensure interoperability of systems within each domain but may be inappropriate for systems in other domains. The year 2000 version of the JTA includes annexes for the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C⁴ISR) domain; the Combat Support domain; the Modeling and Simulation domain; and the Weapon Systems domain. Where subsets of an application domain have special interoperability requirements, the JTA includes subdomain annexes containing JTA elements applicable to systems within that subdomain. The intention is that a system within a specific JTA subdomain adopts the JTA elements contained in the relevant subdomain annex, the JTA elements contained in the parent domain annex, and the JTA elements contained in the JTA Core.

Additional standards (and technologies) may be required to meet system requirements. The JTA mandates the minimum set of standards and guidelines for the acquisition of all DoD systems that produce, use, or exchange information.

Public Law and Government Policy. Public law and Government policy support DoD use of the JTA through mandating the use of industry based standards. DoD policy requires program managers to use applicable JTA standards in designing weapon systems.

Public Law. Section 12(d) of Public Law 104-113, “National Technology Transfer and Advancement Act of 1995,” March 7, 1996, requires that all Federal agencies and departments use technical standards developed or adopted by the voluntary consensus standards bodies as a means to carry out policy objectives or activities. The JTA is primarily made up of industry standards developed or adopted by voluntary consensus standards bodies. Also, section 2223, title 10, United States Code, “Information Technology: Additional Responsibilities of Chief Information Officers,” October 1, 1998, requires the DoD Chief Information Officer to ensure the interoperability of Information Technology and National Security Systems within DoD and to prescribe Information Technology and National Security Systems standards that apply throughout DoD. Further, the Public Law requires that the Chief Information Officer for each Military Department ensure that the Information Technology and National Security Systems are in compliance with Government and DoD standards and ensure that Information Technology and National Security Systems are interoperable with other relevant Government and DoD Information Technology and National Security Systems.

Government Policy. The Office of Management and Budget and DoD issued policy that supports implementation of the JTA. The Office of Management and Budget issued Circular A-119, “Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities,” February 10, 1998. Circular A-119 directs agencies to use voluntary consensus standards instead of government-unique standards

except where they are inconsistent with law or otherwise impractical. The policies in the Circular are intended to reduce agency reliance on government-unique standards. Details on relevant DoD acquisition policy relating to program manager use of the JTA are contained in findings A, B, and C.

Survey Questionnaires. We distributed survey questionnaires to the offices of DoD Component Acquisition Executives, Program Executive Officers, and program managers for major Defense acquisition programs. We obtained responses to survey questionnaires from 2 of 4 Component Acquisition Executives, 15 of 19 Program Executive Officers, and 81 of 86 program managers. The objectives of the survey were to identify problems that program offices and DoD Components were having in implementing the standards contained in the JTA and to measure the extent of JTA implementation. Overall, the survey responses indicated that Component Acquisition Executives, Program Executive Officers, and program managers were aware of the requirement for acquisition programs to comply with the JTA and were aware that DoD Components were required to have JTA implementation plans. Additionally, the survey responses indicated that use of the JTA was a viable means for promoting the necessary level of interoperability between systems. Further, the survey responses indicated that most program managers believed that the standards contained in the JTA were technically mature and implementable, were publicly available, and were consistent with the law. However, the survey responses indicated that most program managers do not invoke the JTA in their contracts. Findings B and C further discuss the survey responses. Also, we plan to issue an informational report that will contain details of the survey responses received.

Objectives

The primary audit objective was to evaluate DoD progress in planning and implementing the standards contained in the JTA to promote achieving systems interoperability requirements and to support use of an open systems approach in the design and development of major weapon systems. We also followed up on recommendations in a 1997 Inspector General, DoD, Report No. 98-023 on implementing the JTA and reviewed management controls applicable to the audit objective. Appendix A discusses the audit scope and methodology, as well as the management control program and prior audit coverage.

A. Joint Technical Architecture Implementation Plans

Although the DoD Components developed plans to implement the JTA, the plans did not fully comply with policy and guidance from the Policy Offices and did not show a consistent approach in implementing the standards contained in the JTA. Specifically, 6 of 17 DoD Components that submitted JTA plans to the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) for JTA Version 1.0, did not submit updated plans as requested to meet the expanded requirements of JTA Versions 2.0 and 3.0. Also, 7 of 10 DoD Components that submitted updated plans omitted one or more major planning topics. Additionally, provisions in the DoD Component plans varied significantly. These conditions occurred because the Policy Offices did not:

- identify the universe of DoD Components that should submit JTA implementation plans;
- issue definitive guidance for preparing and updating the plans; and
- establish formal management processes to receive, track, evaluate, and provide feedback on the content of the plans.

As a result, DoD has less assurance that the JTA implementation efforts of individual DoD Components will effectively and efficiently support meeting overall DoD interoperability goals. Without effective coordination and direction from the Policy Offices to enable DoD Components to achieve consistent and well-planned JTA implementation plans, the JTA will not achieve maximum effectiveness as a tool for promoting overall DoD system interoperability requirements in individual weapon systems.

Policy for JTA Implementation Plans

Although the Policy Offices issued three memorandums, as discussed below, to the DoD Components concerning the submission and content of JTA implementation plans, the Policy Offices had only incorporated the provisions of the first memorandum into DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs," March 23, 1996. Policy Office efforts to update the Regulation are discussed in finding B.

"Implementation of the DoD Technical Architecture," August 22, 1996.

This memorandum addresses implementation of the initial version of the JTA, now known as Version 1.0. The Policy Offices required all DoD Components to provide a plan outlining their approach for implementing the standards

contained in the JTA to the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) within 90 days. In their implementation plans, DoD Components were to specify that:

- Component use of the JTA was mandatory for all emerging command, control, communication, computer, and intelligence systems; for upgrades to these systems; and for the interfaces of these systems to other key assets, such as weapons and office automation systems.
- Components were to migrate existing command, control, communication, computer, and intelligence systems to the applicable JTA standards, while considering cost, schedule and performance impacts.

The memorandum further states that DoD Components were responsible for implementing the standards contained in the JTA, including enforcing, budgeting, and determining the pace of system upgrades.

“DoD Joint Technical Architecture (JTA) Version 2.0,” November 30, 1998. The Policy Offices implemented JTA Version 2.0 in this memorandum that promulgated a May 1998 Policy Offices’ agreement to broaden the requirement for program manager use of the JTA from only command, control, communication, computer, and intelligence systems and their interfaces to all emerging capabilities, or changes to an existing capability that produces, uses, or exchanges information in any form electronically. The memorandum also required that each DoD Component submit initial or updated plans for implementing the standards contained in the JTA. Updated plans were due in 60 days and initial plans within 90 days of the date of the memorandum.

“DoD Joint Technical Architecture (JTA) Version 3.0,” November 29, 1999. In this memorandum, the Policy Offices introduced JTA Version 3.0 for DoD Component use. JTA Version 3.0 added additional subdomain annexes to the standards in the JTA core and domain annexes. Further, the memorandum reiterated the requirement that each DoD Component and cognizant Office of the Secretary of Defense authority have a current JTA implementation plan on file with the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). The memorandum requires DoD Components to submit additional plans if they had not submitted a plan implementing JTA Version 2.0.

DoD Component Implementation Plans

DoD Component implementation plans showed that the Components did not fully comply with policy and guidance issued by the Policy Offices regarding submission of plans and content of plans. Also, the DoD Component implementation plans did not show a consistent approach in implementing the

standards contained in the JTA. Inspector General, DoD, Report No. 98-023, "Implementation of the DoD Joint Technical Architecture," November 18, 1997, reported similar conditions.

Submission of Plans. Six of the 17 DoD Components that submitted JTA plans for JTA Version 1.0 did not provide updated plans to meet the expanded requirements of JTA Versions 2.0 and 3.0. Since the requirements of JTA Version 2.0 made the JTA applicable to many more weapons and support systems and JTA Version 3.0 added additional types of standards, the DoD Components were required to update their implementation plans to consider the increased time, cost, and enforcement necessary to implement the JTA. Inspector General, DoD, Report No. 98-023 also reported shortfalls in plan submission, stating that the 17 DoD Components that submitted plans for JTA Version 1.0 were less than half of the Components that should have responded. Appendix E provides details on which of the 17 DoD Components submitting implementation plans for JTA Version 1.0 did and did not submit updated plans to implement JTA Versions 2.0 and 3.0.

Content of Plans. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued the memorandum, "Clarification on the Content of DoD Components' Joint Technical Architecture Implementation Plan," October 4, 1996, that provided DoD Components with direction to address nine topics in their JTA implementation plans for JTA Version 1.0. Inspector General, DoD, Report No. 98-023 reported that, as of June 2, 1997, 8 of the 17 DoD Components submitting responses to JTA Version 1.0 provided detailed plans. Six of the eight detailed plans addressed all of the topics in the October 1996 memorandum. Additionally, the report stated that DoD Component plans should have included three additional significant planning topics: the DoD Component priority for JTA implementation, estimated cost for JTA implementation, and an implementation schedule.

The implementation plans available, as of June 30, 2000, showed that 11 DoD Components had submitted JTA Versions 2.0 or 3.0 implementation plans (10 updated plans and one additional DoD Component making an initial submission of a JTA implementation plan). Seven of the 11 plans did not address one or more of 12 planning topics (9 topics that the Policy Offices established in the October 1996 memorandum and the 3 additional topics discussed in Inspector General, DoD, Report No. 98-023). The following tables show the number of plans that did not address each planning topic and the number of topics that each DoD Component did not address in its plans.

Table 1. DoD Component Plans Not Addressing Planning Topics

<u>Planning Topics</u>	<u>Number of Plans That Did Not Address Planning Topics</u>
1. Management and oversight structure, processes, and responsibilities	0
2. Approach to configuration management and control	2
3. Implementation procedures and the organizations overseeing these	0
4. Approach for using JTA domains	1
5. Criteria for migration to JTA compliance	1
6. Customer support	3
7. Training and education	4
8. Plans to integrate with other ongoing Component initiatives	2
9. Strategy for assessing progress towards implementation	1
10. Priority for implementing JTA standards	4
11. Budgeting for the JTA	3
12. Timeframes for implementing JTA standards	5

Table 2. Planning Topics That DoD Components Did Not Address

<u>DoD Component Plans</u>	<u>Number of Planning Topics Not Addressed</u>
Army	0
Navy	3
Air Force	1
Ballistic Missile Defense Organization	4
Defense Information Systems Agency	0
Defense Intelligence Agency	2
Defense Logistics Agency	5
National Imagery and Mapping Agency	0
National Security Agency	1
United States Special Operations Command	0
Defense Threat Reduction Agency	10*

*The Defense Threat Reduction Agency indicated that on December 29, 1999, the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) authorized the Defense Threat Reduction Agency to do a preliminary plan as a result of the Agency absorbing the Defense Special Weapons Agency and the Onsite Inspection Agency on October 1, 1998.

Appendix E provides a detailed comparison of the contents of the updated and initial JTA implementation plans against the direction that DoD Components received from the Policy Offices and the additional planning elements cited in Inspector General, DoD, Report No. 98-023.

Variance in JTA Provisions. The 11 DoD Component implementation plans for JTA Versions 2.0 and 3.0 varied significantly in their provisions for implementing the standards contained in the JTA. The variances occurred because the Policy Offices had not prepared a template for DoD Component use that listed and explained the required planning topics and content for each topic based on individual DoD Component missions and activities. In reviewing individual DoD Component plans, we noted unique strengths that could be

beneficial for all Components to address in their plans. Significant unique provisions of JTA implementation plans that the Army, Navy, and Air Force prepared follow.

Army. The Army implementation plan required program milestone decision authorities to use JTA compliance as exit criteria for acquisition program milestone reviews and future program advancement and funding. Also, the Army provided a specific schedule for implementing the standards contained in the JTA, with the requirement that all Army systems meet all applicable JTA standards by the end of FY 2006.

Navy. The Navy implementation plan defined the language that DoD Components and program managers should include in the mission needs statement, the operational requirements document, and the system specification to ensure that system planning documents complied with JTA requirements. Also, the Navy identified the organizations responsible for reviewing the planning documents for JTA compliance.

Air Force. The Air Force implementation plan provided a compliance assessment template for program managers to complete as a tool to assist the program managers in implementing the standards contained in the JTA.

Planning Direction and Oversight

DoD Component plans for implementing the standards contained in the JTA did not fully comply with guidance from the Policy Offices and did not show a consistent approach in implementing the JTA because the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) did not :

- identify the universe of DoD Components that should submit JTA implementation plans;
- issue definitive guidance for preparing and updating the plans; and
- establish formal management processes to receive, track, evaluate, and provide feedback on the content of the plans.

Submission List. The Offices of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) and the Under Secretary of Defense for Acquisition, Technology, and Logistics had not initially coordinated to identify the universe of DoD Components that should formulate JTA implementation plans based on their missions and activities. Subsequent memorandums sent out to implement JTA Versions 1.0, 2.0, and 3.0 were addressed to the Secretaries of the Military Departments; the Chairman, Joint Chiefs of Staff; the Under and Assistant Secretaries of Defense; Assistants to the Secretary of Defense; the DoD General Counsel; the Director, Operational Test and Evaluation; and the Directors of Defense Agencies. The November 1998

and November 1999 memorandums implementing JTA Versions 2.0 and 3.0, respectively, requested plans from “Each DoD Component and cognizant OSD authority” While the Office of the Assistant Secretary widely disseminated the JTA implementation memorandums, the Office had not taken action to ensure that all DoD Components engaged in acquisition of new or modified capabilities meeting the criteria for JTA requirements submitted implementation plans.

As discussed above, Inspector General, DoD, Report No. 98-023 reported that fewer than half of DoD Components responded to the Assistant Secretary’s request for implementation plans for JTA Version 1.0 and since then, only one other DoD Component had submitted an initial implementation plan. Accordingly, the Office of the Assistant Secretary needs to identify the universe of DoD Components that, based on their acquisition efforts, should be submitting JTA implementation plans. The Office of the Assistant Secretary can then direct its attention to ensuring that all DoD Components establish processes and procedures for submitting JTA implementation plans, as required, and provide direction, as needed, on the suitability of submitted plans.

Guidance. When requesting DoD Components to update their JTA implementation plans for JTA Versions 2.0 and 3.0, the Policy Offices did not reference the earlier memorandum, “Clarification on the Content of DoD Components’ Joint Technical Architecture Implementation Plans,” October 4, 1996, that identified the nine planning topics for inclusion in the DoD Component implementation plans. Also, the Office of the Assistant Secretary did not provide direction that the three additional planning topics (budgeting for JTA, priority for implementing JTA, and timeframes for implementing JTA) identified in Inspector General, DoD, Report No. 98-023 should be included in the DoD Component implementation plans for JTA Versions 2.0 and 3.0.

Management Processes. The Policy Offices delegated responsibility to each DoD Component for implementing the standards contained in the JTA. In the “Implementation of the Technical Architecture” (Version 1.0)” memorandum, the Policy Offices assigned the DoD Components the responsibility for assuring compliance with the JTA, including programming and scheduling resources for JTA implementation. The Policy Offices gave similar direction in the implementation memorandum for JTA Version 2.0. As a result, the Policy Offices did not review, approve, or provide feedback to the DoD Components on the content of their implementation plans. As discussed above, the three Military Departments’ implementation plans had unique strengths. Through review, feedback, and approval, the Policy Offices could assist the DoD Components in ensuring that the JTA implementation plans are complete and consider best practice planning provisions from other DoD Components’ implementation plans.

During the audit for Inspector General, DoD, Report 98-023, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) staff stated that the office was forming a review team to develop criteria by August 1997 for analyzing JTA implementation plans. Staff at the Office of the Assistant Secretary stated that the office had not formed the review team because of a lack of personnel resources. However, during the course of our audit, the Office began action that, when completed, will allow it to receive, track, evaluate, and provide review and feedback on DoD Component plans. On

August 1, 2000, the Office of the Assistant Secretary issued for coordination a draft update of DoD Regulation 4630.8, "Procedures for Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems," November 18, 1992. The draft requires the DoD Chief Information Officer [the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)] to review and approve DoD Component JTA implementation plans.

Value of JTA Implementation Planning

Without effective oversight from the Policy Offices, DoD Components may not formulate and execute consistent and well-planned JTA implementation plans and the JTA will not achieve maximum effectiveness as a tool for promoting overall DoD system interoperability requirements in individual weapon systems. As defined in the JTA implementation memorandums, JTA implementation plans are designed to ensure that each DoD Component:

- defines tailored processes for assuring JTA compliance, for programming and budgeting resources for implementing compliance, and for tracking implementation progress;
- assigns and designates roles and responsibilities within the DoD Component for implementing the standards contained in the JTA in their acquisition programs;
- defines responsibilities within the DoD Component for reviewing program requests for waiver of JTA standards for mission-critical and mission-essential National Security Systems to support the Component Acquisition Executive in determining whether to approve waiver requests and to forward them to the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), as the DoD Chief Information Officer, for review.

The Assistant Secretary of Defense (Command, Control, Communications and Intelligence) requirement for DoD Component implementation plans is consistent with his responsibilities as DoD Chief Information Officer, which, as stated in public law, includes ensuring the information interoperability of National Security Systems and Information Technology Systems.

Management Comments on the Finding and Audit Response

Summaries of management comments on the finding and our response are in Appendix G.

Recommendations Management Comments, and Audit Response

Revised Recommendations. As a result of the management comments, we revised the lead-in to the draft recommendations to recommend that the Policy Offices establish organizational responsibilities for performing the recommended actions rather than establishing an organization with responsibilities for performing these actions.

A. We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers, as co-chairs of the Architecture Coordination Council, establish organizational responsibility for:

1. Identifying the universe of DoD Components that, based on their acquisition efforts, should be submitting plans for implementing the DoD Joint Technical Architecture.

Under Secretary of Defense for Acquisition, Technology, and Logistics Comments. The Director, Interoperability, responding for the Under Secretary, nonconcurred with the recommendation, as written in the draft report. He requested that we modify the recommendation to require the Policy Offices, as co-chairs of the Architecture Coordination Council, to establish organizational responsibilities for the recommended actions rather than establishing an organization with these responsibilities. The Director stated that this change would allow the Architecture Coordination Council to decide on how to implement the recommendations rather than dictating the establishment of a new organization. Additionally, the Director stated that we should clearly distinguish, throughout the report, between the phrases “implementing the JTA” and “implementing JTA standards.” He stated that the Component Acquisition Executives are responsible for implementing the JTA in their requirements procedures and processes. He stated that program managers are responsible for implementing only the appropriate JTA standards in the products that result from the requirements process. The Director also stated that he could not provide completion dates for implementing this recommendation and Recommendations A.2., A.3., and A.4. until after the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of

Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers finalized the charter for the Architecture Integration Council in the next few months. The Architecture Integration Council will replace the Architecture Coordination Council, and the Director stated that he expects action to implement the recommendations to occur in a manner to which the new Council agrees.

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments. The Director, Architecture and Interoperability, responding for the Assistant Secretary, concurred, stating that his office will work with the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics to identify the universe of DoD Components that they will require to submit JTA implementation plans. The Director stated that the universe of DoD Components required to submit JTA implementation plans would be those Components having Component Acquisition Executive or equivalent acquisition authority.

Joint Chiefs of Staff Director for Command, Control, Communications and Computers Comments. The Vice Director, Joint Staff, responding for the Director for Command, Control, Communications and Computers, nonconcurred, stating that JTA implementation memorandums addressed DoD Components as defined in DoD Directive 5025.1, "DoD Directives System," July 27, 2000. The Vice Director further stated that those DoD Components having major acquisition involvement had submitted their JTA implementation plans.

Audit Response. The Director, Interoperability, and the Director, Architecture and Interoperability, comments were responsive. In response to those comments, we modified the recommendation to require that the Architecture Coordination Council establish organizational responsibilities for the recommended actions. We kept the phrase "implementing the JTA" in the recommendation because we were referring to a JTA responsibility of the DoD Component Acquisition Executives. Where necessary, we made revisions to the text of the report to more appropriately use the JTA implementation phrases. While the comments from the two Directors were responsive, the organizational responsibilities for achieving the corrective action differed. The Director, Interoperability, stated that the Offices of the Under Secretary, the Assistant Secretary, and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers would implement the recommendations through the new Architecture Integration Council. Conversely, the Director, Architecture and Interoperability, stated that his Office would work with the Offices of the Under Secretary to identify the universe of DoD Components required to submit JTA implementation plans and did not mention the Architecture Integration Council.

The comments from the Vice Director, Joint Staff, were not responsive. Although the JTA implementation memorandums that the Vice Director cited in his response had a broad distribution, the Policy Offices had not identified the universe of DoD Components that, based on their acquisition efforts, should be submitting JTA implementation plans. Additionally, while those DoD

Components having major acquisition involvement may have submitted a JTA implementation plan, six DoD Components had only submitted implementation plans for JTA Version 1.0 and not for JTA Version 2.0 as detailed in Appendix E.

In response to the final report, we request that the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers, in a coordinated response, provide an estimated completion date for the Architecture Integration Council to identify the universe of DoD Components required to submit JTA implementation plans.

2. Developing and distributing to DoD Components a template for preparing DoD Joint Technical Architecture implementation plans that would include a listing and explanation of required DoD Joint Technical Architecture planning topics and the rationale for each planning topic, and considerations for addressing each topic.

Under Secretary of Defense for Acquisition, Technology, and Logistics Comments. The Director, Interoperability, concurred, but requested that the recommended template should also include sample language for DoD Components to use in developing requests for proposals and contract statements of work, as well as guidance on distinguishing JTA implementation template approaches between weapon systems and business systems. The Director stated that the templates could provide a vehicle for standard contractual language. He stated that, for business systems, the separate template would provide a guide to distinguish JTA implementation approaches from those used for weapon systems.

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments. The Director, Architecture and Interoperability, concurred, stating that the Deputy Chief Information Officer's office would direct the Defense Information Systems Agency Center for Standards to develop a template for the JTA implementation plan that the DoD Components would use in developing their JTA implementation plans. He further stated that the Defense Information Systems Agency would post the template, to include planning topics and content considerations, to the JTA web page immediately upon completion and would incorporate the template into the next revision of the JTA as an appendix. The Director anticipated completing corrective action on this recommendation by October 1, 2001.

Joint Chiefs of Staff Director for Command, Control, Communications and Computers Comments. The Vice Director, Joint Staff, nonconcurred, stating that current DoD procedures already addressed the recommendation. Specifically, he stated that acquisition-related language mandating program office use of the JTA is already contained in DoD Regulation 5000.2-R, January 4, 2001. Additionally, he stated that Director, Joint Staff Memorandum 77-99, "Guidance for DoD Joint Technical Architecture Version 2.0 Implementation Plans," January 1999, provided further instructions for DoD Components to follow.

Audit Response. The comments from the Director, Interoperability, and the Director, Architecture and Interoperability, were responsive. We did not revise our recommendation to add template sample language for DoD Components to use in developing requests for proposals and contract statements of work because the recommendation addresses JTA plans and topics. However, the Policy Offices could consider including the area of contract planning as another JTA planning topic. Also, sample language for requests for proposals and contract statements of work are contained in the draft version of the “DoD Joint Technical Architecture User Guide,” April 11, 2000, as discussed in the “Guidance on the Use of the JTA” section of finding B.

