
June 28, 2002



Information Technology

Acquisition and Clinger-Cohen Act
Certification of the Defense
Integrated Military Human
Resources System
(D-2002-123)

Department of Defense
Office of the Inspector General

Quality

Integrity

Accountability

Report Documentation Page

Report Date 28 Jun 2002	Report Type N/A	Dates Covered (from... to) -
Title and Subtitle Information Technology: Acquisition and Clinger-Cohen Act Certification of the Defense Integrated Military Human Resources System	Contract Number	
	Grant Number	
	Program Element Number	
Author(s)	Project Number	
	Task Number	
	Work Unit Number	
Performing Organization Name(s) and Address(es) OAIG-AUD(ATTN: AFTS Audit Suggestions) Inspector General Department of Defense 400 Army Navy Drive Arlington, VA 22202-2884	Performing Organization Report Number D-2002-123	
	Sponsoring/Monitoring Agency Name(s) and Address(es)	
		Sponsor/Monitor's Acronym(s)
		Sponsor/Monitor's Report Number(s)
Distribution/Availability Statement Approved for public release, distribution unlimited		
Supplementary Notes		
Abstract		
Subject Terms		
Report Classification unclassified	Classification of this page unclassified	
Classification of Abstract unclassified	Limitation of Abstract UU	
Number of Pages 56		

Additional Copies

To obtain additional copies of this audit report, visit the Web site of the Inspector General of the Department of Defense at www.dodig.osd.mil/audit/reports or 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.

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 of the 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, DC 20301-1900. The identity of each writer and caller is fully protected.

Acronyms

AoA	Analysis of Alternatives
BPR	Business Process Reengineering
CCA	Clinger-Cohen Act of 1996
CIO	Chief Information Officer
COTS	Commercial-off-the-shelf
DIMHRS	Defense Integrated Military Human Resources System
JPMO	Joint Program Management Office
JR&IO	Joint Requirements and Integration Office
OSD	Office of the Secretary of Defense



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

June 28, 2002

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND
READINESS
ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL,
COMMUNICATIONS, AND INTELLIGENCE)
NAVY PROGRAM EXECUTIVE OFFICER FOR INFORMATION
TECHNOLOGY
DIRECTOR, JOINT REQUIREMENTS AND INTEGRATION OFFICE

SUBJECT: Audit Report on Acquisition and Clinger-Cohen Act Certification of the Defense
Integrated Military Human Resources System (Report No. D-2002-123)

We are providing this report for review and comment. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. As a result of management comments, we clarified the intent of Recommendation A.2. and request that the Chief Information Officer, DoD, provide additional comments. We also request that the Navy Program Executive Officer for Information Technology provide comments on Recommendation A.1. and that the Under Secretary of Defense for Personnel and Readiness provide additional comments on Recommendation A.3. Comments should describe actions taken or planned in response to agreed-upon recommendations and provide the completion dates of the actions. State specific reasons for any nonconcurrence and propose alternative actions, if appropriate. We request that management provide comments by July 31, 2002.

If possible, please provide management comments in electronic format (Adobe Acrobat file only) to the e-mail addresses cited in the last paragraph of this memorandum. Copies of the management comments must contain the actual signature of the authorizing official. We cannot accept the / Signed / symbol in place of the actual signature. If you arrange to send classified comments electronically, they must be sent over the classified SECRET Internet Protocol Router Network (SIPRNET).

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Ms. Wanda A. Scott at (703) 604-9049 (DSN 664-9049) (wascott@dodig.osd.mil) or Mr. James W. Hutchinson at (703) 604-9060 (DSN 664-9060) (jhutchinson@dodig.osd.mil). See Appendix E for the report distribution. The audit team members are listed on the inside back cover.

A handwritten signature in black ink, appearing to read "Thomas F. Gimble", is positioned above the typed name.

Thomas F. Gimble

Acting

Deputy Assistant Inspector General
for Auditing

Office of the Inspector General of the Department of Defense

Report No. D-2002-123

June 28, 2002

(Project No. D2000AS-0212.002)

Acquisition and Clinger-Cohen Act Certification of the Defense Integrated Military Human Resources System

Executive Summary

Who Should Read This Report and Why? Managers who plan, develop, or oversee DoD automated information systems should be interested in this report because of the special considerations involved in developing an automated information system based on a commercial software product.

Background. This report is the third in a series evaluating certifications that DoD automated information systems were being developed in accordance with the Clinger-Cohen Act. During FYs 2000 and 2001, Congress required that the Chief Information Officer of the DoD, before approving acquisition Milestones I, II, or III¹ of high-cost information systems, evaluate the actions taken related to specific requirements of the Clinger-Cohen Act. To help ensure effective oversight of DoD information technology investments, Congress included Section 8121(b) in the DoD Appropriations Act for FY 2000, which also required the Chief Information Officer of the DoD to inform Congress of the certifications and to provide confirmation that DoD Components took steps to meet specific requirements of the Act.

The Defense Integrated Military Human Resources System is a joint personnel and pay system that is intended to replace about 80 legacy systems. As a major automated information system, it is subject to the milestone decision approval authority of the Chief Information Officer of the DoD and Section 8121 certification.