The comments from the Vice Director, Joint Staff, were partially responsive. The Director Joint Staff Memorandum 77-99 includes excerpts from the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) memorandum, “Clarification on the Content of DoD Components’ Joint Technical Architecture Implementation Plans,” October 4, 1996, concerning elements that DoD Components should address in JTA implementation plans. However, the excerpts do not list and explain required JTA planning topics, the rationale for each topic, and the considerations for addressing each topic as stated in the recommendation.

No further comments on this recommendation are necessary because the Director, Architecture and Interoperability, has taken responsibility for implementing the recommendation by October 1, 2001.

3. Establishing control procedures and requirements to ensure that DoD Components submit and maintain compliance with their JTA implementation plans.

Under Secretary of Defense for Acquisition, Technology, and Logistics

Comments. The Director, Interoperability, did not specifically comment on this recommendation. However, he expected the Architecture Integration Council and the Architecture Integration Group (which would replace the current Architecture Coordination Council) to act upon the recommendations contained in the report.

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments. The Director, Architecture and Interoperability, concurred, stating that draft DoD Instruction 4630.8, “Procedures for Interoperability and Supportability of Information Technology and National Security Systems,” which was in formal coordination, requires DoD Components to submit JTA implementation plans to the DoD Chief Information Officer for review. The Director additionally stated that the Directorate for Architecture and Interoperability, Office of the Deputy Chief Information Officer, will conduct implementation plan reviews. The Director anticipated completing corrective action on this recommendation by October 1, 2001.

Joint Chiefs of Staff Director for Command, Control, Communications and Computers Comments. The Vice Director, Joint Staff, nonconcurred, stating that the Policy Office Memorandum “DoD Joint Technical Architecture (JTA)

Version 3.0,” November 29, 1999, mandates implementation plan submission and identifies conditions under which DoD Components would not need to submit JTA implementation plans.

Audit Response. The comments from the Director, Architecture and Interoperability, were responsive. If implemented, his planned actions will provide control procedures and requirements for ensuring that DoD Components submit and maintain compliance with their JTA Implementation plans. The comments from the Vice Director, Joint Staff, were not responsive. The Policy Offices’ memorandum did not provide for implementation plan reviews and, as evidenced in the finding, the Policy Offices were not reviewing the plans and providing feedback to the DoD Components on the completeness of the plans.

No further comments on this recommendation are necessary as the Director, Architecture and Interoperability, has taken responsibility for implementing the recommendation by October 1, 2001.

4. Reporting the status of DoD Component plans for implementing the Joint Technical Architecture to the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers.

Under Secretary of Defense for Acquisition, Technology, and Logistics Comments. The Director, Interoperability, did not specifically comment on the recommendation. However, he expected the Architecture Integration Council and the Architecture Integration Group (which would replace the current Architecture Coordination Council) to act upon the recommendations contained in the report.

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments. The Director, Architecture and Interoperability, concurred, stating that his office would establish a reporting mechanism for DoD Components to provide JTA implementation status to the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); the DoD Chief Information Officer, and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers. The Director anticipated completing corrective action on this recommendation by October 1, 2001.

Joint Chiefs of Staff Director for Command, Control, Communications and Computers Comments. The Vice Director, Joint Staff, nonconcurred, stating that implementing the recommendation would be a duplicative effort because JTA implementation requirements are documented in DoD Regulation 5000.2-R.

Audit Response. The comments from the Director, Architecture and Interoperability, were responsive. The comments from the Vice Director, Joint Staff, were not responsive. The recommendation is not duplicative because DoD Regulation 5000.2-R does not include requirements for the DoD Components to report the status of their plans for implementing the Joint Technical Architecture.

No further comments on this recommendation are necessary as the Director, Architecture and Interoperability, has taken responsibility for implementing the recommendation by October 1, 2001.

B. Use of the Joint Technical Architecture Requirements in Weapon System Acquisition Documentation

Program managers and DoD Components were not held accountable in the requirements generation process and at acquisition milestone decision points for including JTA standards requirements in key acquisition planning documents. Of the 43 major Defense acquisition program managers responding to our survey whose programs were in the program definition and risk reduction or the engineering and manufacturing development phases of the acquisition process, as of June 30, 2000:

- thirty-nine program managers or their DoD Components did not insert JTA or JTA-compliant DoD Component technical architecture standards requirements into one or more key acquisition planning documents, and
- ten program managers did not require contractors to use JTA standards in supporting the design of their system or system upgrade.

Program managers and DoD Components did not include use of JTA standards in acquisition planning documents because the program managers and DoD Components were not submitting or were late in submitting the documents for Defense Information System Agency review as part of the requirements generation process that occurs before the milestone decision points. The Agency was then unable to timely advise program managers, DoD Components, milestone decision authorities, and the Joint Chiefs of Staff on program compliance with JTA standards requirements. Also, while survey responses indicated that Component Acquisition Executives and Program Executive Officers reviewed program manager use of JTA standards, their reviews had not resulted in consistent inclusion of JTA standards requirements in key acquisition planning documents. Additionally, program managers and DoD Components were not complying with updates to the JTA standards requirements because the Policy Offices were still incorporating JTA Version 2.0 requirements in DoD policy documents and developing guidance to provide users with a more efficient means to determine which JTA standards and protocols applied to their systems. As a result, the DoD will not fully realize the JTA objective of improving and facilitating the ability of its systems to support joint and combined operations in an overall investment strategy.

Joint Technical Architecture Policy

The Policy Offices provided DoD Components with direction for implementing the standards contained in the JTA in weapon system requirements and acquisition documentation through the three memorandums discussed in finding A. The Under Secretary of Defense for Acquisition, Technology, and Logistics incorporated the JTA requirements for JTA Version 1.0 in DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs," March 15, 1996.

Survey of Acquisition Program Manager and DoD Component Use of the JTA

Program managers and DoD Components were not held accountable in the requirements generation process and at milestone decision points for including JTA standards requirements in key acquisition planning documents. We surveyed responses from program managers for 43 major Defense acquisition programs that were in the program definition and risk reduction or engineering and manufacturing development phases of the acquisition process, as of June 30, 2000, to determine how many DoD Components and program managers inserted JTA or JTA-compliant technical architecture standards requirements into the following four key acquisition documents: the mission needs statement, the operational requirements document, the request for proposal, and the contract statement of work. Appendix F discusses the general purpose of each of the four acquisition planning documents, the organization responsibilities for preparing the document, and the document's relationship to program manager use of JTA standards. As discussed in Appendix F, the DoD Components have responsibility for preparing the initial draft versions of the mission needs statements and the operational requirements documents, while the program managers prepare the request for proposals and the contract statements of work.

Requirements in Key Acquisition Planning Documents. The survey results showed that program managers and DoD Components did not routinely insert JTA standards in key acquisition planning documents to use in the system design. In the following table of key acquisition planning documents, we show the number of program managers, out of the 43 providing survey responses, who indicated that they or their DoD Component had not inserted language on the use of technical architecture standards for JTA or JTA-compliant Component requirements into each document. The table also shows the number of program managers who provided a response to the survey question regarding each document.

Table 3. Programs Not Including JTA Language in Acquisition Documents

<u>Acquisition Document</u>	<u>Number of Responding Programs Not Including JTA Language</u>
Mission Needs Statement	(39 of 42 programs)
Operational Requirements Document	(19 of 42 programs)
Requests for Proposal	(24 of 42 programs)
Contract Statement of Work	(26 of 42 programs)

We reviewed survey responses from the 13 program managers who provided explanations for their programs not having language concerning the required use of JTA or JTA-compliant Component technical architecture standards requirements in the mission needs statement and the operational requirements document. The most common explanation, which 6 of the 13 program managers cited, was that their development contract (and therefore the mission needs statement and the operational requirements document) predated the JTA. However, this reason is not valid, based on DoD policy, because the Policy Offices, in their memorandums, “Implementation of the DoD Technical Architecture,” August 22, 1996 (Version 1.0) and “DoD Joint Technical Architecture (JTA) Version 2.0,” November 30, 1998, stated that implementation of Versions 1.0 and 2.0 was effective immediately for all emerging programs or for modification to existing programs unless the Component Acquisition Executive granted a waiver based on cost, schedule, or performance impacts of using JTA standards. Other reasons program managers gave for their DoD Component not inserting JTA standards requirements in the mission needs statement and the operational requirements document included no system requirement for interoperability (three program managers), documents not yet completed (one program manager), and other reasons (three program managers). The other reasons included that the system development contract was not based on Federal Acquisition Regulation requirements, it complied with system design requirements of non-DoD agencies, and it already contained a requirement for the contractor to use JTA standards. Program manager explanations for not inserting JTA standards requirements into the requests for proposals and contract statements of work are discussed below.

Contractors Using Technical Architecture Requirements in the System Design. Correspondingly, and as a direct result of the above emphasis of JTA standards requirements in the key acquisition planning documents, the

43 program managers indicated that their contractors used the JTA or JTA-compliant Component technical architecture standards in the design of their system or system upgrades as follows:

- ten contractors were not using JTA or JTA-compliant Component technical architecture standards,
- ten contractors were using JTA Version 3.0 requirements,
- twelve contractors were using JTA Versions 1.0 or 2.0 requirements,
- five contractors were using JTA-compliant Component technical architecture standards, and
- six contractors were using JTA and JTA-compliant Component technical architecture standards.

We reviewed survey responses from the 10 program managers who provided explanations for their programs not having language concerning the required use of JTA standards in requests for proposals and contract statements of work. Like the mission needs statement and the operational requirements documents, the most common reason, which 3 of 10 managers cited, was that their development contract predated the JTA. As discussed above, the timing of the introduction of JTA does not exempt program managers from the requirement to use JTA standards. Three program managers stated that their system was a subsection of a larger program and that interoperability was the responsibility of the program manager for the larger program. The other four program managers cited different reasons for the contractors not using JTA standards. These other reasons included the JTA exemption was granted in the Component JTA Implementation Plan, the requirements documents did not require a technical architecture, the system architecture was not yet defined, and the contract was not based on Federal Acquisition Regulation requirements.

Mandating Use of the JTA in the Acquisition Planning and Review Process

Program managers and DoD Components were not held accountable in the requirements generation process and at milestone decision points for including JTA standards requirements in key acquisition planning documents because program managers and DoD Components were not submitting or were late in submitting the documents for Defense Information Systems Agency (Agency) review as part of the requirements generation process that occurs before the milestone decision points. The Agency was then unable to advise the milestone decision authorities on program manager and DoD Component compliance with JTA standards requirements. Also, while survey responses indicated that Component Acquisition Executives and Program Executive Officers reviewed program manager use of JTA standards, their reviews had not resulted in consistent inclusion of JTA standards requirements in key acquisition planning documents. Additionally, program managers were not complying with updates

to the JTA standards requirements because the Policy Offices were still incorporating JTA Version 2.0 requirements into DoD policy documents and developing guidance to provide users with a more efficient way to determine which JTA standards and protocols applied to their systems.

Chairman, Joint Chiefs of Staff, and Defense Information Systems Agency Review. The Chairman of the Joint Chiefs of Staff (acting through his Staff Director for Command, Control, Communications and Computers) and the Agency are responsible for reviewing the draft mission needs statements and operational requirements documents that the DoD Components submit as part of the requirements generation process, defined in Chairman Joint Chiefs of Staff Instruction (CJCSI) 3170.01A, "Requirements Generation System," August 10, 1999. In CJCSI 6212.01B, "Interoperability and Supportability of National Security Systems, and Information Technology Systems," May 8, 2000, the Chairman, Joint Chiefs of Staff, provides specific guidance for review of interoperability requirements in the mission needs statement and the operational requirements documents. This Instruction requires that the Staff Director for Command, Control, Communications and Computers and the Agency review program mission needs statements, operational requirements documents, and other program documentation to assess the suitability of standards identified in the documents. The Staff Director's review is accomplished within prescribed timeframes after the documents are submitted for review. To facilitate the Staff Director's review, the Instruction includes a checklist of assessment criteria. The assessment criteria require:

- the mission needs statement to include a requirement that the system developers use applicable standards from the JTA to ensure maximum interoperability, and
- the operational requirements document to require the system to comply with applicable information technology standards contained in the current JTA.

DoD Instruction 4630.8, "Procedures for Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems," November 18, 1992, also requires the Agency to perform interoperability assessments of mission needs statements and operational requirements documents. During the audit, the DoD Instruction 4630.8 was being revised; however, the draft revision dated October 15, 2000, maintained a requirement for the Agency to assess the suitability of standards identified in requirements documents.

The Joint Chiefs of Staff and the Agency could not consistently accomplish the reviews of the acquisition planning documents before milestone decision reviews because program managers and DoD Components either did not submit program documents or submitted them too late (close to acquisition milestone review). Although both CJCS Instruction 6212.01B and DoD Instruction 4630.8 provide calendar day standards for Joint Chiefs of Staff and Agency review of acquisition planning documents, they do not explicitly provide time frames, prior to milestone or other reviews, for DoD Components to forward draft documents for review. Additionally, the Joint Interoperability and Engineering

Organization and Joint Interoperability Test Command Circular 9002, “Requirements Assessment and Interoperability Certification of C⁴I and AIS Equipment and Systems,” January 23, 1995, does not address use of the JTA standards. Circular 9002, which predates JTA implementation, implements policy and defines responsibilities for DoD requirements certification, interoperability testing, and system certification. Further, Circular 9002 describes the Agency’s processes for determining the extent to which systems’ requirements documents, such as the mission needs statement and the operational requirements documents, satisfy DoD policy for compatibility, interoperability, and integration. Circular 9002 also provides guidance for warfighter preparation of requirements documentation.

For the 17 major Defense acquisition programs that entered the program definition and risk reduction phase or the engineering and manufacturing development phase of the acquisition process between March 1996 and December 1999, the Agency did not perform a review of the two requirements documents for JTA standards compliance before the milestone decision reviews as follows

- Mission needs statements - 15 programs
- Operational requirements documents - 4 programs

The Agency’s or other competent DoD office’s reviews of key requirements documents for JTA standards compliance and forwarding of review results to the applicable overarching integrated product teams is critical to enforcement of JTA standards requirements. With this information, the product teams can advise the milestone decision authorities on whether the DoD Components and program managers complied with JTA standards requirements in the mission needs statement, the operational requirements document, the request for proposal, and the contract statement of work before decisions are made at acquisition milestone reviews.

Component Acquisition Executive and Program Executive Officer Review. Responses from the Component Acquisition Executives and Program Executive Officers to survey questionnaires indicated that they did review program manager use of JTA standards. Specifically, all 15 Program Executive Officers responding stated that they performed some review of program manager use of JTA standards. Ten of the 15 Program Executive Officers stated that they reviewed program manager use of JTA standards as part of the milestone reviews for acquisition programs, and 9 of the 10 Program Executive Officers stated that they also performed interim reviews for JTA standards use between program milestone decision points. Of the five program executive officers who stated that they did not review program manager use of the JTA standards as part of program milestone reviews, four stated that they did review program manager use of the JTA standards between program milestones. A Component Acquisition Executive stated that he reviewed program manager use of JTA standards as part of milestone reviews for acquisition programs, periodic progress reviews between milestone decision points, and other program reviews. However, reviews by Component Acquisition Executives and Program Executive Officers of mission needs statements, operational requirements

documents, requests for proposals, and contract statements of work did not ensure that the acquisition planning documents contained JTA standards requirements.

Because CJCSI 6212.01B requires the Staff Director for Command, Control, Communications and Computers, Joint Chiefs of Staff, and the Agency to review mission needs statements and operational requirements documents in support of the Joint Chiefs of Staff, the Component Acquisition Executives and Program Executive Officers should place greater emphasis on reviewing requests for proposals and contract statements of work for inclusion of JTA standards specified in mission needs statements and operational requirements documents. Their review of requests for proposal and the contract statements of work for JTA compliance before milestone decision reviews is critical because those documents guide the contractor in the system design process.

Updating Policy. The Policy Offices were still incorporating JTA Version 2.0 requirements from November 1998 into DoD policy documents. During our audit, the Policy Offices were working on or had recently completed policy and guidance document updates to address program manager and DoD Component use of JTA standards. Policy document updates include:

- The May 11, 1999, revision of DoD Regulation 5000.2-R contains JTA requirements for JTA Version 1.0 from the Policy Offices' memorandum issued in August 1996. The Regulation states that the JTA applies to all emerging DoD command, control, communication, computer, and intelligence systems; upgrades to these systems; and interfaces of these systems to other key assets, such as weapons and office automation systems. The Policy Offices' memorandum on JTA Version 2.0, which was issued in November 1998, broadened the JTA applicability to all emerging systems, or changes to an existing capability that produces, uses, or exchanges information in any form electronically; crosses a functional or DoD Component boundary; and gives the warfighter or DoD decisionmaker an operational capability. A steering group, co-chaired by representatives from the Offices of Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) during 1998 and 1999, recommended revising the regulation to include JTA Version 2.0 requirements.

The January 4, 2001, interim revision to DoD Regulation 5000.2-R updated sections on interoperability, systems engineering, design considerations, and standardization to fully implement the broadened applicability of the JTA Version 2.0 discussed in finding A. Additionally, the revised regulation added a section on Command, Control, Communication, Computers, and Intelligence Support that includes the requirement for program managers to prepare Command, Control, Communication, Computers, and Intelligence Support Plans (C⁴I Support Plans), which DoD Components are to review at each acquisition milestone. The C⁴I Support Plans are to describe system dependencies and interfaces in sufficient detail to enable test planning for the interoperability key performance parameters defined in the

operational requirements document and for information exchange requirements. C⁴I Support Plan requirements include program identification of applicable technical standards for information exchange requirements based upon the JTA and are required for National Security Systems and Information Technology segments of programs in all acquisition categories.

- DoD Manual 4120.24-M, “Defense Standardization Program (DSP) Policies and Procedures,” March 2000, provides policy and procedure for implementing the Defense Standardization Program as outlined in DoD Instruction 4120.24, “Defense Standardization Program,” June 18, 1998. DoD Manual 4120.24-M includes the requirement for program offices to use JTA standards for all new or upgraded systems.
- DoD Instruction 4630.8, “Procedures for Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C³I) Systems,” November 18, 1992, predates requirements for using the JTA in the systems acquisition process. In a draft update of the Instruction dated October 15, 2000, the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) inserted the following requirements for use of the JTA:
 - The DoD Chief Information Officer [the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)] will review and approve DoD Component JTA implementation plans;
 - The Heads of DoD Components shall establish administrative procedures for consideration of JTA waiver requests. Program waiver requests shall identify resulting cost, schedule, performance, and potential operational impacts if a waiver is not granted. DoD Components will participate in the development of JTA standards, develop JTA implementation plans, and enforce JTA implementation through program reviews for compliance assurance and programming and budgeting resources.
 - The Defense Information Systems Agency will verify that requirements in program mission needs statements and operational requirements documents are consistent with appropriate JTA standards.
- The Under Secretary of Defense for Acquisition, Technology, and Logistics had not agreed to the Office of the Assistant Secretary of Defense’s draft update to DoD Instruction 4630.8. The Director of Interoperability, within the Office of the Under Secretary, stated that the Architecture Coordination Council, which is co-chaired by the senior officials of the Policy Offices, should direct JTA roles and responsibilities within DoD and not the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). The Policy

Offices formed the Architecture Coordination Council in January 1997 to establish comprehensive JTA architectural guidance and to synchronize ongoing JTA architecture work.

- The Chairman of the Joint Chiefs of Staff revised CJCSI 3170.01A, “Requirements Generation Systems,” in August 1999, to require that DoD Components’ operational requirements documents state that the system must comply with applicable information technology standards in the JTA and include a key performance parameter for interoperability. The revision also requires that the Joint Chiefs of Staff Directorate for Command, Control, Communications and Computers certify that mission needs statements, operational requirements documents, and other planning documents comply with interoperability policy and standards. Like the revisions to DoD Regulation 5000.2-R, those changes resulted from the efforts of the 1998 and 1999 steering group.
- The Chairman of the Joint Chiefs of Staff issued CJCSI 6212.01B on May 8, 2000, which requires that the DoD Chief Information Officer ensure the interoperability of national security and information technology systems. The Instruction provides checklists that the Agency used to review the contents of mission needs statements and operational requirements documents to determine whether the documents included the requirement for systems to comply with standards contained in the JTA.

If fully adopted in the acquisition and warfighting communities, the policy changes will reinforce the mandatory use of JTA standards to acquisition program managers and DoD Components.

Guidance on Use of the JTA. Of the 43 major Defense acquisition program managers responding to our survey that were in the program definition and risk reduction or the engineering and manufacturing development phases of the acquisition process, 35 responded to our survey question on experience in using JTA standards. Of the 35 program managers responding, 12 stated that the Policy Offices needed to modify the JTA documentation to provide users with a more efficient means for obtaining a user-specific profile of the JTA and for determining which standards and protocols applied to their system. Additionally, of the 36 program managers responding to our survey question on the degree of difficulty in identifying and selecting applicable JTA standards and protocols for use in systems design, only 8 program managers responded that it was easy to identify and select standards, 25 said moderate effort was required, and 3 said selection was very difficult. During the audit, the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) was developing a JTA user guide and a Virtual JTA, which is a more automated version of the JTA 3.0., to provide program managers with more user-friendly guidance for using the JTA. In the draft version of the “DoD Joint Technical Architecture User Guide,” April 11, 2000, the Office of the Assistant Secretary provided general information and text for specifying use of JTA standards in requests for proposals and contract statements of work. However, the planned users’ guide did not provide template language for the DoD Component to use in preparing the mission needs statement and the

operational requirements document. As part of developing the Virtual JTA, the Office of the Assistant Secretary plans to include a capability designated as a “compliance management planner.” The compliance management planner is an automated capability that will help DoD Components and program managers to more easily identify and select JTA standards applicable to their systems.

Summary

As emphasized in the JTA Version 3.0 implementation memorandum, the JTA mandates interoperability standards and guidelines for systems development and acquisition to facilitate joint and coalition force operations and provide the technical foundation for interoperability among all tactical, strategic, and combat support operations. Without consistent program manager and DoD Component use of JTA standards requirements, and without effective and efficient architecture development policies and procedures in designing systems, the DoD will not fully realize the JTA objective to improve and facilitate the ability of its systems to support joint and combined operations in an overall investment strategy.

Management Comments on the Finding and Audit Response

Summaries of management comments on the finding and audit response are in Appendix G.

Recommendations Management Comments, and Audit Response

Redirected and Revised Recommendations. As a result of management comments, we redirected Recommendation B.1. to the Joint Chiefs of Staff Director for Command, Control, Communications and Computers, because his office oversees the requirements generation process. We also revised Recommendation B.2. to recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics establish a process for reviewing requests for proposals and contract statements to determine whether they include requirements for use of the JTA standards, rather than recommending assigning document review responsibility to a particular organization.

B.1. We recommend that the Joint Chiefs of Staff Director for Command, Control, Communications and Computers, in coordination with the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), establish time frames for DoD Components to input draft and final versions of mission needs statements and operational requirements documents to the Defense Information Systems Agency to enable it to review the adequacy of the DoD Component’s planned use of the DoD Joint Technical Architecture standards as required in Chairman, Joint Chiefs of

Staff Instruction 6212.01B, “Interoperability and Supportability of National Security Systems, and Information Technology Systems,” May 8, 2000, before planned milestone decision reviews.

Under Secretary of Defense for Acquisition, Technology, and Logistics Comments. The Director, Interoperability, responding for the Under Secretary, partially concurred, but suggested that we redirect the recommendation to the Joint Chiefs of Staff in coordination with the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), because the Joint Staff oversees the requirements generation process, not the acquisition organizations.

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments. The Director, Architecture and Interoperability, responding for the Assistant Secretary, concurred, stating that his office would coordinate with the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers to establish required timelines for DoD Components to submit draft operational requirements documents and C⁴I Support Plans to the Joint Staff for certification. The Director stated that, based on the timelines established in Chairman Joint Chiefs of Staff Instruction 6212.01B for reviewing operational requirements documents and C⁴I Support Plans, his office will recommend that the DoD Components submit these documents 180 calendar days before planned milestone decision reviews. The Director added the C⁴I Support Plans into planned corrective actions but did not include the mission needs statement because he believed that a statement of planned use of the JTA standards in requirements documents is appropriate only for the operational requirements document and the C⁴I Support Plan.

Joint Chiefs of Staff Director for Command, Control, Communications and Computers Comments. Although not required to comment, the Vice Director, Joint Staff, stated that the requirements process is the responsibility of the Chairman, Joint Chiefs of Staff, and that the Defense Information Systems Agency already reviews requirements documents before milestone approval as required by the DoD 5000 series, CJCSI 3170.01A, and CJCSI 6212.01B, as a part of the review and certification process for requirements documents.

Audit Response. In response to the management comments, we redirected the recommendation to the Joint Chiefs of Staff Director for Command, Control, Communications, and Computers, in coordination with the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), because the Joint Staff oversees the requirements generation process.

The comments from the Director, Architecture and Interoperability, were responsive. We agree with the Director’s assertion that having JTA language in the C⁴I Support Plan as well as in the operational requirements document is important for effective DoD Component implementation of applicable JTA standards in designing weapon systems. The Director needs to coordinate with the Office of the Joint Chiefs of Staff Director for Command, Control, Communications and Computers if he believes that language requiring program use of the JTA standards would not be necessary in the Mission Needs

Statement. CJCS Instruction 6212.01B requires that the Mission Needs Statement include a requirement for application of applicable standards from the JTA.

The comments from the Vice Director, Joint Staff, did not address the issue presented in the recommendation, which was establishing time frames for DoD Components to input draft and final versions of mission needs statements and operational requirements documents to the Defense Information Systems Agency to enable it to review the adequacy of the DoD Component's planned use of the DoD Joint Technical Architecture as required in Chairman, Joint Chiefs of Staff Instruction 6212.01B.

In response to the final report, we request that the Joint Chiefs of Staff Director for Command, Control, Communications and Computers and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) provide a coordinated response that provides an agreed course of action for establishing time frames for DoD Components to input draft and final versions of mission needs statements and operational requirements documents to the Defense Information Systems Agency to enable it to review the adequacy of the DoD Component's planned use of the DoD Joint Technical Architecture.

B.2. We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics establish a process for reviewing requests for proposals and contract statements of work to verify that requirements for use of the DoD Joint Technical Architecture standards established in the operational requirements document are translated into clear contractual requirements with the additional requirement for the contractor to identify instances where cost, schedule, or performance impacts may preclude use of Joint Technical Architecture mandated standards.

Under Secretary of Defense for Acquisition, Technology, and Logistics Comments. The Director, Interoperability, partially concurred, stating that we should revise the draft report recommendation to recommend that the Under Secretary establish a process to review requests for proposals and contract statements to determine whether they include requirements for use of the JTA, if specified in program operational requirements document, instead of recommending that the overarching integrated product teams perform the review. The Director explained that this revision would allow his office the flexibility to respond in a manner that would meet the intent of the recommendation without dictating the specific organizational approach. He further stated that assigning the review responsibility to an overarching integrated product team may not be the optimum solution or be consistent with DoD Acquisition Reform, which seeks to delegate responsibility to the lowest level.

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments. Although not required to comment, the Director, Architecture and Interoperability, concurred, stating that the Office of the Assistant Secretary would provide appropriate representatives at the Weapon Systems Overarching Integrated Product Teams to assist in the assessment of requests for proposals and contract statements of work to ensure that these

documents comply with the JTA. The representatives will verify that standards profiles, drawn primarily from the JTA, were incorporated into the technical view of the integrated system architecture, as appropriate, and translated into clear contractual requirements for system acquisition and procurements.

Joint Chiefs of Staff Director for Command, Control, Communications and Computers Comments. Although not required to comment, the Vice Director, Joint Staff, stated that procedures for reviewing requests for proposals and statements of work were well documented within DoD acquisition organizations. He stated that the placing another organization into the review process will further slow down the current acquisition review process.

Audit Response. The comments from the Director, Interoperability, were responsive. In response to the Director's comments, we revised the recommendation as suggested.

The comment from the Vice Director, Joint Staff, that procedures for reviewing requests for proposals and statements of work were well documented within DoD acquisition organizations is general in nature and did not address the need for establishing a process for reviewing requests for proposals and contract statements of work to verify that requirements for use of the JTA standards established in the operational requirements document were translated into clear contractual requirements. We addressed the Vice Director's concern about placing another organization into the acquisition review process through our revision of the recommendation to focus on the need for a review process rather than inserting another organization into the review process.

B.3. We recommend that the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence):

a. **Direct the Defense Information Systems Agency to update the Joint Interoperability and Engineering Organization and Joint Interoperability Test Command Circular 9002, "Requirements Assessment and Interoperability Certification of C4I and AIS Equipment and Systems," January 23, 1995, to address use of the DoD Joint Technical Architecture and for determining that mission needs statements and operational requirements documents satisfy DoD policy for usage of the Joint Technical Architecture in system development efforts.**

b. **Include in the planned "DoD Joint Technical Architecture User Guide" the suggested general template language to assist DoD Components and program managers in implementing DoD Joint Technical Architecture requirements in the mission needs statement and the operational requirements document.**

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments. The Director, Architecture and Interoperability, concurred, stating that the Deputy Chief Information Officer will direct the Defense Information Systems Agency to update the Joint Interoperability and Engineering Organization and Joint Interoperability Test Command Circular 9002 to incorporate the use of the JTA and mission area integrated

architectures and to include a process and procedures for verifying that requirements documents, including operational requirements documents and C⁴I Support Plans, comply with DoD policy for use of JTA standards in system development and acquisition efforts. The Director stated that the Deputy Chief Information Officer will direct the Defense Information Systems Agency to align the content of Circular 9002 with the most recent JTA-related policy in the DoD 5000 and 4630 series directives as well as in CJCSI 3170.01A and CJCSI 6212.01B. The Director further stated that the Deputy Chief Information Officer would request that the Defense Information Systems Agency complete the revision of Circular 9002 by December 31, 2001. With regard to the planned "DoD Joint Technical Architecture User Guide," the Director stated that the Deputy Chief Information Officer would direct the Defense Information Systems Agency to include a general template in the planned guide for incorporating JTA standards use in requirements documents, including operational requirements documents and C⁴I Support Plans, and to publish the User Guide by the end of 2001.

Under Secretary of Defense for Acquisition, Technology, and Logistics

Comments. Although not required to comment, the Director, Interoperability, suggested that it would be more appropriate to change "Joint Technical Architecture" to "Information Interoperability" in the title of the planned "DoD Joint Technical Architecture User Guide" since the JTA is only one method for achieving interoperability.

Joint Chiefs of Staff Director for Command, Control, Communications and Computers Comments.

Although not required to comment, the Vice Director, Joint Staff, stated that Circular 9002 is an internal document of the Defense Information Systems Agency, and that CJCS Instruction 6212.01 mandates that the Joint Interoperability Test Command test standards based products for compliance with relevant JTA standards and for interoperability with relevant National Security Systems and Information Technology Systems. The Vice Director also stated that the Under Secretary of Defense for Acquisition, Technology, and Logistics, rather than the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), should prepare the planned "DoD Joint Technical Architecture User Guide" because the guide is needed for program managers.

Audit Response. The comments from the Director, Architecture and Interoperability, were responsive. His suggestion to change "Joint Technical Architecture" to "Information Interoperability" in the title of the planned "DoD Joint Technical Architecture User Guide" would not be more appropriate since the document specifically pertains to program manager use of JTA standards. Comments of the Vice Director, Joint Staff, that the Circular 9002 did not need updating because it is an internal document to the Defense Information Systems Agency and that necessary JTA-related policy already exists in CJCS Instruction 6212.01 are not correct. The internal policies of the Defense Information System Command must be consistent with, and supplement, higher level external policy as required. Therefore, Circular 9002 language should be current regarding policy relating to the JTA. With regard to preparing the users' guide, the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), through the Defense Information

Systems Agency, has already began preparation of the guide. The users' guide will have guidance, such as recommended text for specifying program use of JTA standards in requests for proposals and contract statements of work, which CJCS Instruction 6212.01 does not provide. The Office of the Assistant Secretary and the Defense Information Systems Agency are the appropriate offices for preparing the guide because of their policy and technical review responsibilities on the use of the JTA.

C. Requesting Waivers to Using Standards in the Joint Technical Architecture

Program managers were not submitting waiver requests to DoD Component and Office of the Secretary of Defense authorities when using interface standards other than those mandated by the JTA for weapon systems design. Thirteen of the 15 program managers for major Defense acquisition programs in the program definition and risk reduction or the engineering and manufacturing development phases responding to our survey did not submit waiver requests as required when using or planning to use alternate standards. Nonsubmission of waiver requests resulted from program managers not complying with established policy for submitting waiver requests when deviating from using JTA standards and milestone decision authorities not enforcing JTA standards requirements as discussed in finding B. Also, the Policy Offices did not provide detailed guidelines to program managers on how to determine and document instances where cost, schedule, and performance considerations justified submitting a waiver request for specific JTA standards in the system design process. As a result, milestone decision authorities will not become aware of potential system interoperability shortfalls until programs are seeking interoperability certification before requesting approval for full-rate production. At this late stage in the program development process, milestone decision authorities have few options because of the cost and schedule impacts that will occur from implementing JTA standards requirements in the design at that point in the acquisition process.

Joint Technical Architecture Waiver Policy

In the August 22, 1996, memorandum that implemented Version 1.0 of the JTA, DoD Components and Agency Acquisition Executives were given authority to grant waivers to program manager compliance with the JTA, with the concurrence of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). In implementing JTA Version 2.0 in November 1998, the Under Secretary, the Assistant Secretary, and the Joint Chiefs of Staff Director for Command, Control, Communications, and Computers provided further guidance on waiver requirements to better assure that program manager waiver requests were properly and timely considered and to preclude granting duplicative waivers. Specifically, the November 1998 guidance required:

- waiver requests to include the cost, schedule, and performance impacts that will occur if waiver of JTA requirements is not granted and acknowledge any resulting operational limitations.

-
- the DoD Components responsible for systemic implementation of specific groups of JTA standards, such as missile defense standards, to review requests for waiver from use of these standards and forward those waivers they approve to the Under Secretary and the Assistant Secretary for concurrence.
 - DoD Components and Agency Acquisition Executives retain approval authority for waivers to those standards not assigned to a specific DoD Component for systemic implementation and forward those waivers they approve to the Under Secretary and the Assistant Secretary for concurrence.

The requirement that the DoD Components and Agency Acquisition Executives had the authority to grant waivers to the standards in the JTA, with the concurrence of the Under Secretary and the Assistant Secretary, was included in Change 3 to DoD Regulation 5000.2-R, March 23, 1998.

The Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) were revising the waiver process in a revision to DoD Regulation 5000.2-R. The January 4, 2001, revision to the Regulation requires that, if program use of a JTA-mandated standard will negatively impact cost, schedule, or performance, a Component Acquisition Executive or cognizant Office of the Secretary of Defense Principal Staff Assistant may grant a waiver. For mission-critical or mission-essential programs, DoD Components shall submit granted waivers through the Assistant Secretary to the Under Secretary for review and concurrence. To assure proper and timely Under Secretary and Assistant Secretary consideration, all waiver requests shall state the cost, schedule, and performance impacts that will occur if the waiver request is not granted and any resulting operational limitations.

Submission of Waiver Requests

In response to our program manager survey question concerning whether program managers submitted waiver requests when using or planning to use standards other than standards mandated by the JTA, we received responses from 15 of the 43 program managers whose major Defense acquisition programs were in the program definition and risk reduction or the engineering and manufacturing development acquisition phases, as of June 30, 2000. Twenty-eight program managers did not respond to the question. Of the 15 program managers responding:

- thirteen used or were planning to use an alternate standard or standards but did not submit a waiver request,
- two submitted waiver requests to Component Acquisition Executives and received approval to use alternate standards.

Following Waiver Policy

The nonsubmission of waiver requests resulted from program managers not complying with the requirement in DoD Regulation 5000.2-R to request a waiver when deviating from using JTA standards, as discussed in finding B, and the milestone decision authorities not enforcing JTA standards requirements. Also, the Policy Offices did not provide guidance to program managers on how to determine and document instances where cost, schedule, and performance considerations justified submitting a waiver request to specific JTA standards in the system design process.

Applying the JTA in Weapon System Development. As noted in finding B, 24 of 42 acquisition program managers responding to our survey did not include language establishing use of JTA standards as a requirement in requests for proposals, and 26 of the 42 program managers did not include JTA language in contract statements of work. Before excluding the requirement for using JTA standards from those documents, the program managers should have submitted a waiver request to their Component Acquisition Executive justifying not applying the requirement. All of the program managers should have mandated use of the JTA standards unless they or their contractor justified instances where cost, schedule, or performance impacted the use of JTA mandated standards.

Basis for Submitting a Waiver Request. In responding to our survey questionnaire, two program managers recommended that program managers be provided additional guidance on justifying the need for a waiver to JTA standards requirements. Specifically, these program managers stated that the Policy Offices needed to provide more detailed guidance on how to determine and document where cost, schedule, and performance consideration justified submitting a waiver request to specific JTA standards in the system design.

The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) could use the planned “DoD Joint Technical Architecture User Guide” and the Virtual JTA to provide more detailed guidance to program managers on justifying the need to waive the use of specific JTA standards in the system design process.

Summary

JTA waiver policy was established to provide acquisition decisionmakers with timely notification of instances where cost, schedule, or performance impacts may preclude program manager use of specific JTA standards. When program managers do not submit waiver requests as required, milestone decision authorities will not become aware of potential system interoperability shortfalls until later in program development, perhaps as late as when program managers seek interoperability certification from the Defense Information Systems Agency before requesting approval to enter full-rate production. At this late stage in the system development process, acquisition decisionmakers have few options because of the cost and schedule impacts that will occur from implementing JTA

standards requirements in the design at that point of the acquisition process. Implementation of recommendations in finding B should result in program managers submitting waiver requests to JTA standards requirements as required.

Management Comments on the Finding and Audit Responses

Summaries of management comments on the finding and our responses are in Appendix G.

Recommendations Management Comments, and Audit Response

C. We recommend that the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), in coordination with the Under Secretary of Defense for Acquisition, Technology, and Logistics, verify that the Defense Information Systems Agency includes in the planned “DoD Joint Technical Architecture User Guide” and Virtual Joint Technical Architecture guidance on how to determine and document instances when cost, schedule, and performance considerations justified submitting a waiver request for specific Joint Technical Architecture standards applicable to system interoperability requirements.

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments. The Director, Architecture and Interoperability, responding for the Assistant Secretary, concurred, stating that the Office of the Deputy Chief Information Officer will work with the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the DoD Components to develop guidance for assessing cost, schedule, and performance impacts that may justify waivers to JTA standards. The Director stated that his office would include the waiver guidance in the DoD JTA Users Guide and in the Virtual JTA for Component Acquisition Executives, program executive officers, and program managers’ use in determining instances where a JTA waiver request is warranted. The Director further stated that his office has included language in the draft DoD Instruction 4630.8 that requires DoD Component Acquisition Executives to establish procedures for review and approval of waiver requests. In addition to responding to the recommendation, the Director suggested that, in the final report, we include a recommendation to the Heads of the DoD Components to establish administrative processes and procedures for submission, review, consideration, and approval of JTA waiver requests. He stated that the DoD Components should include these administrative processes and procedures in their JTA implementation plans.

Under Secretary of Defense for Acquisition, Technology, and Logistics

Comments. The Director, Interoperability, partially concurred, but suggested that it would be more appropriate to change “Joint Technical Architecture” to “Information Interoperability” in the title of the planned “DoD Joint Technical Architecture User Guide” because the JTA is only one method for achieving interoperability.

Joint Chiefs of Staff Director for Command, Control, Communications and Computers Comments. Although not required to comment, the Vice Director, Joint Staff, stated that DoD Regulation 5000.2-R already addresses waiver guidance.

Audit Response. The comments from the Director, Architecture and Interoperability, and the Director, Interoperability, were responsive. We did not include the additional recommendation to the Heads of DoD Components that the Director proposed regarding establishing administrative processes and procedures for submission, review, consideration, and approval of JTA waiver requests. While we believe the recommendation may have merit, we did not do audit fieldwork to assess the actual processes and procedures that DoD Components were using for waiver requests; therefore, we do not have a basis for making the suggested recommendation. The Director could emphasize waiver procedures as part of his guidance and feedback on DoD Component JTA implementation plans, as discussed in the management responses and audit comments in finding A to Recommendations A.2 and A.3.

The suggestion of the Director, Interoperability, for changing the title of the planned “DoD Joint Technical Architecture User Guide” would not be appropriate because the document specifically pertains to program manager use of the JTA. The assertion of the Vice Director, Joint Staff, that DoD Regulation 5000.2-R provides waiver guidance is correct, but the regulation does not provide guidance on how to determine and document instances when cost, schedule, and performance considerations justify submitting a waiver request for specific JTA standards applicable to system interoperability requirements.

Appendix A. Audit Process

Scope

We conducted the audit from February 2000 through January 2001 and reviewed documentation dated from August 1992 through January 2001 at the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); the Joint Chiefs of Staff Director for Command, Control, Communications and Computers; and the DoD Component Headquarters. Additionally, we received information in response to survey questionnaires from 2 of 4 Component Acquisition Executives, 15 of 19 Program Executive Officers, and 81 of 86 program managers.

DoD-wide Corporate Level Government Performance and Results Act Coverage. In response to the Government Performance and Results Act, the Secretary of Defense annually establishes DoD-wide corporate level goals, subordinate performance goals, and performance measures. This report pertains to achievement of the following goal and subordinate performance goal.

- **FY 2000 DoD Corporate Level Goal 2:** Prepare now for an uncertain future by pursuing a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. Transform the force by exploiting the Revolution in Military Affairs, and reengineer the Department to achieve a 21st century infrastructure. **(00-DoD-2)**
- **FY2000 Subordinate Performance Goal 2.4:** Meet combat forces' needs smarter and faster, with products and services that work better and cost less, by improving the efficiency of DoD acquisition processes. **(00-DoD-2.4)**

General Accounting Office High-Risk Area. The General Accounting Office has identified several high-risk areas in the Department of Defense. This report provides coverage of the DoD weapons system acquisition high-risk area.

Methodology

To evaluate DoD progress in implementing the standards contained in the JTA in support of achieving systems interoperability, we examined regulations and guidance on planning and reporting documentation relating to the JTA. Additionally, we analyzed the responses provided from 2 of 4 Component Acquisition Executives, 15 of 19 Program Executive Officers, and 81 of 86 program managers to our survey questionnaire on their experience using JTA standards. We also interviewed Army, Navy, and Air Force personnel who were responsible for implementing the JTA standards within their organizations.

We received technical assistance in evaluating progress in implementing the JTA from electrical engineers in the Technical Assessment Division, Office of the Assistant Inspector General for Audit, DoD.

Auditing Standards. We conducted this program audit in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included such tests of management controls as we deemed necessary.

Use of Computer-Processed Data. We did not rely on computer-processed data to perform this audit.

Contacts During the Audit. We visited or contacted individuals and organizations within the DoD. Further details are available on request.

Management Control Program Review

DoD Directive 5010.38, "Management Control (MC) Program," August 26, 1996, and DoD Instruction 5010.40, "Management Control (MC) Program Procedures," August 28, 1996, require DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of the Review of Management Control Program. In accordance with DoD Directive 5000.1, "Defense Acquisition," March 15, 1996, and DoD Regulation 5000.2-R, acquisition managers are to use program cost, schedule, and performance parameters as control objectives to implement the requirements of DoD Directive 5010.38. Accordingly, we limited our review to management controls directly related to Policy Offices' and program manager implementation of JTA standards in developing and acquiring weapon systems.

Adequacy of Management Controls. We identified material management control weaknesses in the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers, as defined by DoD Instruction 5010.40, "Management Control (MC) Program Procedures," August 28, 1996. The above Policy Offices did not implement effective controls to ensure that the DoD Components prepared and formulated complete plans for implementing the JTA (finding A), that program managers considered and used JTA standards in designing weapon systems (finding B) and applied for waivers from JTA standards when justified based on system cost, schedule, or performance considerations (finding C). Recommendations in findings A, B, and C, if implemented, will correct the material management control weaknesses. A copy of the report will be provided to the senior officials responsible for management controls in the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of

Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers.

Adequacy of Management's Self Evaluation. The Policy Offices conducted management control reviews that examined the adequacy of management controls to manage and oversee the use and expenditure of fiscal, personnel, and physical resources assigned to their organizations. The material management control weaknesses we identified crossed organizational lines because the JTA is managed through the coordinated efforts of the Policy Offices and the management councils, discussed in Appendix D. Thus, management of the JTA was outside the scope of the self-evaluations of the individual Policy Offices.

Prior Coverage

During the last 5 years, the Inspector General, DoD, issued one report relating to program manager and DoD Component use of the JTA in the acquisition process.

Inspector General, DoD, Report No. 98-023, "Implementation of the DoD Joint Technical Architecture," November 18, 1997

Appendix B. Definitions of Terms Relating to the Joint Technical Architecture

The following definitions are germane to a general understanding of implementing the Joint Technical Architecture.

Architecture. The architecture is the framework or structure that portrays relationships among all the elements of the subject force, system, or activity.

Automated Information System. An acquisition program that acquires information technology except information technology that involves equipment that is an integral part of a weapon or weapons system, or is a tactical communications system.

Closed Interfaces. Closed interfaces are privately controlled system and subsystem boundary descriptions for interfaces that are not disclosed to the public or that are unique to a single supplier.

Commercial Item. A commercial item is any item other than real property that is of a type customarily used for nongovernmental purposes and that has been sold to the general public or offered for sale to the general public.

Information Technology Systems. 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. Information technology includes computers, ancillary equipment, software, firmware, and similar procedures, services, and related resources.

Interface Standard. An interface standard specifies the physical or functional interface characteristics of systems, subsystems, equipment, assemblies, components, items or parts to permit interchangeability, interconnection, interoperability, compatibility, or communications.

Interoperability. Interoperability is the ability of systems, units, or forces to provide services to and accept services from other systems, units, or forces and to use the services so exchanged to enable them to operate effectively together.

Joint Technical Architecture. The Joint Technical Architecture defines the DoD minimum set of rules governing the arrangement, interaction, and interdependence of the parts or elements, whose purpose is to ensure that systems conform to a specific set of requirements. It identifies system services, interfaces, standards, and the relationships.