Results. Program management officials faced significant risks associated with the Defense Integrated Military Human Resources System acquisition strategy, making the upcoming Milestone B review and Clinger-Cohen Act certification particularly challenging. As of February 2002, it was uncertain whether program officials could execute the acquisition within acceptable cost, schedule, and performance boundaries. The Milestone B review needs to validate that alternative acquisition approaches have been thoroughly considered. Additionally, establishing time limits to resolve potential

¹With the issuance of DoD Instruction 5000.2, "Operation of the Defense Acquisition System" on October 23, 2000, the milestone names changed from I, II, and III to A, B, and C.

issues during system development would reduce schedule and performance risks. As of June 2002, DIMHRS program officials have deferred Milestone B to September 2002. See finding A for detailed recommendations.

The Chief Information Officer of the DoD had sufficient basis to certify, in June 2000, that the Defense Integrated Military Human Resources System was being developed in accordance with the Clinger-Cohen Act with respect to Milestone 1. However, substantial work remained to meet the requirements of the Clinger-Cohen Act with respect to Milestone B. See finding B for a discussion of the work to be completed.

Management Comments and Audit Response. The Chief Information Officer of the DoD generally concurred with the audit results and stated that his office would continue to consider the recommended alternatives. The Under Secretary of Defense for Personnel and Readiness (the Under Secretary) concurred with the basic premise that the value of the Defense Integrated Military Human Resources System be demonstrated before commencing development but did not agree with the discussion or recommendations related to the system justification, improvements to the existing military personnel systems, and further exploration of alternatives. The Navy Program Executive Officer for Information Technology concurred with the Under Secretary comments but did not comment directly. The Joint Staff, the Air Force, and the Defense Accounting and Finance Agency provided unsolicited comments. See the Findings for a discussion of management comments. The complete text of written comments is in the Management Comments section. Chief Information Officer of the DoD and Navy Program Executive Officer comments on the recommendations about the further exploration of alternatives were not clear; therefore, we ask for additional comments. Although the Under Secretary's comments about the recommendation to amend the process for resolving issues were generally responsive, we ask that the Under Secretary provide an expected implementation date for amending the process. We request that management provide comments on the final report by July 31, 2002.

Table of Contents

Executive Summary	i
Introduction	
Background	1
Objectives	3
Findings	
A. Defense Integrated Military Human Resources System Acquisition Risks	4
B. Certification of the Defense Integrated Military Human Resources System at Milestone I	15
Appendixes	
A. Scope and Methodology	
Scope and Methodology	22
Prior Coverage	23
B. Clinger-Cohen Act of 1996	24
C. Defense Integrated Military Human Resources System Background	25
D. Exit Criteria for Milestone B	27
E. Summary of Management Comments and Audit Response	28
F. Report Distribution	31
Management Comments	
Under Secretary of Defense for Personnel and Readiness	33
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)	42
Department of the Navy	46
Department of the Air Force	47
Joint Staff	48

Background

In July 1999, the House Committee on Appropriations expressed disappointment in the level of oversight of DoD information technology system acquisitions. Specifically, House of Representatives Report 106-244, “Report of the Committee on Appropriations,” July 20, 1999, stated that DoD information technology projects often overrun budgets, slip schedules, evade data standardization and interoperability requirements, and shortchange user needs. To address those concerns, Congress developed provisions to prohibit any DoD major automated information system from receiving Milestone² I, II, or III approval during FY 2000 without written certification from the DoD Chief Information Officer (CIO) that the system was being developed in accordance with the Clinger-Cohen Act of 1996³ (CCA). The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), designated as the DoD CIO, is responsible for overseeing all DoD information technology systems and implementing several aspects of the CCA.

Section 8121(b), “Certifications as to Compliance with Clinger-Cohen Act.”

On October 25, 1999, Congress enacted Public Law 106-79, which included Section 8121(b), “Certifications as to Compliance with Clinger-Cohen Act.” Public Law 106-79, Section 8121(b) [Section 8121(b)] required that:

(1) During the fiscal year 2000, a major automated information system may not receive Milestone I approval, Milestone II approval, or Milestone III approval within the Department of Defense until the Chief Information Officer certifies, with respect to that milestone, that the system is being developed in accordance with the Clinger-Cohen Act of 1996 (40 U.S.C 1401 et seq.). The Chief Information Officer may require additional certifications, as appropriate, with respect to any such system.

(2) The Chief Information Officer shall provide the congressional defense committees timely notification of certifications under paragraph (1). Each such notification shall include, at a minimum, the funding baseline and milestone schedule for each system covered by such a certification and confirmation that the following steps have been taken with respect to the system:

- A) Business process reengineering.
- B) An analysis of alternatives.

² A milestone is a decision point that separates major phases of an acquisition program. DoD Regulation 5000.2-R, “Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs,” June 2001 requires the Milestone Decision Authority to provide approval at each milestone before an acquisition program can progress to the next phase of development.

³ A description of the Clinger-Cohen Act of 1996 is provided in Appendix B.

-
- C) An economic analysis that includes a calculation of the return on investment.
 - D) Performance measures.
 - E) An information assurance strategy consistent with DoD Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Architecture Framework.

Section 8121(b) requirements were only applicable during FY 2000. However, Congress extended the certification requirements through FY 2001 by enacting Section 8102(b), "Certifications as to Compliance with the Clinger-Cohen Act," of the DoD Appropriations Act for FY 2001. For FY 2002, Congress did not extend the CIO certification requirements.

Need for a DoD Personnel and Pay System. The Defense Integrated Military Human Resources System (DIMHRS) is a DoD military personnel and pay management system being developed to correct deficiencies that were highlighted during Operations Desert Shield and Desert Storm in 1990 and 1991. For example, joint commanders lacked accurate information needed to perform operational assessments, Reserve and National Guard members received delayed or inaccurate pay and benefits, and the Services had difficulty demonstrating potential exposures to environmental hazards such as chemical and biological weapons use. The Under Secretary of Defense for Personnel and Readiness approved a mission need statement for a single, fully integrated, all-Service, all-component, military personnel and pay management system on February 24, 1998.