Legacy Systems. Systems currently performing a mission-related function. These systems may be candidates for phase-out, upgrade, or replacement.

Level of Openness. The level of openness is the system, subsystem, or component level at which the interfaces conform to open standards. The contractor or supplier may control design, interfaces, repair, and implementation below the level of openness. The level of openness will affect the overall performance, life-cycle costs, long-term supportability, acquisition cycle time, interoperability, intraoperability, ease of technology insertion, and the extent of organic repair of a system.

Milestone Decision Authority. The milestone decision authority is the individual that the Under Secretary of Defense for Acquisition, Technology, and Logistics [or the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) for automated information programs] has designated to approve entry of an acquisition program into the next phase of the acquisition process.

National Security Systems. Telecommunications and information systems that the DoD operates, the functions, operation, or use of which involves intelligence activities, command and control of military forces, equipment that is an integral part of a weapon system, cryptologic activities related to national security, and is critical to the direct fulfillment of military or intelligence missions.

Open Specifications. Open specifications are public specifications maintained by an open, public consensus process to accommodate new technologies over time and consistent with international standards.

Open Standards. Open standards are widely accepted and supported standards set by recognized standards organizations or the commercial marketplace. Open standards support interoperability, portability, and scalability and are equally available to the general public at no cost or with a moderate license fee.

Open System. An open system is a system that implements sufficient open standards for interfaces, services, and supporting formats to enable properly engineered components to be used across a wide range of systems with minimal changes, to interoperate with other components on local and remote systems, and to interact with users in a style that facilitates portability. An open system is characterized by the following:

- well defined, widely used, preferably nonproprietary interfaces and protocols;
- uses of standards which are developed and adopted by recognized standards bodies or the commercial marketplace;
- defines all aspects of system interfaces to facilitate new or additional systems capabilities for a wide range of applications; and
- explicitly provides for expanding or upgrading through the incorporation of additional or higher performance elements with minimal impact on the system.

Open Systems Approach. An open systems approach is an integrated business and technical strategy to choose commercially supported specifications and standards for selected system interfaces (external, internal, functional, and physical), products, practices, and tools, and to build systems based on modular hardware and software design. Program selection of commercial specifications and standards is based on:

- standards that industry standards bodies have adapted or industry de facto standards (those successful in the marketplace);
- market research that evaluates the short- and long-term availability of products;
- a disciplined systems engineering process that examines tradeoffs of performance;
- supportability and upgrade potential within a defined cost constraint; and
- allowance for continued access to technological innovation supported by many customers and a broad industrial base.

Open Systems Architecture. An open systems architecture is a system architecture produced by an open systems approach and that uses open systems specifications and standards to an appropriate level.

Open Systems Strategy. An open systems strategy focuses on fielding a superior warfighting capability more quickly and more affordably by using multiple suppliers and commercially supported practices, products, specifications, and standards, which are selected based on performance, cost, industry acceptance, long-term availability and supportability, and upgrade potential.

Operational Architecture View. An operational architecture view is a description of the tasks and activities, operational elements, and information flows required to accomplish or support a military operation.

Program Manager. The program manager is the individual that the Component Acquisition Executive designates to manage an acquisition program and who is appropriately certified under the provisions of the Defense Acquisition Workforce Improvement Act. A program manager has no other command or staff responsibilities within the DoD Component.

Proprietary Specifications. Proprietary specifications are exclusively owned by a private individual or corporation under a trademark or patent, the use of which would require a license.

Specification. A specification is a document that prescribes, in a complete, precise and verifiable manner, the requirements, design, behavior, or characteristics of a system or system component.

Standard. A standard is a document that establishes uniform engineering and technical requirements for processes, procedures, practices, and methods. Standards may also establish requirements for selection, application, and design criteria of material.

System Architecture. A system architecture is a description, including graphics, of systems and interconnections providing for or supporting warfighting functions. The system architecture defines the physical connection, location, and identification of the key nodes, circuits, networks, and warfighting platforms and specifies system and component performance parameters. It is constructed to satisfy operational architecture requirements per standards defined in the Joint Technical Architecture. The system architecture shows how multiple systems within a subject area link and interoperate, and may describe the internal construction or operations of particular systems within the architecture.

Systems Architecture View. A system architecture view is a description, including graphics, of systems and interconnections providing for, or supporting, warfighter functions.

Technical Architecture View. A technical architecture view is the minimal set of rules governing the arrangement, interaction and interdependencies of system parts or elements, whose purpose is to ensure that a conformant system satisfies a specified set of requirements.

Weapon System. A weapon system is an item or set of items that can be used directly by the warfighter to carry out combat or combat support missions to include tactical communication systems.

Appendix C. Relationship of the Joint Technical Architecture to Other DoD Programs and Initiatives.

The JTA is complementary to other DoD programs and initiatives aimed at the development and acquisition of effective and interoperable information systems. These programs and initiatives include DoD Component technical architectures; the Defense Information Infrastructure Common Operating Environment (DII COE); the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance Architecture Framework (the Architecture Framework); the DoD Technical Reference Model; and the Requirements Generation System and the Interoperability and Supportability of National Security Systems and Information Technology Systems, administered through the Joint Chiefs of Staff. The roles and contributions of these programs and initiatives and their relationship to the JTA follow.

Component Technical Architectures

The Army and the Air Force have developed their own technical architectures. The Army established its technical architecture as part of its Army Enterprise Architecture, which also includes operational and systems architectures. In August 1996, the Policy Offices used portions of the Army Technical Architecture to establish Version 1.0 of the JTA. The Army and the Air Force use the JTA as the basis of their technical architectures but have included standards that are in addition to, but not in conflict with, the JTA. The Army and the Air Force specify the additional standards to cover standards that do not fall under the jurisdiction of the JTA domains.

Defense Information Infrastructure Common Operation Environment

The DII COE is a conceptual architecture that DoD acquisition program managers and system architects use as the foundation for DoD information systems. The DII COE provides an approach for building interoperable systems and a reference implementation library containing a collection of reusable software components; a set of application program interfaces; a series of specifications and standards for developing interoperable systems; a software infrastructure for supporting mission area applications; and a set of guidelines, standards, and specifications. JTA standards provide the compliance baseline for the Common Support Applications layer of the Common Operating Environment and the Infrastructure Services portion of the DII COE. The Policy Offices are working on the relationship of the JTA to the existing and future DII COE segments, including legacy segments. Some legacy segments of DII COE are not JTA compliant. The Defense Information Systems Agency

plans to request waivers, as required, for the noncompliant segments. Sponsors and technical working groups must ensure JTA compliance before submitting segments for inclusion in the Common Operating Environment. Accordingly, users implementing the Common Operating Environment do not need to submit JTA waiver requests. The Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) has responsibility for oversight and management of the DII COE.

Architecture Framework

The Architecture Framework is a specification that describes notionally what is required for information interchange. It provides the rules, guidance, and product descriptions for developing and presenting architectures that ensure a common denominator for understanding, comparing, and integrating architectures. The Architecture Framework is intended to:

- ensure that the architectural descriptions that are developed by the Military Departments and Agencies interrelate to each organization's operational, systems, and technical architecture views;
- compare and integrate across joint and combined organizational boundaries;
- provide direction on how to describe architectures; and
- provide a process for using the Architecture Framework to build and integrate architectures using a six-step architectural description process.

Within the Architecture Framework, the Technical Architecture Profile documents program manager use or planned use of technical standards, including use of the JTA. The Architecture Framework briefly describes the JTA as identifying "a common set of mandatory information technology standards and guidelines to be used in all new and upgraded Command, Control, Communications, Computers and Intelligence (C4I) acquisitions across DoD." Thus, the Architecture Framework acts as a source document reinforcing program manager use of the JTA. The Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) has responsibility for oversight and management of the Architecture Framework.

DoD Technical Reference Model

The DoD Technical Reference Model provides a common conceptual framework and defines a common vocabulary so that the diverse components within DoD can better coordinate acquisition, development, interoperability, and support of DoD information systems. The Model provides guidance to developers, systems architects, and individuals in using and developing systems and technical architectures. It also promotes open systems design but is not a system

architecture. Program manager use of the Technical Reference Model can facilitate and enable interoperability, enable portability and scalability, support open systems concepts, promote product independence and software reuse, and facilitate manageability.

Further, the DoD Technical Reference Model provides the foundation and the common service and interface definitions used in the JTA. Together the DoD Technical Reference Model and the core set of standards mandated in the JTA define the target technical environment for the acquisition, development, and support of DoD information technology. The Model also provides the foundation for other DoD initiatives such as the DII COE and the Architecture Framework. The DoD Technical Reference Model, as an enhanced model, supports both Automated Information Systems and Weapons Systems applications. It is well suited to support the diverse service and interface definitions, as well as support the various functional reference models encountered throughout the JTA and its domains. It is also used to address and assist in the resolution of interoperability issues. The Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) has responsibility for oversight and management of the DoD Technical Reference Model.

Requirements Generation System

The Office of the Chairman, Joint Chiefs of Staff, oversees the requirements generation system as defined in CJCS Instruction 3170.01A, "Requirements Generation System," August 10, 1999. The Instruction provides policies and procedures for developing, reviewing, validating, and approving mission needs statements and operational requirements documents. As part of the policy and procedure, the Instruction requires that systems must comply with applicable information technology standards contained in the JTA.

Interoperability and Supportability of National Security Systems and Information Technology Systems

The Office of the Chairman, Joint Chief of Staff, oversees system interoperability and supportability initiatives as stated in CJCS Instruction 6212.01B, "Interoperability and Supportability of National Security Systems and Information Technology Systems," May 8, 2000. The Instruction establishes policies and procedures for:

- Joint Chiefs of Staff interoperability certification of mission needs statements and operational requirements documents,
- developing interoperability key performance parameters for systems, and
- performing system interoperability validations.

As part of the procedures for performing interoperability certification of mission needs statements and operational requirements documents, the Instruction contains checklist criteria that the Defense Information Systems Agency uses to assess the documents for interoperability certification in support of the Office of the Joint Chiefs of Staff. The checklist includes the requirement that the two documents require that systems developed comply with the applicable information technology standards contained in the current JTA.

Draft updates to DoD Instruction 4630.5, "Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence Systems," November 12, 1992, and DoD Instruction 4630.8, "Procedures for Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems," November 18, 1992, describe policy and responsibilities and prescribe procedures for a reengineered approach to Information Technology and National Security Systems interoperability. The procedures consider both materiel (acquisition or procurement) and non-materiel (doctrine, organizational, training, leadership, and personnel) aspects to ensure interoperability and supportability of Information Technology and National Security Systems throughout DoD. These draft directives, if implemented, would require use of mission area integrated architectures to characterize Information Technology and National Security Systems interoperability; precise definition of user requirements to include interoperability as a Key Performance Parameter; documentation of a system's dependencies, interface requirements and support needs in a Command, Control, Communications, Computers, Intelligence, Support Plan; early and frequent testing to verify interoperability; and involvement of the operational community to identify, prioritize and synchronize both materiel and non-materiel remedies to resolve fielded Information Technology and National Security Systems interoperability issues.

Appendix D. Responsibilities for Managing the Joint Technical Architecture

The Policy Offices jointly manage the JTA, working together to provide a management structure and process to evolve and maintain the JTA and respond to the needs of the JTA user community. The Policy Offices exercise management oversight and configuration management of the JTA through a hierarchy of management councils and groups made up of representatives from their respective offices and from the DoD Components. These councils and groups include the Architecture Coordination Council, the Technical Architecture Steering Group, the Joint Technical Architecture Development Group, the Defense Information Systems Agency, other DoD Agencies, and the Military Departments. Also, one of the Policy Offices [the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)], has additional information technology responsibilities as the Chief Information Officer for DoD. The responsibilities of the management councils, groups, and offices are defined in the “DoD Joint Technical Architecture Management Plan,” January 24, 2001, as detailed below.

Architecture Coordination Council

The Architecture Coordination Council (the Council) provides top level oversight of the JTA. The senior officials of the Policy Offices co-chair the Council, and membership comprises the senior acquisition officials from the Military Departments, the Defense Information Systems Agency, and other DoD Agencies. The Council determines and approves changes in the scope and applicability of the JTA and provides oversight, high-level guidance, and direction in the development of DoD technical, systems, and operational architectures. The Council also resolves substantive issues raised from the Technical Architecture Steering Group and the Joint Technical Architecture Development Group discussed below. The chairpersons of the Council have signatory authority for revisions to the JTA.

Technical Architecture Steering Group

The Technical Architecture Steering Group (the Steering Group) provides specific JTA guidance and direction. Representatives from the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) co-chair the Steering Group. The Steering Group is composed of voting representatives from 19 organizations including the Military Departments, the Defense Information Systems Agency, and other DoD Agencies and Components. The Steering Group determines and recommends to the Council changes in scope and applicability of the JTA. Also, the Steering Group appoints representatives and provides broad guidance and direction to the Joint Technical Architecture Development Group. Additionally, the Steering

Group resolves substantive issues raised from the Joint Technical Architecture Development Group and votes to approve elevation of JTA revisions to the Council for approval and signature.

Joint Technical Architecture Development Group

The Joint Technical Architecture Development Group (the Development Group) manages the working-level development of the JTA. The Defense Information Systems Agency Center for Information Technology Standards chairs the Development Group. The Development Group performs configuration management of the JTA and has permanent representatives from the same 19 organizations that make up the Steering Group, as well as other members that the chair of the Development Group may add to address specific issues. The members of the Development Group must be prepared to represent the acquisition and development interests of their organization. The Development Group is authorized to approve and publish minor changes to the JTA between major version releases. The “DoD Joint Technical Management Plan” defines minor changes as:

- elevating emerging standards to mandated standards when the standards have met JTA selection criteria,
- updating existing standards to reflect the latest release, and
- retiring a standard that is no longer essential to interoperability.

The Development Group raises unresolved issues to the Steering Group for review and resolution. The Development Group also manages the standards review process, refers change requests to appropriate subgroups, and resolves change requests raised from the subgroup level.

Defense Information Systems Agency, Military Departments, and Other DoD Agencies

Defense Information Systems Agency. The Defense Information Systems Agency provides resources to chair and to provide administrative support to the Development Group; executes the configuration management process for the JTA; maintains the database of all recommended, proposed, agreed, and implemented changes to the JTA; and electronically distributes new versions of the JTA within the agreed configuration management process. Additionally, the Defense Information Systems Agency serves as the focal point for industry comments, identifies standards candidates for elevation to the JTA core, identifies JTA subgroup leaders and maintains the JTA website.

Military Departments and Other DoD Agencies. The Military Departments and other DoD Agencies, such as the National Security Agency, provide JTA implementation feedback to the Steering Group and the Development Group, and provide representatives with the proper technical, functional, and acquisition expertise to the groups to present their organization’s interoperability and JTA

implementation issues and concerns. Also, the Military Departments and DoD agencies each designate a voting representative to appropriate groups; identify standards candidates for elevation to the JTA; and generate change requests to maintain the accuracy and integrity of JTA mandated standards, emerging standards, and associated text.

DoD Chief Information Officer

The Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) functions as the Chief Information Officer for DoD. Section 5125, “Agency Chief Information Officer,” Public Law 104-106, February 10, 1996, defines the responsibilities of the Chief Information Officers for executive agencies. Responsibilities include:

- providing advice and other assistance to the head of the executive agency to ensure that the agency acquires information technology and manages information resources in a manner consistent with public law and the priorities that the executive agency head establishes,
- developing, maintaining, and facilitating agency implementation of sound and integrated information technology architecture, and
- promoting effective and efficient design and operation of all major information resources management processes for the executive agency.

In addition to the above responsibilities, section 2223, title 10, United States Code, “Information Technology: Additional Responsibilities of Chief Information Officers,” January 5, 1999, amended the responsibilities of the DoD Chief Information Officers to include the following:

- review and provide recommendations to the Secretary of Defense on DoD budget requests for information technology and national security systems;
- ensure the interoperability of Information Technology and National Security Systems throughout the DoD;
- ensure that Information Technology and National Security Systems standards that will apply throughout the DoD are prescribed; and
- provide for the elimination of duplicate Information Technology and National Security Systems within and between the Military Departments and Defense Agencies.

The DoD Chief Information Officer also has responsibilities for pre- and post-acquisition interoperability of Information Technology and National Security Systems that overlap the responsibilities of the Under Secretary of Defense for Acquisition, Technology, and Logistics for the acquisition of Information Technology and National Security Systems.

Appendix E. DoD Component Joint Technical Architecture Implementation Plans

Updated Component Implementation Plans							Number of Implementation Plans Omitting JTA Topics
Component JTA Implementation Plan Addresses the Following Topics	<u>Army</u>	<u>Navy</u>	<u>Air Force</u>	<u>BMDO²</u>	<u>DISA³</u>	<u>DIA⁴</u>	
Management and oversight ¹ structure, processes, and responsibilities	Yes	Yes	Yes	Yes	Yes	Yes	0 of 7
Configuration management ¹ and control	Yes	Yes	Yes	Yes	Yes	No	1 of 7
Implementation procedures ¹ and organizations overseeing these	Yes	Yes	Yes	Yes	Yes	Yes	0 of 7
Approach for using JTA ¹ in specific functional domains, organizational elements, or systems	Yes	Yes	Yes	Yes	Yes	Yes	0 of 7
Criteria for moving systems ¹ to JTA compliance	Yes	Yes	Yes	Yes	Yes	Yes	0 of 7
Customer support ¹	Yes	No	Yes	Yes	Yes	No	2 of 7
Training and education ¹ initiatives	Yes	No	Yes	Yes	Yes	No	2 of 7
Plans to integrate with other ¹ ongoing Component initiatives	Yes	Yes	Yes	No	Yes	Yes	1 of 7

Updated Component Implementation Plans

Component JTA Implementation Plan Addresses the Following Topics	Army	Navy	Air Force	BMDO ²	DISA ³	DIA ⁴	DLA ⁵	Number of Implementation Plans Omitting JTA Topics
Strategy for assessing ¹ progress toward implementation and interoperability	Yes	Yes	Yes	Yes	Yes	Yes	Yes	0 of 7
Priority for JTA ⁶ implementation	Yes	Yes	Yes	No	Yes	No	No	3 of 7
Funding for JTA ⁶ implementation	Yes	Yes	Yes	No	Yes	No	Yes	2 of 7
Timeframe for JTA ⁶ implementation	Yes	No	No	No	Yes	Yes	No	4 of 7
Total Topics Omitted	0	3	1	4	0	2	5	

Footnotes and acronyms are explained at the end of this appendix.

Updated Component Implementation Plans

Component JTA Implementation Plan Addresses the <u>Following Topics</u>					Number of Implementation Plans Omitting JTA Topics	Total
	<u>NIMA</u> ⁷	<u>NSA</u> ⁸	<u>SOCOM</u> ⁹	<u>DTTRA</u> ¹⁰		
Management and oversight ¹ structure, processes, and responsibilities	Yes	Yes	Yes	Yes	0 of 4	0 of 11
Configuration management ¹ and control	Yes	Yes	Yes	No	1 of 4	2 of 11
Implementation procedures ¹ and organizations overseeing these	Yes	Yes	Yes	Yes	0 of 4	0 of 11
Approach for using JTA ¹ in specific functional domains, organizational elements, or systems	Yes	Yes	Yes	No	0 of 4	1 of 11
Criteria for moving systems ¹ to JTA compliance	Yes	Yes	Yes	No	1 of 4	1 of 11
Customer support ¹	Yes	Yes	Yes	No	1 of 4	3 of 11
Training and education ¹ initiatives	Yes	No	Yes	No	2 of 4	4 of 11
Plans to integrate with other ¹ ongoing Component initiatives	Yes	Yes	Yes	No	1 of 4	2 of 11

Footnotes and acronyms are explained at the end of this appendix.

Updated Component Implementation Plans

Component JTA Implementation Plan Addresses the Following Topics	NIMA ⁷ NSA ⁸			SOCOM ¹¹ DTRA ¹²		Number of Implementation Plans Omitting JTA Topics	Total
	Yes	Yes	Yes	Yes	No		
Strategy for assessing ¹ progress toward implementation and interoperability	Yes	Yes	Yes	Yes	No	1 of 4	1 of 11
Priority for JTA ⁶ implementation	Yes	Yes	Yes	Yes	No	1 of 4	4 of 11
Funding for JTA ⁶ implementation	Yes	Yes	Yes	Yes	No	1 of 4	3 of 11
Timeframe for JTA ⁶ implementation	Yes	Yes	Yes	Yes	No	1 of 4	5 of 11
Total Topics Omitted	0	1	0	0	10		

¹The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), in the memorandum, "Clarification on the Content of DoD Components' Joint Technical Architecture Implementation Plan," October 4, 1996, directed DoD Components to address these topics in their JTA Implementation Plans for JTA Version 1.0.

²Ballistic Missile Defense Organization.

³Defense Information Systems Agency.

⁴Defense Intelligence Agency.

⁵Defense Logistics Agency.

⁶Inspector General, DoD, Report No. 98-023, "Implementation of the DoD Joint Technical Architecture," November 18, 1997, reported that DoD Component plans should also include these topics in implementation plans for JTA Version 1.0.

⁷National Imagery and Mapping Agency.

⁸National Security Agency.

⁹Special Operations Command.

¹⁰Defense Threat Reduction Agency.

¹¹SOCOM did not submit a JTA implementation plan for JTA Version 1.0, but did submit an implementation plan for JTA Version 2.0.

¹²The Defense Threat Reduction Agency indicated that on December 29, 1999, the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) authorized the Defense Threat Reduction Agency to do a preliminary plan as a result of the Agency's absorbing the Defense Special Weapons Agency and the Onsite Inspection Agency on October 1, 1998.

Components Not Updating JTA Version 1.0 Implementation Plans

Defense Investigative Service (now Defense Security Service)

Defense Security Assistance Agency (now Defense Security Cooperation Agency)

Commander In Chief, U.S. Pacific Command

Advanced Projects Research Agency (now Defense Advanced Research Projects Agency)

Defense Commissary Agency

Defense Finance and Accounting Service

Appendix F. Key Acquisition Planning Documents

Acquisition planning documents serve as a roadmap to program managers and contractors for program execution from initiation through postproduction support. Therefore, the Joint Chiefs of Staff and supporting organizations involved in the weapons systems requirements generation process and the DoD acquisition community must include JTA standards requirements in key acquisition planning documents to maximize JTA effectiveness as a tool for achieving overall DoD system interoperability. The key acquisition planning documents are the mission needs statement, the operational requirements document, the request for proposal, and the contract statement of work. The following discusses the general purpose of each of the four acquisition planning documents and the document's relationship to program manager implementation of the JTA standards.

- **Mission Needs Statement.** The mission needs statement is a product of the requirements generation system. Chairman of the Joint Chiefs of Staff Instruction 3170.01A, "Requirements Generation System," August 10, 1999, requires DoD Components to define mission needs in broad operational terms in a mission needs statement. If DoD decisionmakers determine that a mission needs statement supports the need for a new system or system upgrade, the DoD Components use the broad requirements defined in the mission needs statement to develop the more detailed system requirements in the operational requirements document. The Instruction promotes warfighter use of JTA standards by requiring that mission needs statements define operational needs in conformance with DoD interoperability standards.
- **Operational Requirements Document.** Like the mission needs statement, the operational requirements document is a product of the requirements generation system that documents required operational performance parameters for the proposed concept or system. Chairman of the Joint Chiefs of Staff Instruction 3170.01A requires that the DoD Components, in the operational requirements document, include the performance parameters, including interoperability, which an acquisition program must meet. The Instruction promotes use of the JTA by requiring that system operational requirements documents specify that the system must comply with applicable information technology standards in the JTA.
- **Requests for Proposal.** The Federal Acquisition Regulation, Subpart 15.203, "Requests for Proposal," October 1, 1999, requires contracting officers for negotiated acquisitions to use requests for proposals to communicate Government requirements to prospective contractors and to solicit contractor proposals. Section C of the request for proposal has a section that includes "External Interfaces" and "Compliance with Standards." It is the program manager's

responsibility to identify the external interface standards required and to provide a listing of all relevant JTA standards and other standards necessary for the contractor to design into National Security Systems and information technology systems. Through this proposal section, the contracting officer can advise prospective contract offerors that they will be required to develop a system using standards contained in the JTA and that their proposal must address implementing the standards contained in the JTA if they want to be considered as a responsive offeror to the request for proposals.

- **Contract Statement of Work.** The Federal Acquisition Regulation, Subparts 15.406-1, “Uniform Contract Format,” and 15.406-2, “Part 1 - The Schedule,” requires agency solicitations for contracts to include a statement of work or other description that defines the Government’s requirements. Program manager inclusion of JTA standards requirements in this document is necessary to ensure that the contractor uses the JTA in the system design approach. Program managers can also use provisions in the contract statement of work, along with the contract data requirements list, to require the contractor to identify instances where cost, schedule, and performance considerations justify submitting a request to DoD authorities for waiver of JTA standards requirements, as discussed in finding C.

Appendix G. Audit Response to Management Comments Concerning the Report

Our detailed responses to the comments from the Director, Interoperability, Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Director, Architecture and Interoperability, Office of the Assistant Secretary of Defense (Command, Control Communications, and Intelligence); and the Vice Director, Joint Staff, Office of the Joint Chiefs of Staff on statements in the draft report follow. We also provide a response to the unsolicited comments from the Vice Director of Information Systems for Command, Control, Communications, and Computers, Office of the Secretary of the Army. The complete text of the management comments on statements in the draft report is in the Management Comments section of this report.

Director, Interoperability, Comments and Audit Response

Management Comments. The Director provided comments on the overall report as well as the recommendations, and editorial comments on individual report sections. In commenting on the overall report, the Director stated that, in general, he agreed with our findings that JTA implementation is not as robust as might be desired. However, he stated that there are issues related to JTA implementation that the draft report did not identify or discuss. Specifically, he stated that the DoD can only truly implement the technical architecture embodied in the JTA by marrying it with corresponding operational and system architectures. He believed that not addressing these issues could result in an unbalanced perception concerning the JTA and its implementation.

Audit Response. We added information to the report background to further clarify that the JTA, by itself, is not sufficient to achieve interoperability. Further, we considered the editorial comments that the Director provided to the report and made revisions where appropriate.

Director, Architecture and Interoperability, Comments and Audit Response

Management Comments. The Director, Architecture and Interoperability, provided comments on the overall report and the Background section. The Director stated that he concurred with the report's objectives, approach, findings, and recommendations. He stated that the report accurately assessed DoD progress in implementing the JTA and that our recommendations should effectively address the deficiencies noted during the audit. He further stated that the findings of the report highlighted the critical and necessary role the DoD

Components play in implementing and using the JTA. He asserted that the management processes and procedures documented in DoD Components' JTA implementation plans were key in communicating expectations and requirements for JTA implementation to Program Executive Officers and acquisition program managers. To further emphasize the requirement for DoD Components to establish JTA implementation management processes and controls, he proposed that we include an additional recommendation in finding A that: Heads of DoD Components, through their respective Component Acquisition Executives, conduct a thorough review of existing management, review, control, accountability, and waiver processes for implementation and use of the JTA within their respective Components and, based on the results of this review:

- reengineer their JTA-related processes where they can be improved,
- update their Component's JTA implementation plans to reflect the reengineered JTA processes, and
- delineate desired planning topics and content considerations in the JTA implementation plan template (that the Policy Offices would provide) to be incorporated in the implementation plan revisions.

With regard to the report Background section, the Director suggested that we discuss the responsibilities of the DoD Chief Information Officer for prescribing standards, as defined under section 2223, title 10, United States Code, "Information Technology: Additional Responsibilities of Chief Information Officers," October 1, 1998. He recommended this change to recognize, up front, that the DoD Chief Information Officer has statutory responsibility for prescribing standards throughout the DoD.

Audit Response. We did not include the additional recommendation to finding A that the Director proposed regarding DoD Components' review and revision of their existing processes relating to the JTA. While we believe the recommendation may have merit, we did not do audit fieldwork to assess the actual processes and procedures that DoD Components were using relating to JTA implementation; therefore, we do not have a basis for making the suggested recommendation. However, we believe that implementing the recommendations in the report will provide additional emphasis to DoD Components' implementation of the JTA and will improve the DoD Components' policies and procedures. We revised the text in the draft report Background to cite the responsibilities of the DoD Chief Information Officer.

Vice Director, Joint Staff, Comments and Audit Response

The Vice Director provided comments on the overall report as well as comments on the Executive Summary, Background, Findings and Appendixes.

Comments on the Overall Report. The Vice Director provided the following general comments on the overall report.

Responsibility for the Mission Needs Statement and the Operational Requirements Document. The Vice Director asserted that the report incorrectly stated that the mission needs statement and the operational requirements document were the responsibility of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control Communications, and Intelligence). He stated that those documents are the product of the Requirements Generation System, for which the Office of the Joint Chiefs of Staff is responsible.

Audit Comment. We agree. We modified Appendix F to explain that the mission needs statement and the operational requirements document are products of the Joint Chiefs of Staff requirements generation system.

Updated Acquisition Policy. The Vice Director stated that the draft report did not reference the most recent JTA language incorporated in the Interim DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs," January 4, 2001. He cited revised JTA language in the regulation and stated that, to comply with the JTA, program managers must implement the JTA using the C⁴I Support. He also stated that the draft report did not reference JTA compliance language in the March 15, 1996, version of DoD Regulation 5000.2-R, which stated that weapon systems must comply with the JTA in C⁴I Support Plans.

Audit Response. The draft report correctly stated that the DoD Policy Offices were working to revise and update JTA policy, including updating the DoD 5000 series and the broader applicability of the JTA resulting from the memorandum the Policy Offices issued in November 1998, implementing JTA Version 2.0. We did not reference the JTA compliance language in the March 15, 1996, version of DoD Regulation 5000.2-R, which states that weapon systems must comply with the JTA in C⁴I Support Plans, because our audit scope focused on the mission need statement, operational requirements document, request for proposal, and contract statement of work. We revised the Updating Policy section of finding B to recognize the revised JTA language in DoD Regulation 5000.2-R, January 4, 2001. We recognized the importance of C⁴I Support Plans in effective JTA implementation in our audit response to actions taken by the Director, Architecture and Interoperability, to Recommendation B.1, which included establishing required timelines for DoD Components to submit draft C⁴I Support Plans to the Joint Staff for certification.

Additional References. The Vice Director stated that that the draft report should have referenced the following:

- DoD Instruction 4120.24, Defense Standardization Program (DSP),” or DoD Manual 4120.24-M, “DSP Policies and Procedures,” March 2000. The Vice Director stated that DoD Manual 4120.24-M mandates the JTA as a standardization consideration.
- “Joint Staff Military Communications-Electronic Board (MCEB) Interoperability Policy and Test Panel (IPTP) Charter,” November 3, 2000. The Vice Director stated that the Interoperability Policy and Test Panel is the primary DoD forum to guide the Defense Information Systems Agency and the Joint Interoperability Test Command to conduct JTA-prescribed standards and interoperability testing between National Security Systems and Information Technology Systems.
- The Policy Office and Director, Operational Test and Evaluation, memorandum, “Promulgation of DoD Policy for Assessment, Test, and Evaluation of Information Technology System Interoperability,” December 4, 2000. The Vice Director stated that the memorandum outlines a process for interoperability review and assessment and allows the Director, Operational Test and Evaluation, to place programs having interoperability deficiencies on a watch list until the programs resolve the deficiencies.

Audit Response. We added a reference to DoD Manual 4120.24-M, “DSP Policies and Procedures,” March 2000, to the Updating Policy section of finding B. We did not add references to the other two documents because they primarily cover activities beyond the scope of the issues addressed in our report. Specifically, the Joint Staff Military Communications-Electronic Board (MCEB) Interoperability Policy and Test Panel (IPTP) Charter and the Policy Office and Director, Operational Test and Evaluation, memorandum provide processes and procedures for testing systems for interoperability after the DoD establishes the interoperability requirements for the system. Our report discusses issues relating to JTA Implementation Plans, use of the JTA standards in acquisition planning documents, and requesting waivers to using JTA standards.

Joint Technical Architecture Development Group Management Plan. The Vice Director stated that the draft report should use the most current JTA Development Group Management Plan (Management Plan) in report discussion regarding the Architecture Coordination Council, the Technical Architecture Steering Group, the Defense Information Systems Agency, and DoD Components involved in the development and publication of the JTA. The Vice Director further recommended that we revise Appendix D based on the current Management Plan.

Audit Response. We believe the Vice Director was referring to the most current version of the “DoD JTA Management Plan,” January 24, 2001,

in his comments, because the language in this document corresponds to the language in his comments to Appendix D. Accordingly, we revised our discussion of the referenced groups in Appendix D to correspond to the description provided in the DoD JTA Management Plan.

Clinger Cohen. The Vice Director stated that the draft report incorrectly identifies the JTA as the “information technology architecture” as mandated by the Clinger-Cohen Act of 1996. He stated that the JTA is no more than a DoD “Joint Interoperability Technical Standards Document.”

Audit Response. The draft report did not state that the JTA was the “information technology architecture” as mandated by the Clinger-Cohen Act of 1996.

JTA Implementation Plans. The Vice Director stated that the draft report treated the JTA Implementation Plan as “JTA implementation.” He stated that implementation of the JTA is incorporated in DoD Regulation 5000.2-R and that program managers must specify and tailor all applicable JTA standards in the program for which they are responsible in the acquisition process. He requested that we review program manager documents to see whether standards were specified.

Audit Response. Report language clearly portrayed JTA implementation plans as a tool for helping DoD Components implement applicable JTA standards. In finding A, we included language from Policy Office memorandums explaining that the JTA implementation plans are a tool for outlining DoD Component approaches for implementing the standards in the JTA. We also stated that JTA implementation plans were designed to ensure that DoD Components defined processes, roles, and responsibilities for implementing the JTA. We did not review program manager documents. Instead, we queried program managers concerning JTA language in program acquisition planning documents through a survey questionnaire. The survey approach provided us with a much broader review scope than was possible through direct on-site program review.

Standards Prescribed in the JTA. The Vice Director stated that the draft report should acknowledge that the JTA prescribes a minimum set of information technology standards consisting of military-unique, Federal-unique, and consensus commercial standards, and that additional standards and technologies may be required for developing National Security Systems or Information Technology Systems.

Audit Response. We modified the JTA description in the report Background section.

Focus of the Report. The Vice Director stated that, although the report is titled, “Use of JTA in DOD Acquisition Process,” its actual focus is on JTA implementation planning. He stated that if our intent was to focus on the JTA and the acquisition process, the report should compare the 39 weapon system programs currently in the acquisition phases and the varying application of the JTA standards.

Audit Response. The draft report title is appropriate for the subject audit report. Not only did the audit examine the adequacy of the DoD Component plans for implementing the JTA, but also it addressed the DoD Components and program managers' use of JTA standards in weapon system acquisition documentation.

C⁴I Support Plans. The Vice Director stated that the draft report did not acknowledge that DoD Regulation 5000.2-R requires program managers to develop a C⁴I Support Plan for all National Security Systems and Information Technology Systems, regardless of acquisition category. He stated that, as part of the C⁴I Support Plan, the program manager is required to document a technical architecture profile describing the specific standards (including JTA standards) that the program will use for specified information interfaces. He further recommended that we review the process at various levels to determine whether acquisition managers were providing required oversight for Acquisition Category II and III programs where most interoperability problems manifest themselves.

Audit Response. We agree that the requirement for program managers to prepare C⁴I Support Plans is important for ensuring that program managers identify and include applicable JTA standards in designing their systems. Accordingly, we have included a discussion of the requirement for C⁴I Support Plans in finding B. The scope of our audit addressed Acquisition Category I programs. However, policy and procedure changes that result from implementing our recommendations should also affect their use of applicable JTA standards in Acquisition Categories II and III programs.

Differentiating Standards. The draft report should differentiate Office of Management and Budget Circular A-119 standards from National Security System-related standards.

Audit Response. We did not make this change. Office of Management and Budget Circular A-119 provides broad policy directing agencies to use voluntary consensus standards instead of government-unique standards. As stated in the report, the broad policy in Circular A-119 supports the use of JTA standards, which included specific types of standards such as those for National Security Systems.

Applicability of Clinger-Cohen Act to National Security Systems. The draft report should acknowledge that the Clinger-Cohen Act of 1996 is not applicable to procurement of National Security Systems.

Audit Response. We did not make this change. The nonapplicability of the Clinger Cohen Act to National Security Systems as stated in Title LI, "Responsibility for Acquisitions of Informational Technology" of the Act, is limited. While Title LI exempts National Security Systems from some sections of the Act, other sections do apply. Additionally, in the sections where the exemption does apply, the Act states that agencies shall apply the provisions of the Act to National Security Systems 'to the extent practicable.

Additional Actions Requested. The Vice Director requested that we take the following additional actions regarding the audit report:

- Analyze the cost and documented value of the JTA and items contained in JTA implementation plans to determine whether the current strategy should be continued. He stated that the JTA-mandated language has been extensively incorporated in the new DoD Regulation 5000.2-R, January 4, 2001, for programs to implement.
- Refocus the audit on how the JTA supports the DoD Regulation 5000.2-R and comparable Service processes to reflect the title of the audit. He stated that we should give special consideration to the contents of the request for proposal, system specification, system architecture specification, system architecture, and to whether standards prescribed by DoD Components in the JTA were tailored and specified in these documents. He stated that program managers are responsible for selecting relevant individual standards when developing the above documents.
- The open-systems approach and design are entirely different topics than the JTA issue and should be dealt with in a separate audit report.

Audit Response. The actions suggested by the Vice Director were outside the scope of this audit. As indicated in the report, the JTA is of value to DoD because it is a tool for promoting overall DoD system interoperability requirements in individual weapon systems. In this respect, more than 80 percent of the respondents to the survey questionnaire indicated that the use of the JTA standards helped them achieve program interoperability requirements and that the use of the JTA standards benefited or did not negatively impact the execution of their acquisition programs. Also, open systems were addressed in Inspector General, DoD, Report No. D-2000-149, "Use of an Open System Approach for Weapon Systems," June 14, 2000. The report discussed the extent to which program managers considered and used an open systems approach in weapon systems acquisition.

Comments on the Report Background. The Vice Director made comments relating to the following sections of the report Background: "Need for the Joint Technical Architecture," "Management of the JTA," "Public Law and Government Policy," and "Audit Objectives."

Need for the Joint Technical Architecture. The Vice Director stated that, to provide accurate and complete background information on the JTA, we should delete the summary paragraph discussing the Policy Offices' actions in establishing the JTA and substitute his suggested text.

Audit Response. The suggested text changes provide unnecessary detail for the overall background of the report. Detailed background information is contained in the findings and appendixes, as required.

Management of the JTA. The Vice Director stated that we should remove language describing the Policy Offices' management of the JTA; the responsibilities of the DoD Chief Information Officer that are outside of the acquisition responsibilities of the Under Secretary of Defense for Acquisition, Technology, and Logistics; and the procedures for waiving JTA requirements. Along with these suggested changes, he stated that we should insert language that:

- emphasizes that the Policy Offices manage the JTA as co-chairs of the Architecture Coordination Council.
- states that the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), as the DoD Chief Information Officer, must ensure the interoperability of National Security Systems and Information Technology Systems throughout DoD, and that DoD Components use prescribed National Security Systems and Information Technology Systems data standards, including applicable standards in the JTA.
- summarizes the updated waiver policy from the January 4, 2001, version of DoD Regulation 5000.2-R.

Audit Response. We did not remove the draft report language on the Policy Offices' management of the JTA. The Policy Offices do jointly manage the JTA. The Architectural Coordination Council and other subordinate groups are the vehicles through which the Policy Offices accomplish management of the JTA. Based on comments received from the Director, Interoperability, Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, we modified the report text to show that responsibilities of the DoD Chief Information Officer, for pre- and post-acquisition of systems, actually overlap those of the Under Secretary. Where appropriate, we also made revisions concerning the additional information that the Vice Director requested.

Public Law and Government Policy. The Vice Director stated that JTA development was not the responsibility of the DoD Chief Information Officer. Additionally, he provided references to Public Law and Government policies pertaining to National Security Systems, Information Technology Systems and the JTA.

Audit Response. The information concerning responsibilities of the DoD Chief Information Officer were correctly stated. The excerpts from Public Law and Government policy were intended to show that these laws and policy support the DoD use of JTA. Additionally, we did not state that DoD JTA development was the responsibility of the DoD Chief Information Officer. We stated that Public Law requires the Chief Information Officer for each Military Department to ensure that Information Technology and National Security Systems are in compliance with Government and DoD standards and that Information Technology and National Security Systems are interoperable with other relevant Government and DoD Information Technology and National Security Systems.

Audit Objectives. The Vice Director stated that we should delete “planning” from our stated audit objectives. He stated that Inspector General, DoD, Report No. 98-023, “Implementation of the DOD Joint Technical Architecture,” November 18, 1997, already covered JTA planning through evaluating JTA implementation plans. Further, he stated that JTA planning should be referred to as JTA version planning. He asserted that the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control Communications, and Intelligence) did not provide a single comment that JTA implementation plans submitted by DoD Components were insufficient. Additionally, the Vice Director asserted that our statement that JTA implementation plans did not fully comply with guidance from the Policy Offices and were not consistent in implementing the standards was inaccurate and unfair. Lastly, he recommended that the draft report assess National Security Systems and Information Technology Systems to determine whether relevant JTA standards and other standards were specified in requests for proposals and system architecture.

Audit Response. We reviewed planning related to JTA implementation because the staff of the Assistant Secretary of Defense (Command, Control Communications, and Intelligence) requested that we follow up on the recommendations addressing JTA implementation in Inspector General, DoD, Report No. 98-023. Finding A clearly stated what is involved in JTA planning. In finding A, we also documented that the JTA implementation plans of many DoD Components were incomplete and needed to be updated. Further, we addressed the lack of comments from the offices of the Under Secretary and the Assistant Secretary as one of the causal factors for the noted incompleteness of JTA implementation plans. We assessed program office inclusion of JTA standards in acquisition planning documents through our JTA survey questionnaires of all Acquisition Category I programs; therefore, we did not separately assess National Security Systems and Information Technology Systems to see whether relevant JTA standards and other standards were specified in their requests for proposals and system architecture because the JTA has broader application.

Comments on Finding A. The Vice Director provided comments that addressed the overall finding, the finding paragraph, and the finding sections “Policy for JTA Implementation Plans,” and “DoD Component Implementation Plans.”

Overall Finding. The Vice Director stated that all DoD Components submitted JTA implementation plans and that the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control Communications, and Intelligence) did not reject any of the plans. The Vice Director then stated that we should remove this finding from the report.

Audit Response. The lack of feedback to the DoD Components on their JTA implementation plans from the Offices of the Under Secretary and the Assistant Secretary was one of the causal factors for the noted incompleteness of the JTA implementation plans.

Finding Paragraph. The Vice Director suggested the following changes to the finding paragraph:

- Replace “Policy Offices” with “Assistant Secretary of Defense (Command, Control Communications, and Intelligence) / DoD Chief Information Officer when discussing DoD Component compliance with guidance for preparing JTA implementation plans. He stated that only the Assistant Secretary issued the memorandum, “Clarification on the Content of DoD Components' Joint Technical Architecture (JTA) Implementation Plans,” October 4, 1996.
- Replace “Policy Offices” with “Architectural Coordination Council Tri-chairs” when discussing causal factors for the conditions noted in the finding paragraph.
- Delete the three bullets describing causal factors for the finding condition for the following reasons:
 - DoD is a finite organization. The “universe of DoD Components” list is unnecessary for implementing JTA.
 - Definitive guidance for preparing and updating JTA implementation plans is not necessary because the DoD Acquisition processes are program and system based. Program managers tailor and specify applicable JTA standards into the request for procurement for the offeror in costing on the system. The JTA implementation plan is not the implementation of JTA. JTA mandate language is already included in DoD Regulation 5000.2-R.
 - Management processes to receive, track, evaluate, and provide feedback on the content of JTA plans are not necessary because DoD has many measures and procedures in place, including those contained in DoD Regulation 5000.2-R and CJCS Instruction 6212.01B, to ensure “interoperability.”

In addition to the above suggestions pertaining to the finding paragraph, the Vice Director stated that the draft audit report did not recognize that the DoD 5000 series excludes embedded weapon systems and tactical communications systems.

Audit Response. In response to the suggestions and comments from the Vice Director:

- We did not replace “Policy Offices” with “Assistant Secretary of Defense (Command, Control Communications, and Intelligence) / DoD Chief Information Officer when discussing DoD Component compliance with guidance for preparing JTA implementation plans because all three Policy Offices signed the two JTA

implementation memorandums addressing implementation plans that followed the JTA Version 1.0 implementation memorandum, October 1996.

- We did not change “Policy Offices,” to “Architectural Coordination Council Tri-chairs” when discussing causal factors for the conditions noted in the finding paragraph because we believe that “Policy Offices” is a more descriptive term for referring to the three offices involved in managing the JTA. However, for clarification, we modified the finding to state that the DoD Components did not comply with policy and guidance (rather than guidance only) from the Policy Offices. That description is more accurate. Although the Assistant Secretary’s October 4, 1996, memorandum on content of implementation plans was guidance, DoD Components also did not follow policy in the memorandums that the Policy Offices issued to implement JTA Versions 1.0, 2.0, and 3.0.
- We did not delete the three bullets from the finding paragraph for the following reasons:
 - The Office of the Secretary of Defense needs to identify the universe of DoD Components that should be submitting JTA implementation plans. The Office of the Assistant Secretary can then direct its attention to ensuring that all applicable DoD Components submit JTA implementation plans as required and provide direction, as needed, on the content of the submitted plans. Additionally, while those DoD Components having major acquisition involvement may have submitted a JTA implementation plan, six DoD Components had only submitted implementation plans for JTA Version 1.0 and not for JTA Version 2.0, as detailed in Appendix E.
 - The need for definitive guidance for preparing and updating JTA implementation plans is apparent. We highlighted some of the unique strengths in individual DoD Component implementation plans that could be of benefit for all DoD Component plans. When we provided examples of these strengths to the Office of the Assistant Secretary of Defense (Command, Control Communications, and Intelligence) co-chair of the JTA Technical Architecture Steering Group, he agreed that it would be beneficial to develop a template that, would provide the DoD Components with a listing and explanation of JTA planning topics and considerations for addressing each topic.
 - The need for management processes for tracking and providing feedback on JTA implementation plans is long-standing and was first reported in Inspector General, DoD, Report No. 98-023. As discussed in finding A, the Office of the Assistant Secretary of Defense (Command, Control

Communications, and Intelligence), is taking actions which, when completed, will allow it to receive, track, evaluate, and provide review and feedback on DoD Component plans.