DIMHRS System Description. DIMHRS is a joint personnel and pay system that is intended to replace about 80 legacy personnel systems and provide personnel and pay services for all DoD military personnel. DIMHRS will consist of core business processes common to all Services and will be supplemented by Service-specific needs. The core system will collect, store, transmit, process, and report personnel and pay data for all DoD active duty, Reserve, National Guard, and retired military personnel. Service-specific functionality will be provided by DIMHRS for any pay and personnel management processes that were supported by the Services legacy systems, but will not be included in the core system. The DIMHRS Joint Program Management Office (JPMO) proposed the use of a commercial-off-the-shelf (COTS) solution to meet both core and Service-specific requirements. In March 2001, the Naval Sea Systems Command awarded a one-year COTS Enterprise License to PeopleSoft to determine PeopleSoft's level of fit with the DIMHRS requirements and the DoD business processes. See Appendix C for additional background information on DIMHRS.

DIMHRS Oversight and Management. DIMHRS is a major automated information system under the milestone decision authority of the DoD CIO. The JPMO, located at the Space and Naval Warfare Information Technology Center in New Orleans, Louisiana, performed acquisition program management responsibilities. The Navy was the executive agent for DIMHRS. The Under

Secretary of Defense for Personnel and Readiness was the DIMHRS functional proponent. Within the Office of the Under Secretary of Defense for Personnel and Readiness, the Joint Requirements and Integration Office (JR&IO) was responsible for business process reengineering and functional requirements. DIMHRS' estimated life-cycle costs ranged from \$1.4 billion to \$2.5 billion. The JPMO and JR&IO spent over \$100 million on the DIMHRS program through FY 2001.

Since Milestone I approval on October 27, 2000, the DIMHRS program was in the Concept and Technology Development acquisition phase.⁴ The JPMO expected to hold a Milestone B review in December 2001 until the DIMHRS Executive Steering Committee approved a new accelerated migration strategy on July 20, 2001. The new strategy focused on accelerating the development and fielding of an integrated personnel and pay functionality to the Army and Navy. Although actions to officially re-baseline the DIMHRS program were in progress as of February 2002, the JPMO estimated that a Milestone B review would be delayed until July 2002.

Objectives

The primary audit objective was to determine whether DoD oversight processes and procedures provided the DoD CIO with a sufficient basis to certify at Milestone I that DIMHRS was being developed in accordance with CCA. We also reviewed the program acquisition strategy and evaluated related acquisition management risks. In a subsequent report, we will assess the progress of DoD to implement CCA, and we will review related management controls. See Appendix A for a description of the audit scope and methodology and prior coverage related to the DIMHRS program.

DIMHRS Acquisition Program Risks and Certification

Although the DoD CIO certification that DIMHRS was being developed in accordance with CCA at Milestone I was warranted, the DIMHRS program officials faced significant risks associated with program acquisition strategy. A discussion of those acquisition management risks is provided in finding A. The DoD CIO certification for Milestone I is discussed in detail in finding B.

⁴ On October 23, 2000, the Office of the Secretary of Defense updated DoD Instruction 5000.2, "Operation of the Defense Acquisition System." Under the old guidance, the DIMHRS program was in the Program Definition and Risk Reduction phase, and the next milestone would have been Milestone II; however, under the new guidance, DIMHRS is in the Concept and Technology Development phase, and the next milestone is Milestone B, which is the decision point for entry into the System Development and Demonstration phase.

A. Defense Integrated Military Human Resources System Acquisition Risks

The DIMHRS program faced significant risks associated with the program acquisition strategy. Those program risks existed because the amount of the COTS software modification was unknown and planned modifications were significantly less than indicated by prior DoD experience with human resource system acquisitions. Because several decisions typically made by Milestone I were deferred to the Concept and Technology Development phase, the DIMHRS planned Milestone B program schedule was very aggressive. Although the DIMHRS program manager and officials initiated various risk reduction initiatives, as of February 2002, it was uncertain whether DoD could execute the DIMHRS acquisition within acceptable cost, schedule, and performance boundaries while meeting user expectations. To meet the full intent of the Clinger-Cohen Act at Milestone B, program officials need to address these risks and uncertainties.

Planned Modifications and DoD Experience with Commercially Available Software Applications

Federal and DoD acquisition policy emphasizes a streamlined approach that closely resembles the commercial marketplace and encourages the acquisition of commercial items. Accordingly, DoD requires that DoD Components initially consider the use of the COTS software products when acquiring automated systems. The primary advantage of using the COTS software products is cost savings. Because development and maintenance costs are spread among a broad base of the COTS users, DoD costs for COTS could be less than the costs of software developed and maintained exclusively for DoD. However, with the modification of a COTS software product, monetary advantages diminish. As reflected in "Commercial Item Acquisition: Considerations and Lessons Learned," June 26, 2000, DoD experience with COTS software products has shown that functional requirements are seldom fully satisfied by a COTS software product without some degree, and often a substantial amount, of modification.

In February 2001, the DIMHRS program manager anticipated that the COTS software would require about 10 to 20 percent modification to obtain the minimum functionality required by DoD users. However, prior DoD experience with COTS-based human resource systems indicated that it may be unreasonable to expect to meet 80 to 90 percent of the required functionality with an "off the shelf" application. DIMHRS was not the first COTS-based military personnel system developed by DoD. The Air Force and Navy each spent considerable effort and funds to modernize their military personnel systems in recent years, and both systems were based on a human resources COTS software product. However, because "off the shelf" software products did not totally satisfy the Services functional requirements, both the Air Force and Navy made extensive modifications to achieve the required functionality.

For the Air Force, the initial “fit” of the COTS package only met about 25 percent of specified requirements, while the COTS software product required significant modification to achieve the remaining 75 percent. The Navy modified its COTS software product to achieve about 90 percent of the required functionality. Further, the COTS software for the Defense Civilian Personnel Data System, the new DoD standardized civilian personnel management system, initially provided only about 65 percent of the required functionality.

In May 2001, the DIMHRS program officials took steps to mitigate the risk posed by planned COTS software modification by initiating a “fit gap” analysis. The “fit gap” analysis, when complete, should be sufficient to mitigate the risk of unknown and potentially extensive software modifications. Therefore, we did not make any recommendations associated with this risk. The “fit gap” analysis is discussed in more detail in the “Management Risk Reduction Initiatives” section of this report.

Schedule and Affordability of the DIMHRS Program

Under the traditional DoD acquisition approach of designing and building an information system to meet specified requirements, sufficient detail would have been identified by Milestone I to select a preferred alternative and to establish cost, schedule, and performance thresholds and objectives to meet specified functional requirements. The DIMHRS program did not follow this traditional approach. Although the DIMHRS program obtained Milestone I approval in October 2000, when the DoD investment in DIMHRS approached \$100 million, many aspects of the DIMHRS program were not well-defined, including program cost estimates. In July 1999, the JPMO developed the preliminary DIMHRS cost analysis for Milestone I review considerations. However, neither the JPMO nor the JR&IO had developed a detailed and well-documented cost analysis for DIMHRS because the specific capabilities and limitations of the COTS software had not been thoroughly evaluated and defined. As discussed later in this finding under the “Management Risk Reduction Initiatives” heading, a detailed analysis of the COTS package was initiated shortly after the COTS product was acquired in March 2001. The JPMO appropriately did not acquire the COTS product before March 2001 because DoD acquisition guidance discourages major acquisition expenditures prior to Milestone I. Once the COTS capabilities are defined and established, cost tradeoffs can be evaluated and cost analyses developed; however, there was considerable risk that the Concept and Technology Development phase activities could not be completed as scheduled and that the proposed DIMHRS program may not be the most cost effective or affordable solution.

Schedule Risk. The DIMHRS schedule for accomplishing the Concept and Technology Development phase activities was very aggressive. The Milestone I Acquisition Program Baseline, approved in May 2000, scheduled the end of the Concept and Technology Development phase to occur between September and December 2001; however, program management officials subsequently delayed Milestone B until July 2002. As of June 2002, program officials again delayed Milestone B until September 2002.

One of the documents required by the DoD CIO for the Milestone B review is the DIMHRS economic analysis. Extensive life-cycle costing effort was required to produce the economic analysis. Specifically, the DIMHRS program manager needed to finalize the Cost Analysis Requirements Description, which provides the programmatic assumptions for satisfying the functional requirements. The program manager also needed to finalize the DIMHRS life-cycle cost estimate. Further, the JPMO had to obtain an independent estimate of the DIMHRS life-cycle costs. After the DIMHRS life-cycle cost estimate and the independent life-cycle cost estimates were reconciled, the JPMO would have to incorporate the reconciled life-cycle costs, along with estimated life-cycle benefits, into the DIMHRS economic analysis. The JPMO would then have to coordinate the economic analysis among interested DoD Components and relevant Office of Secretary of Defense (OSD) oversight organizations, such as the Office of Program Analysis and Evaluation.

Two main factors made the completion and coordination of a thorough DIMHRS economic analysis by July 2002 doubtful. First, several cost-related documents, such as the component cost analysis and the economic analysis, needed to be completed, coordinated, and approved. Secondly, because the detailed evaluation of the COTS capabilities will not be completed until July 2002, the reliability of the DIMHRS cost estimates prepared prior to July 2002 may be questionable. Accordingly, the completion of all required costing efforts by July 2002 was optimistic. The DIMHRS schedule did not appear to allow sufficient time for a thorough COTS software evaluation and incorporation of the knowledge gained into a complete and valid DIMHRS economic analysis for Milestone B. Also, because the Preliminary Economic Analysis, dated July 7, 1999, indicated a relatively low return on investment, it was uncertain whether DIMHRS could be economically justified.

Affordability of DIMHRS. Because DoD Components have expended substantial resources on improved military personnel management automated systems in recent years, it is unclear whether the ultimate cost of DIMHRS will be worthwhile. In addition to the potential substantial investment required to develop DIMHRS, the Navy and Air Force have continued to invest heavily in their legacy military personnel systems. Additionally, the Joint Personnel Asset Visibility system, an interim system designed to provide the Combatant Commanders with better visibility over their personnel assets, has been developed but not yet fielded due to funding problems.