- The draft report did not state that the DoD 5000 series excludes embedded weapon systems and tactical communications systems, but this fact is background in nature and has no impact on the findings and recommendations in our report.

Policy for JTA Implementation Plans. The Vice Director suggested that we revise finding A to summarize all of the key points in the three JTA policy memorandums.

Audit Response. We did not expand the discussion of the three JTA policy memorandums because we limited our summary of the memorandums to those policy elements specifically relating to the issues addressed in finding A.

DoD Component Implementation Plans. The Vice Director stated that the draft report assertion that review of DoD Component JTA implementation plans showed that the Components did not comply with Office of the Assistant Secretary of Defense (Command, Control Communications, and Intelligence) direction regarding submission and content of plans is incorrect. He stated that DoD Regulation 5000.2-R governs JTA “implementation.”

Audit Response. DoD Regulation 5000.2-R governs JTA implementation. To assist the DoD Components in implementing JTA implementation requirements in DoD Regulation 5000.2-R, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued guidance clarifying the required content of DoD Component JTA implementation plans. Accordingly, we did not revise the report in response to the Vice Director’s comments.

Comments on Finding B. The Vice Director made the following comments on finding B relating to requirements in key acquisition planning documents.

- program managers did not routinely insert JTA requirements in the mission needs statement and the operational requirements documents is misleading because the program manager is not responsible for writing requirements documents.
- an Inspector General review of selected requirements documents demonstrated that all documents reviewed by the Joint Staff and Defense Information Systems Agency since 1998 mandated JTA compliance for those programs that were required to comply with the JTA, and requirements documents that did not mandate JTA compliance received Joint Staff nonconcurrence throughout the review process.
- regardless of whether a pre-1998 requirements document was updated to mandate JTA compliance, the program manager was required to acquire systems that were JTA compliant, where technically and fiscally feasible.

Audit Response. With regard to responsibility for writing requirements documents, we revised finding B and Appendix F to clarify that the DoD Components write the initial draft version of the requirements documents, not the program manager.

During the audit, we reviewed document files in the Office of the Joint Chiefs Staff Director for Command, Control Communications, and Computers to corroborate the 39 program managers' survey responses on whether JTA language was in the mission needs statements and the operational requirements documents as discussed in finding B. We did not review mission needs statements because the Director's office did not have these documents on file for the 39 programs that responded to our survey questionnaire. The results of our review of program operational requirements documents were as follows:

- program operational requirements documents were on file for 24 of the 39 programs responding.
- of the 24 operational requirements documents on file:
 - Eleven operational requirements documents (9 dated 1997 or prior and 2 dated 1998 or later) did not include a requirement for JTA compliance. For the 2 most recent operational requirements documents, the Vice Director's Office had noted the lack of a JTA requirement in a critical resolution matrix attached to the operational requirements document.
 - Thirteen operational requirements documents included the requirement for JTA compliance.
- our comparison of program manager responses on whether the operational requirements document for their program contained a JTA requirement to the 24 operational requirements documents in the files of the Office of the Director for Command, Control, Communications, and Computers showed that program manager responses:
 - agreed with the results of our survey questionnaire for 17 of the 24 programs,
 - disagreed with the results of our survey questionnaire for four programs, with the program managers stating that JTA requirements were not included in the operational requirements document although our review showed that JTA requirements were included in the documents, and
 - disagreed with the results of our survey questionnaire for three other programs, with the program managers stating that JTA requirements were included in the operational requirements document although our review showed that JTA requirements were not included in the documents.

Based on the above results, we believe that our review of operational requirements documents largely corroborated responses to our survey questionnaire regarding JTA requirements in the operational requirements document. Accordingly, we made no revisions to the report based on the Vice Director's comments.

Comments on Appendix B. The Vice Director requested that we add definitions of the following terms to the appendix: "automated information system," "weapon system," "milestone decision authority," and "program manager."

Audit Response. We revised the report to include the additional definitions.

Comments on Appendix D. The Vice Director requested that we delete the text of the appendix and replace it with updated descriptions that he provided of the responsibilities for managing the JTA.

Audit Response. We revised the language in the appendix to include any additional or revised information contained in the Vice Director's updated descriptions.

Comments on Appendix E. The Vice Director stated that we should delete this appendix, because it was unrelated to the title of our report, "Use of DoD Joint Technical Architecture in the Acquisition Process."

Audit Response. We did not delete the appendix. The topic of the appendix, "DoD Component JTA Implementation Plans," is related to the report title and concerns effective use of the JTA in the acquisition process.

Comments on Appendix F. The Vice Director stated that we should delete the mission needs statement and the operational requirements documents from the appendix because they are requirements generation documents, not acquisition planning documents.

Audit Response. We did not delete the mission needs statement and the operational requirements documents from the appendix. Although these documents are part of the requirements generation process, they are also part of the acquisition planning process. DoD Regulation DoD 5000.2-R, January 4, 2001, classifies these documents as approved source documents. DoD Components use these source documents to formulate program acquisition strategy.

Note. The Vice Director provided other editorial comments that we implemented where appropriate.

Army Comments

Although not required to comment, the Vice Director of Information Systems for Command, Control, Communications, and Computers, Office of the Secretary of the Army, stated that the Army agreed with the findings and basically agreed with the proposed recommendations. However, he stated that his office would like to discuss some concerns regarding the recommendations with the audit team and the Services. For example, the Vice Director stated that he did not understand the extent of the Defense Information Systems Agency's proposed role in the review process for mission needs statements and operational requirements documents. He asserted that the Army already included JTA compliance language in acquisition documents and that the Army and DoD review the documents. He further stated that the Army was active in implementing and revising the JTA to help achieve weapon system interoperability and to support the open systems approach to weapon system design.

Appendix H. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition, Technology, and Logistics
Deputy Under Secretary of Defense (Acquisition Reform)
Under Secretary of Defense (Comptroller)
Deputy Chief Financial Officer
Deputy Comptroller (Program/Budget)
Assistant Secretary of Defense (Command, Control Communications, and Intelligence)

Joint Staff

Director, Joint Staff

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Naval Inspector General
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Management Agency
Director, Defense Information Systems Agency

Non-Defense Federal Organization

Office of Management and Budget

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Reform
House Subcommittee on Government Efficiency, Financial Management,
Intergovernmental Relations, Committee on Government Reform
House Subcommittee on National Security, Veterans Affairs, and International
Relations, Committee on Government Reform
House Subcommittee on Technology and Procurement Policy, Committee on
Government Reform

Under Secretary of Defense for Acquisition, Technology, and Logistics Comments



ACQUISITION,
TECHNOLOGY
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

APR 11 2001

OUSD (AT&L)/IO

MEMORANDUM FOR Deputy Director, Acquisition Management Directorate, Office of the Inspector General

THROUGH: Director, Acquisition Resource and Analysis 72 4/10/01

SUBJECT: Review of the Draft Audit Report on Use of the DoD Joint Technical Architecture (JTA) in the Acquisition Process (Project No. D1999AE-0101.001)

The Office of the Under Secretary of Defense, Acquisition, Technology, and Logistics (OUSD (AT&L)) appreciates the opportunity to review and comment on the above referenced Draft Audit Report.

OUSD (AT&L) does not concur with all of the findings and recommendations contained in the draft report. We have provided our specific comments in Attachment 1. OUSD (AT&L) also suggests several editorial changes to the draft audit report, and these are included in Attachment 1, along with the rationale for the suggested changes.

In general, OUSD (AT&L) agrees with the DoD IG findings that JTA implementation is not as robust as might be desired. However, it is of merit to point out there are a number of related issues not identified or discussed. Not also addressing those issues could leave an unbalanced perception concerning the JTA and its implementation. The technical architecture embodied in the JTA can only be truly implemented when married with corresponding operational and system architectures. These issues are also addressed in Attachment 1.

In addition, implementation of the specific DoD IG recommendations contained in the draft report is not expected to occur immediately, as a part of the structure for coordinating the approaches to achieving interoperability is changing. A Charter for an Architecture Integration Council (AIC) and Architecture Integration Group (AIG), that will replace the Architecture Coordination Council (ACC), is presently in coordination and should be finalized within the next few months. The ACC is not expected to meet again. It is expected that the recommendations of the subject draft audit will be forwarded to the AIC and/or AIG for implementation in a manner agreed to by the AIC/AIG. Therefore, the completion dates for the actions to accomplish the recommendations (as modified by the comments attached to this memorandum) cannot be determined at this time.

The OUSD (AT&L) POC is Dr. Elizabeth Rodriguez-Johnson, (703) 695-0472, Elizabeth.Rodriguez-Johnson@osd.mil. Specific questions on the comments should be



addressed to the OUSD (AT&L)/IO/SA POCs, Mr. Bill Beasley or Mr. Bill Sieg, 703-695-0472, William.Beasley@osd.mil and William.Sieg@osd.mil, respectively.



Dr. V. Garber
Director, Interoperability

Attachment:
Comments on Recommendations
and Other Comments

Comment Matrix

For

DoD IG Draft Proposed Audit Report "Use of the DoD Joint Technical Architecture in the Acquisition Process"

No	Pg.	Para.	Component	COMMENTS ON RECOMMENDATIONS Proposed Change / Rationale
1.	14	A.	OUSD(AT&L) /OSJTF	DoD IG Recommendation: Para. A., page 14: "We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers, as co-chairpersons of the Architecture Coordination Council, establish an organization with the primary responsibility for:" OUSD (AT&L) non-concurs with the recommendation, as written, and suggests changing the last sentence of Para. A, page 14, to read " ...Architecture Coordination Council, establish organizational responsibility for:" Rationale: This allows the ACC to decide how to implement recommendations rather than dictate a new or separate organization as it now reads. As written the recommendation requires the ACC to create a new organization. This may be appropriate however, an existing organization, with these additional responsibilities may be more appropriate and feasible. An entirely new organization may not be necessary nor feasible and would entail greater costs and an expanded bureaucracy.

Page 14

Page 14

Attachment 1

Comment Matrix

For

DoD IG Draft Proposed Audit Report “Use of the DoD Joint Technical Architecture in the Acquisition Process “

No	Pg.	Para.	Component	COMMENTS ON RECOMMENDATIONS Proposed Change / Rationale
2.	14	A.1	OUSD(AT&L) /IO/SE	DoD IG Recommendation: Para. A.1, page 14: “Identifying the universe of DoD Components that, based on their acquisition efforts, should be submitting plans for implementing the DoD Joint Technical Architecture.” OUSD (AT&L) non-concurs with this recommendation, as written, for the following reasons: In general, the report does not clearly distinguish between “implementing the JTA” and “implementing JTA standards”. These are two very different functions and are the responsibilities of different authorities. SAE/CAEs are responsible for “implementing the JTA” in their requirements procedures and processes. Program managers are responsible for “implementing only the <i>appropriate</i> JTA standards” in the products that result from the requirements process. OUSD (AT&L) recommends that the DoD IG clearly define and carefully use these two separate concepts throughout this report. Without this clarification, the reader could infer that “implementing the JTA” means that all JTA standards should be implemented in a product without regard for what is <i>appropriate</i> as defined by requirements contained in formal requirements documents (MNS, CRD, ORD, etc.). Rationale: Corrections were made to this version of the draft audit report to replace “implementing the JTA” with the phrase “implementing the standards contained in the JTA”. However this simple change does not recognize that these are two very different functions and that they are the responsibilities of different authorities. SAE/CAEs are responsible for “implementing the JTA” in their requirements procedures and processes. Program managers are responsible for “implementing only the <i>appropriate</i> JTA standards” in the products that result from the requirements process. The current draft of the report uses these terms (concepts) interchangeably and gives the impression that these two functions are synonymous. Without this clarification, the reader could infer that “implementing the JTA” means that all JTA standards should be implemented in a product without regard for what is <i>appropriate</i> as defined by requirements contained in formal requirements documents (MNS, CRD, ORD, etc.). Comment: The JTA, in its entirety, should not be used as a design specification in contractual documents. We did away with MIL STDs in part to free contractors from the expense of having to understand and address the MIL STDs in total when only limited paragraphs therein applied to their systems. This was a costly evolution for contractors that was passed along to the government. Placing the JTA its entirety on contract as proposed in essence returns us to a process similar to that in existence prior to acquisition reform. This is not a prudent move and will be extremely costly.

Comment Matrix

For
DoD IG Draft Proposed Audit Report “Use of the DoD Joint Technical Architecture in the Acquisition Process”

No	Pg.	Para.	Component	COMMENTS ON RECOMMENDATIONS Proposed Change / Rationale
3.	14	A.2	OUS(D(AT&L) /DLA	DoD IG Recommendation: Para. A.2, page 14: “Developing and distributing to DoD Components a template for preparing DoD Joint Technical Architecture implementation plans that would include a listing and explanation of required DoD Joint Technical Architecture planning topics and the rationale for each planning topic, and considerations for addressing each topic.” OUSD (AT&L) concurs with this recommendation, and recommends the addition of the following: “The template should also include sample contract language dealing with JTA implementation for use in developing RFPs and SOWs as well as a section, when appropriate, describing how to distinguish JTA implementation approaches between acquisition of weapon systems and business systems.” Rationale: The guide provides a vehicle for consideration of standard contractual language to be used by DoD Component when preparing JTA Implementation guides. In addition, where business systems may exist within the Component, it provides a place in the guide to distinguish JTA implementation approaches that may be different than that used for weapons systems.
4.	23	B.1.	OUS(D(AT&L) /IO/SE & /IO/SA	DoD IG Recommendation: Para. B.1, page 23: “We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, communications, and Intelligence), in coordination, establish timeframes for DoD Components to input draft and final versions of mission needs statements and operational requirements documents to the Defense Information Systems Agency to enable it to review the adequacy of the DoD Component’s planned use of the DoD Joint Technical Architecture as required in Chairman, Joint Chiefs of Staff Instruction 612.01B, ‘Interoperability and Supportability of National Security Systems, and Information Technology Systems,’ May 8, 2000, before planned milestone decision reviews.” OUSD (AT&L) partially concurs with this recommendation, but suggests the following clarification change to the first sentence of Recommendation B.1, page 23: “We recommend that the Joint Staff in coordination with the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) establish timeframes ...” Rationale: It is the Joint Staff who oversees the Requirements Generation Process, not the Acquisition organizations. They only respond to the mission needs statements and the operational requirements documents.

Page 16

Page 28

Attachment I

Comment Matrix

For

DoD IG Draft Proposed Audit Report “Use of the DoD Joint Technical Architecture in the Acquisition Process “

No	Pg.	Para.	Component	COMMENTS ON RECOMMENDATIONS Proposed Change / Rationale
5.	23	B.2.	OUSD(AT&L) /IO/SE & IO/SA	DoD IG Recommendation: Para. B.2, page 23: “We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics, through the overarching integrated product teams, review requests for proposals and contract statements of work to verify that requirements for use of the DoD Joint Technical Architecture established in the operational requirements document are translated into clear contractual requirements with the additional requirement for the contractor to identify instances where cost, schedule, or performance impacts may preclude use of Joint Technical Architecture mandated standards.” OUSD (AT&L) partially concurs with this recommendation, but suggests the following clarification change to the first sentence of Recommendation B.2, page 23, to read: “We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics, establish a process to review requests for proposals and contract statements of work to” Rationale: This allows USD (AT&L) the flexibility to respond without dictating the specific organizational approach. Assigning this responsibility to an OIPT or IPT may not be the optimum solution nor be consistent with Acquisition Reform that “pushes” responsibility to the lowest level. This minor change in wording will allow the USD (AT&L) to address the issue presented in this recommendation –acquisition documents not appearing to adequately call-out use of JTA standards – in a manner that meets the intent of the recommendation and also preserves Acquisition Reform objectives.
6.	23	B.3.b.	OUSD(AT&L) /S&TS	DoD IG Recommendation: Para. B.3.b., page 23: “Include in the planned ‘DoD Joint Technical Architecture User Guide’ the suggested general template language to assist warfighters and program managers in implementing DoD Joint Technical Architecture requirements in the mission needs statements and the operational requirements document.” OUSD (AT&L) partially concurs with this recommendation, but suggests that references to “Joint Technical Architecture” be changed to “Interoperability.” Rationale: The JTA is only one method of achieving interoperability. It would be more appropriate to have a “DoD [Information] Interoperability Guide” as a means to implement “Interoperability.”

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE 6000 DEFENSE PENTAGON WASHINGTON, DC 20301-6000

March 16, 2001

MEMORANDUM FOR THE DOD INSPECTOR GENERAL

SUBJECT: Management Comments to DOD IG Audit Report on Use of the DoD Joint Technical Architecture in the Acquisition Process (Project No. D1999AE-0101.001)

This office has reviewed the subject Audit Report with interest and concurs overall with its objectives, approach, findings and recommendations. The Audit report accurately assesses Department of Defense progress in implementation of the DoD Joint Technical Architecture (JTA). Proposed recommendations should effectively address deficiencies identified during this audit. Provided below are our management comments regarding the specific findings and recommendations for this audit:

Finding A. -- DoD Joint Technical Architecture Implementation Plans. This office concurs with Finding A and its recommendations.

-- This office will work with the Office of the Under Secretary of Defense for Acquisition Technology and Logistics (OUSD (AT&L)) to identify the universe of DoD Components which will be required to submit JTA implementation plans. The recommended scope of DoD Components required to submit implementation plans will be those with Component Acquisition Executive (CAE) or equivalent cognizant authority.

-- The Deputy Chief Information Officer 's (DCIO's) office will direct (within 30 days) the Defense Information Systems Agency (DISA), Center for Standards to develop a JTA implementation plan template (to include planning topics and content considerations) for use by DoD Components in developing their plans. This template will be posted to the JTA web page immediately upon completion and incorporated in the next revision of the JTA as an Appendix. The draft DoDI 4630.8, currently under formal coordination, requires DoD Components to submit JTA implementation plans to the DoD CIO for review. The DCIO's Directorate for Architecture and Interoperability will conduct implementation plan reviews and will establish controls and procedures necessary to ensure DoD Components compliance with defined requirements. Additionally, as a part of this review process, this office will establish a mechanism for DoD Components to provide JTA implementation status to USD (AT&L), the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), the DoD CIO and the Joint Chiefs of Staff, Director for Command, Control, Communications and Computers. We anticipate that the JTA implementation plan template and associated processes for control, review and reporting DoD Component implementation status will be in place by October 1, 2001.



-- The findings of this audit report highlight the critical and necessary role the DoD Components play in implementation and use of the JTA. The management processes and procedures documented in the DoD Component's implementation plans are key in communicating expectations and requirements for JTA implementation to Program Executive Offices (PEOs) and Program Managers (PMs). To emphasize the DoD Component's requirement to establish JTA implementation management processes and controls, this office proposes the following additional recommendation be included in Finding A:

"A.2.. We recommend that the Heads of DoD Components, through their respective Component Acquisition Executives (CAEs), conduct a thorough review of existing management, review, control, accountability and waiver processes for implementation and use of the JTA within their respective components. Where existing processes and procedures can be improved, DoD Components should update respective DoD Component's JTA implementation plans to reflect these reengineered processes. Additionally, during review and update of existing implementation plans, DoD Components should ensure that desired planning topics and content considerations delineated in the JTA implementation plan template (to be provided by the Policy Offices) are incorporated in implementation plan revisions."

Finding B. -- Use of the DoD Joint Technical Architecture Requirements in Weapon System Acquisition Documentation. This office concurs with Finding B and its recommendations.

-- A statement of planned use of the DoD JTA in requirements documents is appropriate for inclusion in only Operational Requirements Documents (ORDs) and C4I Support Plans (C4ISPs). This office will establish, in coordination with the OUSD (AT&L) and the Joint Staff/J6, required timelines for DoD Components to submit ORDs and C4I Support Plans to the Joint Staff for requirements certification. Currently, the timeline for review and certification by the Joint Staff (which incorporates appropriate reviews by DISA) is based on the requirement document's stage of review. Per CJCS 6212.01B, the suspense for completing a Stage I (or 0-6 level review) ORD or C4I Support Plan review by the Joint Staff is 35 calendar days from electronic submission date to the Joint Staff (J-6) assessment tool. The Stage II (or flag level review) suspense is 21 calendar days. The Stage III suspense is 15 calendar days after Joint Requirements Oversight Council (JROC) or Milestone Decision Authority (MDA) approval, depending upon milestone under review. Based on the above timelines for staffing these requirements documents, to include required intermediary staffing by the PMs between stages, this office will recommend that DoD Components submit ORDs and C4ISPs to the Joint Staff a minimum of 180 calendar days prior to Milestone Decision Authority (MDA) program review.

-- The DCIO's office will provide appropriate representatives at the Weapon Systems Overarching Integrated Product Teams (OIPTs) to assist in the assessment of Requests for Proposals (RFPs) and contract Statements of Work (SOWs) to ensure compliance with the

JTA. These reviews will verify that standards profiles, drawn primarily from the JTA, are incorporated into the technical view of the integrated architecture, as appropriate, and that these standard profiles can be translated into clear contractual requirements for system acquisition and procurements. The DCIO's office will also work with OUSD (AT&L) to include procedures for PEOs, PMs and contractors to assess cost, schedule and performance impacts that would necessitate waivers to JTA mandated standards.

-- The DCIO's office will direct DISA (within 30 days) to update the Joint Interoperability and Engineering Organization (JIEO) and Joint Interoperability Test Command (JITC) Circular 9002, "Requirements Assessment and Interoperability Certification of C4I and AIS Equipment and Systems" to incorporate the use of the DoD JTA and mission area integrated architectures (operational, systems and technical views); and, to include processes and procedures for verifying that requirements documents (ORDs, C4ISPs) comply with DoD policy for use of the DoD JTA in system development and acquisition efforts. The DCIO's office will also direct DISA to change the name of Circular 9002 to "Requirements Assessment and Interoperability Certification of IT and NSS" and to align content of this document with the most recent policy issued (5000 and 4630 series directives, CJCSIs 3170 and 6212) by OSD and the Joint Staff. DISA will be requested to complete revision of Circular 9002 by December 31, 2001.

-- The DCIO's office will also direct DISA to include a general template in the JTA User Guide for incorporating JTA use in requirements documents (ORDs, C4ISPs). DISA will be requested to publish the revised JTA Users Guide, with the appropriate language, not later than the end of CY 2001.

Finding C. -- Requesting Waivers to Using Standards in the DoD Joint Technical Architecture. This office concurs with Finding C and its recommendations.

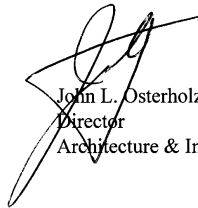
-- The DCIO's office will work with the OUSD (AT&L) and DoD Components to develop guidance for assessing cost, schedule, and performance impacts which may justify waivers to the DoD JTA. This guidance will be included in the DoD JTA Users Guide and in the Virtual JTA for use by PMs, PEOs and CAEs in determining instances where a JTA waiver request may be warranted. Language has also been included in the draft DoDI 4630.8 that requires DoD Component CAEs to establish procedures for review of waiver requests to determine instances where a waiver from JTA requirements is justified.