Potential DIMHRS Costs. As of February 2002, the DIMHRS program officials had not completed detailed costing of DIMHRS. According to preliminary cost estimates, the overall DIMHRS program may be very expensive and may not be economically advantageous to DoD. The DIMHRS software development and deployment cost estimates, made in December 1999 by an independent source, ranged from \$380 million to \$1.2 billion depending on key variables, such as the length of development and deployment efforts and the initial "fit" of the COTS software to meet functional requirements. The independent DIMHRS life-cycle cost estimates ranged from \$1.3 to \$3.6 billion in consideration of the same variables. In comparison, the JPMO and the JR&IO estimation of life-cycle costs, as shown in the July 1999 DIMHRS Preliminary Economic Analysis, totaled between \$1.4 to \$2.5 billion.

Recent Legacy System Enhancements. Although DIMHRS was expected to provide an integrated pay and personnel management capability, the majority of costs to develop DIMHRS were expected to involve the development of a standardized military personnel system, which would replace about 80 military Service personnel systems. However, the Services have continued to modernize their legacy personnel systems. During the past few years, the Services, specifically the Navy and the Air Force, have invested heavily in their individual legacy personnel management systems or developed new systems. The Navy expects to spend more than \$230 million through FY 2002 on the development of the Navy Standard Integrated Personnel System. Although the amount of Air Force investment in its Military Modernization project is uncertain, because it was funded within a budget line for modernization of their legacy personnel systems, the Air Force investment was substantial. Both systems used modern technology and were based on a COTS human resources application. Also, both systems required significant COTS software modifications to provide the functionality required by its users.

Personnel Asset Visibility. One major justification for the DoD investment in DIMHRS was to meet the joint forces commander's operational need for personnel asset visibility. The need for increased personnel visibility by joint forces commanders became evident in the early 1990s during Operations Desert Shield and Desert Storm. The Services legacy systems did not enable the commanders of joint operations sufficient visibility of personnel assets to perform operational assessments and planning.

Because DIMHRS implementation was not expected to occur for several years, DoD developed an interim system called Joint Personnel Asset Visibility to provide enhanced personnel asset visibility to the Combatant Commanders. The system was scheduled for implementation in early FY 2002 but implementation was indefinitely delayed due to a funding shortfall of \$2.4 million.

Other Alternatives. The JPMO and the JR&IO did not thoroughly consider the costs and benefits associated with meeting critical military personnel management needs without replacing the legacy systems. In 1999, potential alternatives for DIMHRS were independently assessed. One alternative identified was the establishment of a common database that would be supplied data by the Service legacy systems. However, the assessors did not develop related costs and benefits for this alternative. The planned DIMHRS program may provide a greater level of benefit than presently provided by the legacy Service systems; however, the legacy systems seem to meet the operational assessment needs of joint military commanders. Further, the costs and benefits of alternative approaches to a common system have not received detailed examination. Although a common military personnel management system has several advantages, the DIMHRS program had yet to quantify the level of investment required to develop a standardized military personnel management system. Accordingly, the DIMHRS program officials need to objectively estimate the expected costs and benefits of basing DIMHRS on a common database that is supplied data by the Services legacy systems. Further, before authorizing the development of a common, standardized military personnel management system, the DoD CIO needs to consider the related costs and benefits associated with both alternatives to ensure that the DoD investment in

DIMHRS is optimal and that critical user needs are met. Fortunately, Milestone B, scheduled to occur in September 2002, offers the opportunity to make these determinations.

Meeting User Needs

Senior DoD officials planned to limit the amount of COTS modifications and, therefore, to limit the costs for the DIMHRS software modifications; however, those same actions may increase the risk that the DIMHRS implementation would not be fully successful. Adoption of the COTS inherent personnel management processes will diminish the need for software modifications but, while defining and developing core DIMHRS capabilities, program officials need to also adequately consider how well those processes will meet user requirements. To be fully successful, DIMHRS needs to meet user functional requirements to accomplish user missions. If functional requirements are not met by DIMHRS, past experience shows that users may be reluctant to retire legacy systems.

If DoD envisions that DIMHRS will become the single DoD military personnel management system, then OSD officials must ensure that DIMHRS will adequately support the Services functional communities. DoD implementation of the Standard Procurement System illustrated the reluctance of functional users to accept a system that does not adequately support mission accomplishment. DoD development of the Standard Procurement System had many similarities to DIMHRS. As DIMHRS was intended to support the military personnel management function, the Standard Procurement System was envisioned to be the single, standard automated system used by DoD for the procurement function. DoD based the development of the Standard Procurement System on a COTS software product that was being developed and fielded incrementally.

The Office of the Inspector General, DoD, periodically reported on the acquisition and development of the Standard Procurement System. Inspector General, DoD, Report No. 96-219, "Allegations to the Defense Hotline Concerning the Standard Procurement System," September 5, 1996, stated that the acquisition strategy increased the risks that the program would not meet the overall objective of a standardized procurement system that would fully meet user needs. Inspector General, DoD, Report No. D-2001-075, "Standard Procurement System Use and User Satisfaction," March 13, 2001, identified several issues related to user satisfaction, including the conclusion that most users of the Standard Procurement System preferred an alternative procurement system. The alternative system preferred was most often the legacy system that the Standard Procurement System would replace. Additionally, Inspector General, DoD, Report No. 99-166, "Initial Implementation of the Standard Procurement System," May 26, 1999, stated that the Standard Procurement System was scheduled to replace 12 major procurement legacy systems during the period of FY 1998 through FY 2000. Partially because the Standard Procurement System did not meet user needs, none of the legacy systems were retired at the time of the audit in May 1999. As of August 2001, only 4 of the 12 legacy systems were retired.

In recognition of potential disagreements during DIMHRS development, JR&IO developed an issue resolution process. Because the established issue resolution process should help mitigate the risk that DIMHRS may not meet user needs, we made no related recommendations except with respect to time limitations for resolving issues.

Management Risk Reduction Initiatives

The DIMHRS program officials, recognizing substantial risks to the program, took steps to lessen potential impacts on the development of DIMHRS. In May 2001, the JPMO and JR&IO initiated a detailed analysis of the PeopleSoft COTS software package to better define its specific capabilities and ability to meet functional requirements. Additionally, the JR&IO developed a process to resolve issues that may emerge during the development of DIMHRS.

Analysis of COTS Capabilities. Shortly after acquiring the PeopleSoft COTS software product in March 2001, the JPMO and JR&IO began an extensive analysis of PeopleSoft to better define the gap between functional requirements and the ability of PeopleSoft to adequately meet those requirements. The initial “fit gap” analysis was completed in December 2001 and the DIMHRS JPMO expects to complete an in-depth analysis in July 2002. The DIMHRS program manager stated that initial “fit gap” analysis results were encouraging and that it may be possible to use the PeopleSoft product with relatively few modifications. Completion of the “fit gap” analysis should provide a much clearer picture of PeopleSoft’s inherent capabilities, the amount of required software modifications, and the investment ultimately needed for the completion of DIMHRS.

To minimize costs, the DIMHRS program officials intend to adopt the personnel management business processes inherent in the COTS software to the maximum extent. In their efforts to minimize costs, the DIMHRS program officials need to remember that the Navy and Air Force, while developing their modern military personnel management systems, each reached the conclusion that significant COTS software modification was worth the investment and was necessary to meet their user requirements. As previously discussed, a focus only on potential costs, rather than on potential costs and benefits, increases the risk that users may not readily accept and use DIMHRS if it does not satisfy their operational needs.

Issue Resolution Process. The JR&IO, working with the Joint Integration Group, developed and coordinated an issue resolution process to provide a means to minimize the associated risk and potential cost that would accompany COTS software modifications. Issues identified during the COTS software “fit gap” analysis and subsequent JR&IO recommendations were documented in an issue resolution log. Additionally, all issues and recommendations were fully coordinated with the Joint Integration Group. Issues not resolved by the Joint Integration Group will be elevated to an Executive Steering Committee, which includes senior military management representatives. The Under Secretary of Defense for Personnel and Readiness decides upon issues that cannot be resolved by the Executive Steering Committee. The issue resolution process

facilitates the review of issues identified and ensures that the views of the Services are considered; however, the issue resolution process did not have established time limitations or restrictions for resolution of open issues. For example, the resolution process did not specify how long an issue could remain at the Joint Integration Group before it was elevated to the next decision level. As a result, only 11 of the 50 issues opened during July 2001 were closed within four months, while 18 of the 50 issues took between 4 and 6 months to close. Additionally, as of January 14, 2002, 21 of those 50 issues were still open, but had not gone to the Executive Steering Committee for review.

Until the DIMHRS program officials better understand the specific capabilities of the selected COTS software product, functional requirements would probably continue to be defined at a macro-level. However, as the COTS software capabilities are defined, the JPMO and JR&IO managers will be better able to perform cost tradeoff analyses and begin to specifically define the DIMHRS core functionality. Consequently, the Director, JR&IO, may receive many proposals for the COTS software modifications later in the acquisition. Therefore, the DIMHRS program officials need to modify the issue resolution process to establish time limitations to ensure the resolution of issues that could impact user acceptance of DIMHRS.

Conclusion

The development of a standard system for use by all of the Services is difficult, even under the best circumstances. However, the number of unknowns that existed at Milestone I and that remain to be identified, quantified, and defined during the Concept and Technology Development phase presented a formidable challenge for the DIMHRS program officials. Further, the factors that needed to be defined and quantified were highly interrelated and interdependent. Those factors included the capabilities and limitations of the selected COTS software product, the “fit” of the COTS product to functional requirements, any software modification to meet user requirements, and efforts to control associated costs. In turn, each of those factors represented risk to the DIMHRS program that could substantially impact the cost, schedule, and performance of the program. Further, the potential impacts of recent Navy and Air Force investments in their legacy systems have not been fully analyzed or recognized within the DIMHRS program.

Milestone B presents the Chief Information Officer of the DoD and the DIMHRS program’s sponsors and users with the opportunity to thoroughly evaluate the future course of this major information technology investment. If necessary, it should be rescheduled again to allow sufficient time to carry out and document the requisite analyses needed for sound decision making.

Management Comments on the Finding and Audit Response

Management Comments. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) (the Assistant Secretary) partially

concluded with the draft finding. The DoD CIO agreed that the DIMHRS planned Milestone B schedule may be overly optimistic, but indicated that the decisions made by Milestone 1 were in full compliance with acquisition requirements. Accordingly, the issue of questionable program affordability should not be attributed to a lack of well-defined acquisition program parameters.

The Under Secretary of Defense for Personnel and Readiness (the Under Secretary) concurred in the draft report's basic premise that DIMHRS demonstrates its value before entering the design and development phase, but stated that the report contained errors concerning the discussions of DIMHRS justification, legacy personnel system improvements, and further exploration of viable alternatives.

The Navy Program Executive Officer for Information Technology (the Navy Program Executive Officer) concurred with the Under Secretary comments.

Although not required to comment, the Director for Manpower and Personnel, Joint Chiefs of Staff (the Joint Staff), stated that we did not accurately quote statements made by his staff and reached an inappropriate conclusion regarding the need for DIMHRS by the Unified Commands.