-- The findings of this audit report highlight the critical and necessary role the DoD Components play in implementation and use of the JTA. To emphasize the DoD Components requirement to provide direction within their respective Component regarding waivers to the DoD JTA, this office proposes the following additional recommendation be included in Finding C:

"C.2. We recommend that the Heads of DoD Components, through their respective Component Acquisition Executives, establish administrative processes

and procedures for submission, review, consideration and approval of DoD JTA waiver requests. This process should include procedures to identify and assess resulting cost, schedule, performance and potential operational impacts if a waiver to the DoD JTA is not granted. Administrative procedures for processing and approving waivers to the JTA should be included in the respective DoD Component's JTA implementation plan."

Attached are additional proposed comments to this audit report for your consideration. Should you have any questions regarding our response to this audit, please feel free to contact either Mr. Jack Zavin at (703) 607-0238 (jack.zavin@osd.mil) or Mr. Kris Strance at (703) 607-0249.



John L. Osterholz
Director
Architecture & Interoperability

Attachment
Additional Comments to Audit Report

cf:
USD(AT&L)
Joint Staff

DOD IG Audit Report on Use of the Do D Joint Technical Architecture in the Acquisition Process (Project No. D1999AE-0101.001)

#	Page	Paragraph	Component	Critical Substantive Editorial	Comments
1	1	Background, Para. 3	DCIO	Editorial	Comment: The DoD CIO Title 10 responsibilities for the prescribing of standards, which apply throughout the DoD, should be introduced early and placed in the same first page background paragraph that describes USD (AT&L) and ASD (C3I) JTA mandate direction to Program Managers. Rationale: It is important that there be recognition, up front, that it is the DoD CIO that has the statutory responsibility to ensure IT and NSS standards are prescribed throughout the DoD.
2	4	Public Law paragraph	DCIO	Editorial	Comment: Effective date of amendment to Chapter 131 of Title 10 which added Section 2223 responsibilities for CIOs is October 1, 1998 vice January 5, 1999. Rationale: Correctness

Page 2

Page 4

#	Page	Paragraph	Component	Critical Substantive Editorial	Comments
4	14	Recommendation	DCIO	Critical	Comment: Recommend the following recommendation be included in Finding A: “A.2. We recommend that the Heads of DoD Components, through their respective Component Acquisition Executives (CAEs), conduct a thorough review of existing management, review, control, accountability and waiver processes for implementation and use of the JTA within their respective components. Where existing processes and procedures can be improved, DoD Components should update respective DoD Component’s JTA implementation plans to reflect these reengineered processes. Additionally, during review and update of existing implementation plans, DoD Components should ensure that desired planning topics and content considerations delineated in the JTA implementation plan template (to be provided by the Policy Offices) are incorporated in implementation plan revisions.” Rationale: The findings of this audit report highlight the critical and necessary role the DoD Components play in implementation and use of the JTA. The management processes and procedures documented in the DoD Component’s implementation plans are key in communicating expectations and requirements for JTA implementation to PEOs and PMs. To emphasize the DoD Component’s requirement to establish JTA implementation management processes and controls, this office proposes the above language be included in Finding A.
3	15	2	DISA	Editorial	Comment: Correct to read " . . . not submitting, or were submitting the documents late, for . . . " Rationale: Correctness

#	Page	Paragraph	Component	Critical Substantive Editorial	Comments
4	27	Recommendation	DCIO	Critical	Comment: Recommend the following recommendation be included: “C.2. We recommend that the Heads of DoD Components, through their respective Component Acquisition Executives, establish administrative processes and procedures for submission, review, consideration and approval of DoD JTA waiver requests. This process should include procedures to identify and assess resulting cost, schedule, performance and potential operational impacts if a waiver to the DoD JTA is not granted. Administrative procedures for processing and approving waivers to the JTA should be included in respective the DoD Component’s JTA implementation plan.” Rationale: This audit report highlights the critical and necessary role the DoD Components play in implementation and use of the JTA. To emphasize the DoD Components requirement to provide direction within their respective Component regarding waivers to the DoD JTA, this office proposes the above language be included in Finding C.

Vice Director, Joint Staff Comments



THE JOINT STAFF
WASHINGTON, DC

Reply ZIP Code:
20318-0300

DJSM-0221-00
22 March 2001

**MEMORANDUM FOR THE INSPECTOR GENERAL OF THE DEPARTMENT OF
DEFENSE**

Subject: Audit Report on the Use of the DOD Joint Technical Architecture in
the Acquisition Process (Project No. D1999AE-0101.001)

1. Thank you for the opportunity to review the Office of the Inspector General draft report.¹ To conform to the requirements of DOD Directive 7650.3, we concur in the report subject to the incorporation of the enclosed recommended changes. Part 1 contains general comments and Part 2 consists of specific comments regarding the draft report.

2. The Joint Staff point of contact is Mr. Paul C. Fang, J-6I, (703) 695-6276, DSN 225-6276, e-mail: fangpc@js.pentagon.mil.

Approved & Secured with Approval
by: GARRY R. TREXLER, 22 March 2001, 17:42:00

GARRY R. TREXLER
Major General, USAF
Vice Director, Joint Staff

Enclosure

Reference:

¹ Deputy Director, AMD/OIG memorandum, 19 January 2001, "Audit Report on the Use of the DoD Joint Technical Architecture in the Acquisition Process (Project No. D1999AE-0101.001)"

ENCLOSURE

PROPOSED COMMENTS ON OIG DRAFT AUDIT REPORT ON THE USE OF THE JOINT TECHNICAL ARCHITECTURE IN THE ACQUISITION PROCESS

1. General Comments

a. The draft report incorrectly states that Mission Needs Statement Operational Requirements Document (MNS/ORD) are under USD (AT&L) and ASD (C3I). DOD has 3 systems governing all programs/systems. They are: Requirements Generation System (RGS) (CJCSI 3170.01); DOD 5000 series, "Defense Acquisition System (DAS)," and Planning, Programming, and Budgeting System (PPBS) (DODD 7045.14) and DODI 7045.7, "Implementation of the PPBS." The Chairman of the Joint Chiefs of Staff is responsible for CJCSI 3170.0, which governs the DOD requirements generation process. The USD (AT&L) is responsible for the DOD 5000 series, which governs the DOD acquisition management process. The USD(C) is responsible for the DODD 7045 series, which governs the DOD resource management process. (A detailed list of organizations that participated in the assessment of MNS/ORD/CRD/C4ISP is identified at Page D-A-3 of CJCSI 6212.01, 8 May 2000.)

b. The draft report should reference the most recent language incorporated in DOD 5000.2-R, 4 January 2001, sections 2.7.2, 2.7.2.2, 5.2.11, 5.2.11.1, 5.2.11.2, 6.3, and 6.4 which, mandates Joint Technical Architecture (JTA) for achieving interoperability in all new program/system and upgrades. For weapons systems/programs to comply with JTA, the program manager (PM) must implement JTA via the C4I Support Plans (C4ISPs) contained in section 6.4. In section 6.4, weapons systems are excluded from information technology (IT) definition. The draft report should also reference the 15 March 1996 version of DOD 5000.2-R, section 4.3.9, mandates that JTA compliance. Weapons systems/programs comply with JTA as outlined in the C4ISPs as codified in section 2.2.1.

c. The draft report should reference the DODI 4120.24, "Defense Standardization Program (DSP)," or DOD 4120.24-M, "DSP Policies and Procedures," March 2000. In the 4120.24-M, C3.2 JTA and open systems are mandated as mandatory standardization considerations.

d. The draft report should reference the Joint Staff Military Communications-Electronic Board (MCEB) Interoperability Policy and Test Panel (IPTP) Charter, 3 November 2000. The IPTP is the DOD primary forum to guide DISA/JITC to conduct JTA prescribed standards and interoperability testing between NSS and ITS.

e. The draft report should reference the DOT&E, USD (AT&L), ASD (C3I), and DJS co-signed memorandum, "Promulgation of DOD Policy for Assessment, Test, and Evaluation of Information Technology System

Enclosure

Interoperability," 4 December 2000." This memorandum as codified in the new DOD 5000.2-R, 4 January 2001, section 3.2.3.2, "T&E Guidelines," outlines a "Process for Interoperability Review and Assessment" and procedures for all acquisition offices. Program managers or cognizant officials (PMs/COs) on the DOT&E's watch list which require corrective actions to address interoperability deficiencies in order to be removed from the interoperability watch list. This policy has been incorporated in the new DOD 5000.2-R, section 3.2.3.2, "T&E Guidelines."

f. The draft report should use the most current Joint Technical Architecture Development Group (JTADG) management plan. The plan defines the responsibilities for Architecture Coordination Counsel (ACC), Technical Architecture Steering Group (TASG), JTADG, subgroups, DISA, and DOD components in the development and publication of the DOD JTA. The Joint Staff recommends that OIG use the Joint Staff's revised Appendix D at comments 2j and 2ii.

g. The draft report identifies JTA as the "information technology architecture" (ITA) as mandated by Clinger-Cohen Act of 1996. The JTA is no more than a DOD "Joint Interoperability Technical Standards Document."

h. The draft report treats the JTA Implementation Plan(s) as "JTA implementation." Implementation of the JTA is incorporated in DOD 5000.2-R. Specifically, PMs must specify and tailor all applicable JTA standards in the program/system for which he/she is responsible in the acquisition process. The audit should review PMs documents to see if standards are specified.

i. The draft report should acknowledge that the JTA prescribes a minimum set of information technology standards consisting of military-unique, federal-unique, and consensus commercial standards. Additional standards and technologies may be required for developing ITSs or NSSs.

j. The report is titled "Use of JTA in DOD Acquisition Process," but its actual focus was on JTA implementation planning. If the intent is to focus on the JTA and the acquisition process, the report should compare the 39 weapons systems programs/systems currently in their acquisition phases, the varying application of the JTA, and the DODI 5000.2-R procedures.

k. The IG draft report does not acknowledge that the PM, as outlined in DODI 5000.2-R, Appendix E, is required to develop a C4I support plan (C4ISP) for all ITS and NSS, regardless of acquisition category (ACAT). The C4ISP documents the C4I support needed to respond to an ORD by describing and evaluating the information and external C4I support that the proposed system needs during development, testing, and operational deployment. The PM is required to document a technical architecture profile (TV-1) that describes which specific standards (including JTA standards) will be used for a specified

C4I interface. The IG should review the review process at the various levels to determine if required oversight is being provided for ACAT II and III programs where most interoperability problems manifest themselves.

l. The draft report should differentiate OMB Circular A-119 from National Security Systems (NSS)-related standards.

m. The draft report should acknowledge that the Clinger-Cohen Act of 1996 is not applicable to NSS procurement.

n. To make the audit report a more useful document to the Department of Defense, we recommend the following actions:

(1) Analyze the cost and documented value of the JTA and items contained in JTA implementation plans to determine if the current strategy should be continued. The JTA mandated language has been extensively incorporated in the new DOD 5000.2-R for each ITS and NSS program/system to implement.

(2) To reflect the title of the audit, refocus the audit on how the JTA supports the DOD 5000.2-R and comparable Service processes. Special consideration should be given to the contents of the request for proposal (RFP), system specification (SS), system architecture specification (SAS), system architecture (SA), and on whether standards prescribed by DOD components in the JTA were tailored and specified in these documents. (Note: All new MNS/ORD/CRD contain JTA-compliance language.) DOD program managers are responsible for selecting relevant individual standards when developing the RFP, SS, SAS, and SA.

(3) The open-systems approach and design are entirely different topics than the JTA issue and should be dealt with in a separate audit report, such as was done with the DOD 5000.2-R.

Page i

2. Specific Comments

a. Executive Summary page, last bullet. Change as follows:

"• Six of the 17 DoD Components that submitted JTA implementation plans to the Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)) and Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) (ASD (C3I)) for JTA Version 1.0"

REASON: Accuracy.

Page i

b. Page ii, Summary of Recommendations. 1st through 5th lines. Change as follows:

"We recommend that the Under Secretary of Defense ~~for~~ (Acquisition, Technology, and Logistics) (USD (AT&L)); the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) (ASD (C3I)), and the Joint Chiefs of Staff Director for Command, Control, Communications, and Computers Systems (Director, C4 Systems) (or DJ6), the Joint Staff, as ~~co-~~ co-Tri-chairs of the Architecture Coordination Council, (ACC) (together called the "ACC Tri-chairs"), ..."

REASON: Brevity. The titles, USD (AT&L), ASD (C3I), and DJ6, ACC Tri-chair can be used in the text to reduce spaces and increase readability. Change these titles throughout the report.

Page ii

c. Page ii, Summary Recommendations. Change as follows:

"We recommend that USD (AT&L), ASD (C3I), and DJ6, as Tri-chairs of the Architecture Coordination Council (ACC), ~~establish an office of primary responsibility to identify the DoD Components that should be submitting plans for implementing the standards contained in the JTA; provide DoD Components with guidance templates for preparing JTA implementation plans; and establish procedures and requirements for reviewing, updating, and reporting on progress in implementing JTA plans.~~ develop the needed ACC charter that governs the DOD IT and NSS architectures development; revise the DOD 5000.2-R to include a set of procedures on how ACC should function within the DOD 5000.2-R that program managers can follow to specify the applicable JTA standards in his/her program Request for proposal (RFP) to achieve interoperability among systems."

REASON: DOD components do not need another organization to review those implementation plans. What is required is the formalization of the ACC through a written charter that outlines duties, responsibilities, and reporting requirements. Additionally, implementation plans are now incorporated into the basic requirements generated acquisition processes, which mandate the use of the DOD JTA. To implement the JTA, the PM must tailor relevant JTA

standards and all other standards, technology, and COTS not addressed in the JTA in the RFP for potential contractors to bid and cost.

d. Page ii, Summary of Recommendations, 9th through 14th lines.
Change as follows:

"We also recommend that the USD(AT&L) and ASD(C3I), coordinate to ~~establish timeframes for DoD Components to forward draft mission need statements (MNSs) and operational requirements documents (ORDs) to DISA for review to determine the adequacy of the DoD Component's planned use of the DOD JTA, supported by DISA, lead DoD-wide review of all ACAT's C4I Support Plans and advise USD (AT&L) on whether an acquisition program/system meet C4ISP requirements, as intended by DOD 5000.2-R."~~

REASON: IAW DOD 5000.2-R, Appendix E, ASD (C3I) is required to lead the DOD-wide review of: (1) All C4ISP for ACAT I (1D, 1C, IAM, and IAC) programs; (2) All capstone C4ISP; and (3) C4ISP for other acquisition programs in which ASD (C3I) has indicated a special interest, but they are not currently reviewed by ASD (C3I). Current procedures adequately address the OIG concern for review of MNSs, ORDs, and CRDs. MNS, ORDs, and CRDs certification are the responsibility of the Chairman of the Joint Chiefs of Staff, and the procedures are documented in CJCSI 3170.01 and CJCSI 6212.01.

e. Page ii, Summary of Recommendations, 14th through 17th lines. "... We recommend that USD (AT&L) require the review of requests for proposals (RFPs) and contract statements of work (SOW) to verify that . . . requirements."

COMMENT: USD (AT&L) only reviews ACAT I and ID programs, while Component Acquisition Executives (CAEs) review the rest of ACATs. PMs need to tailor relevant JTA standards into his/her program at Section C of the program's Request for Proposal (RFP). Section 2.5, "xxx Current External Interfaces," C7 "Compliance with Standards," and C10, ... "External Connections" are all relevant paragraphs for achieving interoperability between systems. Without specifying individual standards in the RFP and SOW, it would be too costly for the contractor to choose and pick standards from the JTA. The JTA contains nearly 500 standards. PM and his/her supporting contractor, such as MITRE, should specify JTA and other relevant standards in the RFP and SOW, based on their analysis of interface requirements.

f. Page ii, Summary of Recommendations, 17th through 24th lines. "... Finally, we recommend that the ASD (C3I) direct DISA to update the policy to address the use of the JTA, provide guidance . . . requirements."

COMMENT: JIEO Circular 9002 is internal to DISA and spells out how DISA assists the Joint Staff in the review MNSs, ORDs, and CRDs for NSS and ITS acquisition programs/systems. IAW DODD 5105.19 (F.2 and F3), DODD

Page ii

4630.5, CJCSI 3170.01, and CJCSI 6212.01, DISA reports directly to CJCS, through J-6, in the review of all categories of MNS/ORD/CRD.

g. Page ii, Summary of Recommendations, 2nd sentence.

COMMENT: Specific time requirements are already delineated in the review process of requirements documents before milestone approval.

Page ii

h. Page ii, Management Comments. Change as follows:

"Management Comments. We request that USD (AT&L), ASD (C3I), and DJ6 the Undersecretary of Defense for Acquisition, Technology, and Logistics; the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); and the Joint Chiefs of Staff Director for Command, Control, Communications and Computers comment on this draft report by March 19, 2001."

REASON: Accuracy and Clarity. See also specific comment 2.a above.

Page 1

i. Page 1, Background, last paragraph. Delete, and substitute the following:

a. "In JTA version 1.0. JTA 1.0 was a collaborated effort and developed by members of the Standards Selection and Conflict Resolution Working Group (SS/CR WG). On 22 August 1996, USD (AT&L) and ASD (C3I) mandated use of program managers use JTA version 1.0 for all DoD command, control, communications, and intelligence (C4I) systems. JTA 1.0 specifies a set of performance-based, primarily commercial, information processing, transfer, content, format and security standards. The JTA applies to all C4I systems and interfaces of other key assets (e.g., weapons systems, sensors, office automation systems, etc.) with C4I systems. The JTA 1.0 also applies to C4I Advanced Technology Demonstrations and other activities that lead directly to the fielding of operational C4I capabilities. This memorandum is pre-ACC.

b. "In The DoD Architecture Coordination Council (ACC) establishment. 14 January 1997, the ACC was established via ACC Tri-chairs memorandum. The memo stated: "The Defense Science Board and major studies have concluded that one of the key means for ensuring interoperability and cost effective military systems is to establish comprehensive architectural guidance for all of DoD. ... The ACC Tri-chairs formed the DOD Architecture Coordination Council (ACC) to establish comprehensive architecture guidance for DoD and to determine how we should rationalize and synchronize ongoing architecture work." An ACC charter was not published. JTA 1.0 permanently replaced the Technical Architecture for Information Management (TAFIM) document mandated in DOD 5000.2-R, section 4.3.9, "interoperability." The mandate must be approved by DAPWG and DAPSG for USD (AT&L), ASD (C3I), and DOT&E signatures to the cover memorandum of DOD 5000.2-R.

c. **"C4ISR Architecture Framework publications.** On 7 June 1996, DJ6 and PDASD (C3I) co-signed memorandum to implement C4ISR developed "C4ISR Architecture Framework version 1.0. On 23 February 1998, ACC Tri-chairs issued the memorandum, "Strategic Direction for a DoD Architecture Framework to implement C4ISR Architecture Framework, Version 2.0, dated 18 December 1997, developed by C4ISR Architecture Working Group (AWG) is currently still valid.

d. **"JTA Version 2.0.** JTA 2.0 is a coordinated effort developed by members of the Joint Technical Architecture Development Group (JTADG), supported by subgroups under the JTADG. On 26 May 1998, the Technical Architecture Steering Group (TASG) (a subgroup under the ACC) expanded the JTA version 2.0 to include four domain annexes, and planned for emerging standards. On 30 November 1998, the ACC Tri-chairs issued JTA version 2.0 implementation memorandum for the new JTA scope. This memo updates the portion of Paragraph 4.3.9 of DOD 5000.2-R (with Change 3) covering the JTA applicability and waiver process, pending a formal revision of DOD 5000.2-R and other DoD Directives and Instructions. The 15 March 1996 version of the DOD 5000.2-R and all subsequent changes (total of 4 changes) only mandates JTA at section 4.3.9, "interoperability". The current DoD 5000.2-R, 4 January 2001, has changed the JTA mandates to 5000.2-R, Sections 2.7.2; 2.7.2.1; 5.2.11; 5.2.11.1; 5.2.11.2; 6.3; 6.4, and Appendix E. JTA 2.0 mandated each DoD Component to submit JTA implementation plan to USD (AT&L) and ASD (C3I). The memorandum requested the Director, Joint Staff (DJS) to provide copies to all Combatant Commands. DJSM-77-99, 26 January 1999, provided clear guidance for each COCOM to develop implementation plans.

e. **"1998-1999 Section 912(c) studies.** Under the Steering Group co-chaired by the USD(AT&L) and VCJCS, "Requirements and Acquisition Study Working Group" recommended four requirements and acquisition initiatives for DOD 5000.2-R and CJCSI 3170.01, "Requirements Generation System," 10 August 1999, incorporated I-KPP, and assigned Director, J-6, Joint Staff responsible for Interoperability Certification. J-6 certify MNS, ORDs, and CRDs, regardless of ACAT level, for conformance with joint C4 policy and doctrine, technical architectural integrity, and interoperability standards. J-6 will review and comment on I-KPP and coordinate agencies IAW CJCSI 6212.01, DODD 4630.5, and DODI 4630.8. For details see: ([http://www.acq.osd.mil/at/poc.htm/Section912\(c\)](http://www.acq.osd.mil/at/poc.htm/Section912(c)))

f. **"JTA Version 3.0.** JTA 3.0 is also a coordinated effort and developed by members of the JTADG and its subgroups. On 29 November 1999, ACC Tri-chairs signed the implementation memorandum. Due to the fact that there is no value added to produce additional JTA implementation plans. The updates will be at the discretion of each DOD Component.

Page 3

"JTA Restructuring. Due to numerous comments on the usefulness, JTADG formed JTA Restructuring Working Group in early 2000. The WG was disbanded Jan 01."

REASON: Accuracy and facts on background all relevant to the JTA audits.

j. Page 3, "Management of the JTA", 1st through 8th lines. Change as follows:

~~"The Offices of the Under Secretary of Defense for [Acquisition, Technology, and Logistics) (USD (AT&L)), the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)/DoD Chief Information Officer (ASD (C3I)/DOD CIO), and the Joint Chiefs of Staff-Director for C4 Systems (DJ6), the Joint Staff (the Policy-Offices ACC Tri-chairs) jointly manage the JTA- co-chair the ACC. The Policy-Office exercise management oversight and configuration management of the JTA through a hierarchy of management councils and groups made up of representatives from respective offices and from the DoD Components. The Major JTA-related functions of ACC and its Subordinate Groups are documented in Appendix D."~~

REASON: Accuracy and brevity.

Page 3

k. Page 3, "Management of the JTA," 8th through 15th lines. Change to read:

~~"The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)/as the DoD Chief Information Officer (ASD (C3I)/DoD CIO) for DoD, shall, during planning and coordination of funding (Title 10 USC, Chapter 131, Sec. 2223), ensure the interoperability of ITS and NSS throughout DoD; and ensure that ITS and NSS standards that will apply throughout DoD as prescribed (by DoD, e.g., DoD JTA); his additional responsibilities for pre- and post-acquisition interoperability of information technology and national security systems that are outside the responsibilities of the Under Secretary of Defense for Acquisition, Technology, and Logistics. Appendix D provides details major functions on the roles and responsibilities of ACC, TASG, JTADG, Subgroups, and DoD Components (including DISA) for managing the JTA as well as the overall information technology responsibilities of the Chief Information Officer."~~

REASON: DoD Components, represented by members of JTADG, select and prescribe standards creating the JTA, not DOD CIO. Development of individual MIL-STDs are under the responsibility of USD (AT&L), who have oversight of DOD Instruction 4120.24 and DOD 4120.24-M.