Although not required to comment, the Air Force Deputy Chief of Staff (Personnel) (the Air Force) concurred, particularly with analysis of a "common database" alternative.

The full text of comments made by the Assistant Secretary, the Under Secretary, the Joint Staff, the Air Force, and the Navy Program Executive Officer are in the Management Comments section of this report.

Although not required to comment, the Director for Business Integration, Defense Finance and Accounting Service, provided oral comments and generally concurred with the finding and audit results.

Audit Response. Regarding the Assistant Secretary's comments, we did not intend to indicate that the Milestone I decisions were inappropriate or were not in compliance with acquisition requirements. Nor did we intend to indicate that the existence of unresolved questions at Milestone I was inappropriate. Our intent was to illustrate the related challenges involved to oversee the development of a COTS-based automated information system.

We do not agree with all of the comments provided by the Under Secretary and the Joint Staff. Their specific positions and associated audit responses are summarized in Appendix E. The full text of written comments received is in the Management Comments section of this report.

Recommendations, Management Comments, and Audit Response

A.1. We recommend that the Navy Program Executive Officer for Information Technology provide an analysis of the cost effectiveness of the Defense Integrated Military Human Resources System to include an analysis of other program alternatives to the Milestone Decision Authority before a Milestone B decision. Other program alternatives include those that may not provide all of the benefits or meet all stated requirements of the currently planned system, but that may involve significantly less cost and risk, such as the alternative of a common database fed by the Services legacy systems.

Management Comments. The Navy Program Executive Officer concurred with comments provided by the Under Secretary, but did not directly provide comments on the draft report. Because the recommendation is addressed to the Navy Program Executive Officer, we request that the Navy Program Executive Officer provide comments in response to the final report.

Although not required to comment, the Under Secretary partially concurred, but stated that all viable program alternatives that will meet established functional requirements have already been determined. Therefore, it is not appropriate for the Navy Program Executive Officer to perform additional analyses. Additionally, the Analysis of Alternatives Task Force considered many alternatives, including a common database. However, a common database approach was not considered viable because it would not resolve any of the deficiencies described in high-level requirements documents.

Audit Response. In regard to the Under Secretary's comments, we disagree that all viable alternatives were evaluated and documented in the AoA. We also disagree that additional analysis is not needed. During the Milestone I review, the DIMHRS Program was allowed to proceed into phase I with the agreement that program alternatives would be further defined and evaluated prior to Milestone B. During the audit, program officials explained that two viable alternatives existed and would be examined prior to Milestone B: the buy alternative and the build alternative. However, program officials did not provide any documentation to show that the build alternative had been thoroughly evaluated. Further, the buy alternative only considered one business approach, which was the use of a human resources COTS product with very minimal COTS modifications. As discussed in this finding, we see many risks associated with this approach. Although the current DIMHRS approach may meet all stated requirements, it has not been clearly demonstrated that it will provide DoD with the best return on investment or adequately lessen attendant risks. Additionally, the Navy and Air Force have substantially invested in modernizing their legacy systems. Accordingly, a prudent business decision would be to consider other alternatives prior to Milestone B.

A.2. We recommend that the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), before authorizing, at Milestone B, the development of a common, standardized military personnel management system, determine whether the proposed investment for the Defense Integrated Military Human Resources System program provides the best business solution when compared to alternatives solutions for meeting DoD military personnel management and pay needs.

Management Comments. The Assistant Secretary concurred and stated that the organization will continue to consider the recommended alternatives as DIMHRS progresses toward implementation.

Although not required to comment, the Under Secretary concurred with comment, stating that the role of the functional community is to identify feasible and non-feasible alternatives and that the role of the Navy Program Executive Officer is to document the business case for the selected alternative. The Under Secretary also indicated that the Assistant Secretary, in the role of the Milestone Decision Authority, should limit his efforts to ensuring that all requirements bearing on a Milestone decision have been considered and that deliberations of a broader scope, including those in the recommendation, are not appropriate. Further, the Under Secretary stated that the draft report acknowledged that the selected alternative and the associated business case were responsive to guidance and only required additional time to obtain the detailed cost information necessary for evaluation.

Audit Response. Although the Assistant Secretary concurred, his comments were not clearly responsive to the intent of the recommendation. As stated in the Audit Response to Recommendation A.1., we did not see any evidence that program officials explored any specific alternative other than the use of an integrated pay and human resources COTS product. The Assistant Secretary should ensure that the DIMHRS program officials identify, evaluate, and provide a complete cost benefit analysis and return-on-investment calculation for the viable build and buy alternatives. Before granting Milestone B approval, the Assistant Secretary should also require that the related costs, benefits, and return on investment be analyzed for other potential alternatives. Accordingly, we request that the Assistant Secretary provide further comments that clarify his position regarding the consideration of business cases for alternative program approaches.

We agree with the Under Secretary's comments describing the usual roles of the functional community, the Navy Program Executive Officer, and the Milestone Decision Authority during acquisitions of major automated information systems. However, the Assistant Secretary has multiple roles and responsibilities and acts both as the Milestone Decision Authority for acquisitions of major automated information systems and as the DoD CIO. As the DoD CIO, the Assistant Secretary has overall responsibility for maximizing the value and assessing and managing the risks of DoD information technology acquisitions. Accordingly, the Assistant Secretary's role is appropriately described in the recommendation.