Page 3

l. Page 3, Management of the JTA. second paragraph. Delete.

REASON: Accuracy. This paragraph is incorrectly stated. Section 5.2.11, 04 Jan 01 version of DOD 5000.2-R, provides clear waiver language.

m. Page 3, Structure of the JTA. Delete, and substitute the following:

"The JTA consists of two main parts: the JTA Core, and the JTA annexes. The JTA Core contains the minimum set of JTA elements applicable to all DoD systems to support interoperability. The JTA annexes contain additional JTA elements applicable to specific functional domains (families of systems). These elements are needed to ensure interoperability of systems within each domain but may be inappropriate for systems in other domains. The current version of the JTA includes annexes for the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) domain; the Combat Support domain; the Modeling and Simulation domain; and the Weapon Systems domain. Where subsets of an application domain (sub-domain) have special interoperability requirements, the JTA includes subdomain annexes containing JTA elements applicable to systems within that subdomain. The intention is that a system within a specific JTA-subdomain adopts the JTA elements contained in the relevant subdomain annex, the JTA elements contained in the parent domain annex, and the JTA elements contained in the JTA Core.

Additional standards (and technologies) may be required to meet system requirements. This version of the DoD JTA mandates the minimum set of standards and guideline for the acquisition of all DoD systems that produce, use, or exchange information."

REASON: Accuracy and correctness.

n. Page 4, Public Law and Government Policy

COMMENT. This paragraph is incorrectly stated and should be rewritten. The DOD JTA development was not and is not under the responsibility of DOD CIO. Public Law 104-113 governs the unclassified IT standards codified in OMB Circular A-130, OMB Circular A-119, and Title 15, USC, Chapter 7, Sec. 278-3g as amended. For ITS, DOD needs to follow section 1421(d) of title 40, section 278g-3 of title 15, and section 1441 of title 40. Section 278g-3 excluded NSS standards. For national security systems (NSS) standards implemented by chapter 145 of title 10, and are under USD(AT&L) responsibility and codified under DOD 4120.24, "Defense Standardization Program (DSP)," and DOD 4120.24-M. The JTA consisted of about 20% of MIL-STDs for NSS, especially for C4I Systems. In addition to NSS-related MIL-STDs, DOD 4120.24 also implements OMB Circular A-119. Due to the issuance of A-119, NIST has cancelled more than 160 FIPS.

Page 4

Page 4

Page 4

o. Page 4, Government Policy.

COMMENT. This paragraph is stated incorrectly and requires rewrite. OMB Circular A-119 is targeted for ITS and only applies to NSS to the extent practicable.

Page 5

p. Page 4, Survey Questionnaires.

COMMENT. To implement JTA, the PM must tailor relevant standards from the JTA and other standards and technology into his RFP and systems specification. There are 500 plus standards contained in the JTA; the PM must identify individual standards for contractor compliance. Otherwise, the system will contain many useless standard-based products.

Page 5

q. Page 5, Objectives. Delete "planning" from the objectives.

REASON: Clarity. The objectives do not match with the title of the report, "Use of JTA in DoD Acquisition Process." OIG report No. 98-023, "Implementation of the DOD Joint Technical Architecture," 18 November 1997 already covered the planning (implementation plan). Furthermore, JTA planning can be referred to JTA version planning. In this case, JTADG and its subgroups followed JTA schedule and produced 2.0, 3.0, 3.1, and draft 4.0. The IG real intent should be the "JTA Implementation Plans" not the "JTA version planning". DoD components' JTA implementation plans submitted to USD (AT&L) and ASD (C3I) were all received without a single comment. ASD(C3I) never stated that their delivery of the JTA IP is insufficient. The OIG's assessment of JTA implementation based on submitted "JTA Implementation Plans": "the plans did not fully comply with guidance from the Policy Offices and did not show consistent approach in implementing the standards" is inaccurate and unfair. The draft report should assess ITS and NSS program RFP to see if relevant JTA-standards and other standards are specified in section C of the RFP and systems architecture.

Pages 6-18

r. Finding A. Joint Technical Architecture Implementation Plans, Pages 6-14

COMMENT. This finding does not match the Report title. All DOD Components submitted JTA Implementation Plans that were accepted by ASD (C3I) and USD (AT&L) without a single rejection. This section should be deleted from the draft report.

Page 6

s. Page 6, first paragraph, 2d line, Change "Policy Offices" to "ASD (C3I)/DOD CIO."

REASON: Accuracy. Only ASD (C3I) issued the memorandum "Clarification on the Content of DoD Components' Joint Technical Architecture

(JTA) Implementation Plans," 4 October 1996, and USD (AT&L) and DJ6 were not coordinated with during the process.

t. Page 6, first paragraph, 11th line. Replace "Policy Offices" with "ACC Tri-chairs."

Page 6

REASON: Accuracy.

u. Page 6, first 3 bullets. Delete.

Page 6

REASON: Clarity. (1) DOD is a finite organization. The "universe of DoD Components" list is unnecessary for implementing JTA. DoD Acquisition processes (DOD 5000 series) are program/system based. PMs tailor and specify applicable standards based on the JTA standards into the RFP for the offeror in costing on the program/system. (2) The plan is not the implementation of JTA. JTA mandate language already codified in the DOD 5000.2-R sections as identified in 1b above. (3) Uniform methodology to measure and evaluate implementation progress and success is unnecessary. (4) There are many measures and procedures in place in DOD. For example, DOD 5000.2-R language; CJCSI 6212.01, MCEB Interoperability Policy and Test Panel (IPTP) Charter, 3 Non 00, and USD (AT&L), ASD (C3I), DOT&E, and DJ6 co-signatures on Watch List (a copy of the memo provided to OIG) to name a few to ensure "interoperability" if all IT and NSS acquisition. Under the IPTP, there is "Program and System under Interoperability Watch" for non-interoperable programs/systems during acquisition.

v. Page 6, second paragraph, fourth line. Replace "Policy Offices" with "ACC Tri-chairs".

Page 6

REASON: Accuracy.

w. Page 6, second paragraph

Page 6

Comment: The draft audit report does not recognize that embedded weapon systems and tactical communications systems are excluded by DOD 5000 series. Weapon systems interoperability requirements are implemented by DoD 5000.2-R, Sec 6.4, "C4I Support," and Appendix E, "C4I Support Plan Mandatory Procedures and Format".

x. Page 6, "Policy for JTA Implementation Plans," line 1. Replace "Policy Offices" with "ACC Tri-chairs."

Page 6

REASON: Accuracy.

Page 6

y. Page 6, "Policy for JTA Implementation Plans," second paragraph.
Replace "Policy Offices" with "USD (AT&L) and ASD (C3I)".

REASON: Accuracy and Fact.

Pages 6-7

z. Page 6-7, "Implementation of the DoD Technical Architecture," August 22, 1996. Delete, and substitute to read as follows:

"Implementation of the DoD Joint Technical Architecture," August 22, 1996.
This memorandum, co-signed by USD(AT&L) and ASD(C3I), key points stated:

- "The JTA is the result of collaboration among the Services, Joint Staff, (Combatant Commands), USD (AT&L), ASD (C3I), DISA, DIA, (NSA, NIMA, DLA) and other elements of the Intelligence Community...
- "Effective immediately, the JTA (Version 1.0) is mandatory for all emerging systems and systems upgrades. The JTA applies to all C4I systems and the interfaces of other key assets (e.g., weapons systems, sensors, office automation systems, etc.) with C4I systems. . . .
- "The Services, Agencies, and other Components are responsible for the implementation of the JTA (including enforcement, budgeting and determining the pace of systems upgrade). All emerging C4I systems and C4I systems upgrade are to comply with the JTA.
- "Waivers may be granted only by Services, Agency and other Component Acquisition Executives, with the concurrence of the ASD (C3I) and USD (A&T). In this context, non-response after two weeks from the date of receipt by OSD constitutes concurrence.
- "Each Services, DoD Agency, and applicable other Component is required to provide a plan outlining its approach to implementing the JTA to ASD (C3I) and USD (A&T) within 90 days.
- "The JTA is a living document that will evolve as technology and marketplaces change. Within 90 days, the USD(A&T) and ASD(C3I), with the support of the Services and Agencies, will develop a proposal for upgrading, maintaining, and configuration managing the JTA. ..
- "For applicable systems, the JTA replaces the standards guidance in the Technical Architecture framework for Information Management (TAFIM) currently cited in the DOD Regulation 5000.2-R. (paragraph 4.3.9)."

~~addresses implementation of the initial version of the JTA, now known as Version 1.0. The Policy Offices required all DoD Components to~~

provide a plan outlining their approach for implementing the standards contained in the JTA to the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) within 90 days. In their implementation plans, DoD Components were to specify that:

- Component use of the JTA was mandatory for all emerging command, control, communication, computer, and intelligence systems; for upgrades to these systems; and for the interfaces of these systems to other key assets, such as weapons and office automation systems.
- Components were to migrate existing command, control, communication, computer, and intelligence systems to the applicable JTA standards, while considering cost, schedule and performance impacts.

This memorandum further states that DoD Components were responsible for implementing the standards contained in the JTA, including enforcing, budgeting, and determining the pace of system upgrades."

REASON: Accuracy.

aa. Page 7, DoD Joint Technical Architecture (JTA) Version 2.0, November 30, 1998. Delete, and substitute the following:

"ACC Tri-chairs memorandum, "DoD Joint Technical Architecture (JTA Version 2.0," November 30, 1998. The scope of the JTA 2.0, broadened by JTADG with input from member organizations, included the JTA Core and four JTA domain annexes. Recommended by TASG, the Policy Offices ACC Tri-chairs endorsed the expanded JTA 2.0. The DOD 5000.2-R, Change 4, section 4.3.9 language has been modified, until 23 Oct 2000 version. The Joint Staff DJSM-77-99 provided "Guidance for Combatant Commands to prepare JTA implementation Plans."

REASON: Accuracy and relevancy.

bb. Page 7, "DOD Joint Technical Architecture (JTA) Version 3.0," November 29, 1999. Delete, and substitute the following:

"ACC Tri-chairs memorandum, "DOD Joint Technical Architecture (JTA) Version 3.0," November 29, 1999. In this memorandum, the ACC Tri-chairs makes JTA Version effective for use immediately superseding Version 2.0. However, paragraphs 2, 3, and 4 of the Version 2.0 cover memorandum continue to apply. Each DoD Component and cognizant OSD authority is required to have on file a current or new implementation plan with USD(AT&L) and the ASD(C3I)/DoD CIO."

Page 7

Page 7

Final Report
Reference

Page 7-8

REASON: Accuracy.

cc. Pages 7-8, DoD Component Implementation Plans.

COMMENT: The Draft Report states DOD JTA implementation plans showed that the Components did not fully comply with ASD (C3I) direction regarding submission and content of plans is incorrect. JTA "implementation" is governed DoD 5000.2-R.

REASON: Accuracy.

Page 14

dd. Pages 14, OIG Finding A. "Joint Technical Architecture Implementation Plans" Recommendations.

(1) Page 14, OIG Recommendation A.1.

COMMENT: Nonconcur. These JTA implementation memorandums all address DoD components as defined in DODD 5025.1. Those components having major acquisition involvement have submitted their JTA implementation plans. JTA "implementation" is governed DoD 5000.2-R.

Page 16

(2) Page 14, OIG Recommendation A.2

COMMENT: Nonconcur. Current DOD procedures adequately address the concern. Acquisition related language mandating the use of JTA is already contained in the DOD 5000.2-R, 4 Jan 01, Sections: 2.7.2, "Interoperability"; 5.2.11, "Interoperability"; 5.2.11.1, "DoD Joint Technical Architecture (JTA)"; 5.2.11.2, "Standardization Considerations," 6.3, "Information Interoperability;" 6.4, "C4I Support"; and Appendix E, E-6, "C4I Support Plan f or Program Title," Section 3.5, "Technical Architecture." These sections mandate DOD JTA. Additionally, DJSM-77-99, "Guidance for DOD Joint Technical Architecture Version 2.0 Implementation Plans," 26 January 1999, provided further instructions to Combatants Commands and the Joint Staff to follow. During October 2000, this memo and additional comments on OIG's Discussion Draft were provided to IG POC. The draft report should have reviewed and provided comment on these policies and procedures documents and recommended changes to each topic."

Page 17

(3) Page 14, OIG Recommendation A.3

COMMENT: Non-concur. JTA version 3.0 cover memo mandates implementation plan submission and identifies conditions under which CINCs/Services/Agencies would not need to submit JTA implementation plans.

Page 18

(4) Page 14, OIG Recommendation A.4.

COMMENT: Non-concur. Duplicative effort since JTA implementation requirements are documented in different sections of the DOD 5000.2-R as identified in 2.bb (2) above.

Finding B. Use of JTA Requirements in the Weapon System Acquisition Documentation.

ee. Page 16, Requirements in Key Acquisition Planning Documents.

COMMENT: Non-concur. The statement that program managers did not routinely insert JTA requirements in Table 3 requirement documents (MNS and ORDs were miss-labeled as Acquisition Documents) is misleading. The program manager does not write requirements documents. This is the responsibility of the sponsoring CINC, Service, or Agency as described by DOD 5000 Series, CJCSI 3170.01A, and CJCSI 6212.01B. An audit of IG selected requirements documents demonstrated that all documents reviewed by the Joint Staff and DISA since 1998 mandated JTA compliance for those programs that were required to comply with the JTA. Requirement documents that did not mandate JTA compliance received non-concurrence throughout the review process. We agree that regardless of whether a pre-1998 requirements document was updated to mandate JTA compliance, the program manager was required to acquire systems that were JTA compliant where technically and fiscally feasible.

ff. Pages 23, OIG Finding B.

(1) Page 23, OIG Recommendation B.1.

COMMENT: Non-concur. The requirements documents review process is the responsibility of the Chairman Joint Chiefs of Staff (CJCS). DISA already reviews requirements documents prior to milestone approval as required by the review and certification process described by DOD 5000 Series, CJCSI 3170.01A, and CJCSI 6212.01B. Section C of the Request for Proposal (RFP) addresses interfaces and standards compliance and, more importantly, the PM must tailor relevant JTA standards for his/her program/system. All relevant JTA standards must be fully identified in the NSS and ITS systems specific before Phase C milestone decision review.

(2) Page 23, OIG Recommendation B.2, "B.2. USD (AT&L) through the overarching integrated product teams (OIPT), review requests for proposal (RFP) and contract statements of work (SOW) to verify that requirements documents are translated into clear contractual requirements with the additional requirement for the contractor to identify instances where cost, schedule, or performance impacts may preclude use of Joint Technical Architecture mandated standards."

Page 20

Page 28

Page 28

Page 30

Page 31

COMMENT: Non-concur. Procedures for reviewing RFP and SOW are well documented within DOD Acquisition Functional organizations. The requirement to tailor applicable JTA standards in the RFP sections is essential. Placing another organization into the review process will further slowdown the current acquisition process.

(3) Page 23, IG recommendation B.3.a

Page 31

COMMENT: Nonconcur. JITC Circular 9002 is an internal document of DISA/JIEO/JITC. CJCSI 6212.01 mandates that JITC test standards-based products for compliance with relevant JTA standards if applicable, and interoperability with other relevant NSS and ITS. The Joint Staff through the MCEB and its Interoperability Policy and Test Panel (IPTP) are chartered to address these interoperability compliance. A copy of the IPTP Charter was provided to OIG.

(b) Page 23, OIG Recommendation B.3.b. Change as follows, and move to B.2.

(1) "B.3.b. USD (AT&L) ASD (C3I) include the "DOD JTA User Guide" the suggested general template to assist ~~warfighters~~ and program managers in implementing DOD JTA in the RFP ~~MNSs and ORDs.~~"

REASON: Accuracy. JTA User Guide is needed by program managers for RFP development to select applicable standards from the JTA for contractor to implement.

Page 31

(c) Page 23, OIG Recommendation B.3. Add the following new subparagraph B.3.c:

"c. (ASD (C3I)) Review and approve all C4I Support Plans (C4ISPs) to ensure that relevant-JTA standards are specified in the proposed Technical Architecture Profile (TV-1) which describes which specific standards the program manager intends to use for a specified C4I interface."

REASON: Clarity.

Page 37

gg. Page 27, OIG Recommendation C.

COMMENT: Nonconcur. Waiver guidance is addressed in 4 Jan 2001 version of DOD 5000.2-R, section 5.2.11.1.

Pages 42-45

hh. Appendix B. Definitions of Terms Relating to the JTA (pages 31-33).
Add the following terms:

Automated Information System (AIS). An acquisition program that acquires Information Technology (IT), except IT that:

1. Involves equipment that is an integral part of a weapon or weapons system; or

2. Is a tactical communications system.

(DODI 5000.2, 4 Jan 01 version)

Weapon System. An item or set of items that can be used directly by the warfighter to carry out combat or combat support missions to include tactical communications systems. (DODI 5000.2, 4 Jan 01 version)

Milestone Decision Authority (MDA). The individual designated in accordance with criteria established by the USD (AT&L), or by the ASD (C3I) for AIS acquisition programs, to approve entry of an acquisition program into the next phase of the acquisition process. (DODI 5000.2)

Program manager (PM). The individual designated in accordance with criteria established by the appropriate Component Acquisition Executive (CAE) to manage an acquisition program and who is appropriately certified under the provisions of the Defense Acquisition Workforce Improvement Act (DAWIA) (section 1734 of title 10 USC). A PM has no other command or staff responsibilities within the Component. (DODI 5000.2, 4 Jan 01)

(NOTE: IAW DODD 5134.1, "USD (AT&L) Charter," 21 Apr 2000, "4.1.4. The Secretaries of the Military Departments and the Heads of other DoD Components shall consult the USD (AT&L) before assigning an officer or employee to serve as a Program Executive Officer or a Program Manager or reassigning an officer or employee so serving, for any program subject to review by the DAB.")

REASON: Consistent with directives cited.

ii. Appendix D. Responsibilities for Managing the JTA. (Pages 38-41).
Delete Appendix D in its entirety and replace with the following:

"The ACC performs the following major JTA-related functions:

- Approves changes in scope and applicability of the JTA.
- Is the final approving authority for each version of the JTA.
- Resolves substantive issues raised from the TASG level.
- Signs the implementation letter (memorandum).

Pages 50-52

"The Technical Architecture Steering Group (TASG) performs the following major functions:

- Determines and recommends changes in scope and applicability of the JTA to the ACC.
- Provides broad guidance and direction to the JTADG.
- Appoints members to the JTADG.
- Resolves substantive issues raised from the JTADG level.
- Votes to approve the JTA and submits it to the ACC tri-chairs for approval and signature.

"The Joint Technical Architecture Development Group (JTADG) performs the following major functions:

- Configuration-manages the JTA.
- Provides recommendations on the JTA to the TASG.
- Makes "minor" changes (based on consensus of member ship) between major releases of the JTA.
- Forms ad hoc groups to address specific technical or non-technical issues.
- Raises unresolved substantive issues to the TASG.
- Manages the review process.
- Refers changes requests to appropriate subgroup(s) for evaluation.
- Resolves change requests raised from the subgroup level.

"The JTA subgroups support the JTADG and perform the following major functions:

- Provide a forum for the evaluation of changes requests.
- Provide recommendations to the JTA DG as required.
- Present unresolved changes requests to the JTADG.
- Consist of participants proposed and approved by the combatant commands, Services, and agencies.

- Receive their guidance in a document entitled "Subgroup Leader Guide."

- Provide major rewrites of sections, when required.

"Defense Information Systems Agency (DISA) performs the following major JTA-related functions:

- Provides resources to chair and serve as the Secretariat to the JTADG.

- Executes the JTA configuration management (CM) process.

- Maintains the database of all recommended, proposed, agreed, and implemented changes to the JTA.

- Electronically distributes new versions of the JTA within the agreed CM process and schedule.

- Serves as the focal point for industry comments.

- Identifies JAT subgroup leaders.

- Identifies standards candidates for elevation to the JTA Core.

- Maintains the DoD JTA Web site.

"Combatant Commands, Services, and Agencies perform the following major JTA-related functions:

- Provide JTA implementation feedback to the TASG and JTADG.

- Provide representatives to the TASG and JTADG.

- Represent their organization's interoperability and acquisition/implementation issues and concerns.

- Ensure that the proper technical, functional, and acquisition expertise is involved.

- Designate a voting representative to appropriate groups.

- Identify standards candidates for elevation to the JTA core.

- Generate change requests to maintain the accuracy and integrity of the JTA's mandated standards, emerging standards, and associated text.

Final Report
Reference

Pages 53-57

REASON: Accuracy. DOD ACC Tri-chairs, not DOD CIO, are involved in the management of JTA development. See also DoD JTA Management Plan, June 2000.

jj. Appendix E, DoD Component JTA Implementation Plans (pages 42-46).

COMMENT: Delete this appendix. Unrelated to "the Use of JTA in Acquisition Process."

Page 58-59

kk. Appendix F, Key Acquisition Planning Documents (pages 47-48).
Delete MNSs and ORDs from the list.

REASON: Accuracy. MNS and ORD are requirements generation documents, not acquisition planning documents.

Department of the Army Comments

Final Report
Reference



Office, Director of Information
Systems for Command, Control,
Communications, & Computers

DEPARTMENT OF THE ARMY
OFFICE OF THE SECRETARY OF THE ARMY
107 ARMY PENTAGON
WASHINGTON DC 20310-0107

30 MAR 2001

SAIS-PAA

MEMORANDUM FOR Inspector General, Department of Defense, 400 Army Navy Drive, Arlington, Virginia 22202-4704

SUBJECT: Audit Report on Use of the DoD Joint Technical Architecture (JTA) in the Acquisition Process

1. Reference Audit Report on Use of the DoD Joint Technical Architecture in the Acquisition Process, Project No. D1999AE-0101.001, Office on the Inspector General, DoD, 19 January 2001.

2. The Army concurs with the findings and basically agrees with the proposed recommendations. However, prior to implementation, my office desires to discuss some concerns regarding the recommendations. Discussions should include all the services. For example, Recommendation, B.1, on page 23, addresses the use of the JTA requirements in the Weapon System acquisition documentation. It is not clear on the extent of the Defense Information Systems Agency's (DISA) proposed role in the review process for Mission Needs Statements (MNS), and Operational Requirements Documents (ORDs). The Army already includes JTA compliance language in acquisition documents. The documents are already included in service and DoD level reviews.

3. As the audit report indicates, the Army has implemented the JTA to help achieve weapon systems interoperability and to support the open systems approach in weapon systems design. The Army actively participates in the revision of the JTA to ensure that the mandated standards are current and that systems using the standards are interoperable and affordable.

4. For questions and for further discussion, contact Ms. E. Jean Gilleo, DSN 227-4189, comm, (703) 697-4189, email: elizabeth.gilleo@hqda.army.mil.


DAVID BORLAND
Vice Director

Printed on  Recycled Paper

Page 28

Audit Team Members

The Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, DoD, prepared this report.

Mary L. Ugone
John E. Meling
Harold C. James
Patrick E. McHale
Renee L. Gaskin
Shaun B. Jeffery
Susan J. Lippolis
Jamie Bobbio
Wei Chang
Jenshel D. Marshall