A.3. We recommend that the Director of the Joint Requirements and Integration Office, in coordination with the Offices of the Secretaries of the Army, Navy, and Air Force, amend the issue resolution process to provide timeframes for elevating the resolving issues that could impact user acceptance of the Defense Integrated Military Human Resources System. To be of maximum benefit, the issue resolution process should be modified before the Milestone B review.

Management Comments. The Under Secretary concurred with comment, stating that the issue resolution process documents will be updated to require that all critical path issues be resolved within 2 weeks or elevated to the next level. Additionally, non-critical path issues will be given a 6-month time frame for resolution. Should non-critical path issues threaten progress, they will then become critical and will fall under the 2-week rule.

Audit Response. The Under Secretary's comments were responsive; however, we request that the Under Secretary provide an expected implementation date for the updated issue resolution process.

B. Certification of the Defense Integrated Military Human Resources System

The DoD CIO had sufficient basis to certify that DIMHRS was being developed in accordance with the CCA at Milestone I. The certification was credible because the JPMO and the JR&IO took appropriate steps prior to Milestone I in four of the five certification areas outlined in Public Law 106-79, Section 8121(b). Specifically, those areas were business process reengineering, analysis of alternatives, economic analysis, and information assurance. Further, during the Milestone I review process, the DoD CIO provided effective oversight of DIMHRS. However, the JR&IO did not make sufficient progress towards developing performance measures, which was the fifth area specified in Section 8121(b). Additionally, because DIMHRS program officials were not authorized to acquire a COTS software product before Milestone I, the DIMHRS program officials were unable to evaluate and define the capabilities that the COTS product could provide. As a result, the JPMO and the JR&IO needed to complete additional work planned for the four certification areas and demonstrate progress in establishing functional performance measures in the fifth certification area for the DIMHRS program to meet the Section 8121(b) certification requirements at Milestone B.

Certification Process

For certification at Milestone I, the JPMO prepared the DIMHRS program compliance report that summarized the requirements of Section 8121(b) and provided background information on the program. The report also outlined the actions taken by the JPMO and the JR&IO with respect to business process reengineering (BPR), analysis of alternatives (AoA), economic analysis, information assurance, and performance measures. After reviewing the compliance report, a review team, represented by various staff offices within OSD, prepared a draft certification report for the signature of the DoD CIO. On April 17, 2000, the review team briefed the Deputy CIO on the draft DIMHRS certification report.

The Deputy CIO tentatively approved the certification during the briefing, thus authorizing the preparation of the official certification report, which described steps taken and acknowledged steps not taken in the five Section 8121(b) certification areas. After the briefing, the Deputy CIO coordinated the certification report with, and obtained endorsement from, numerous DoD and OSD staff offices. On June 28, 2000, the DoD CIO certified to Congress that the DIMHRS program was being developed in accordance with CCA as described in the certification report .

Section 8121(b) Certification Areas

Certification of the DIMHRS program was warranted because the JPMO and the JR&IO took appropriate steps prior to Milestone I in four of the five Section 8121(b) interest areas. The JPMO and the JR&IO performed substantial and sufficient work in the areas of BPR, AoA, and economic analysis, especially considering the DIMHRS acquisition strategy. Although CCA encourages an organization to perform BPR, AoA, and an economic analysis early in the acquisition process, DoD acquisition guidance discourages major acquisition expenditures prior to Milestone I. Therefore, DIMHRS program officials were not authorized to obtain the PeopleSoft COTS product until several months after the Milestone I approval. As a result, the DIMHRS program officials did not have detailed knowledge of the capabilities and limitations of the COTS software product needed to complete the BPR, AoA, and economic analysis. The JPMO also performed substantial and sufficient work in the area of information assurance at Milestone I, but the JR&IO had not demonstrated sufficient progress towards establishing functional performance measures for DIMHRS by Milestone I.

Business Process Reengineering. As of Milestone I in October 2000, the JR&IO took reasonable steps to reengineer DoD military personnel management business processes and had a reasonable approach for ensuring that the selected COTS software product fit the JR&IO “as-is” and “to-be” models. However, because DoD acquisition rules do not permit selection of a COTS product prior to Milestone I, the DIMHRS officials did not acquire the COTS software product until March 2001 and were unable to complete detailed BPR analyses before Milestone I. The JR&IO made extensive efforts to reengineer business processes for military personnel before and during the COTS selection process. Specifically, the JR&IO prepared high-level “as-is” and “to-be” models prior to the selection of the PeopleSoft COTS software product, but the JR&IO was unable to complete detailed BPR because the capabilities of the COTS software product, which may have significant impact on the “to-be” processes, had not been evaluated and defined.

From FY 1998 through FY 2000, the JR&IO spent about \$11 million on BPR. The JR&IO high-level “as-is” model documented the capabilities of the legacy systems, and the “to-be” model described the department-level requirements for military personnel and pay. A focus group representing the Services, Defense agencies, Joint Staff, and OSD proponents incorporated the process modeling results into the source selection criteria to help ensure the selection of a COTS software product that best met projected DoD requirements. In March 2001, the Naval Sea Systems Command, on behalf of the JPMO, awarded a one-year COTS Enterprise License to PeopleSoft for test and evaluation purposes. The JPMO and the JR&IO planned to perform a detailed analysis of the PeopleSoft COTS software product before March 2002 to determine how well it fits the JR&IO “to-be” processes and to evaluate whether DoD should adopt the inherent software processes. Overall, the JPMO and the JR&IO made sufficient progress in the area of BPR for the DIMHRS program.

Analysis of Alternatives and Economic Analysis. An AoA and economic analysis are directly related. Effective use of an AoA, in conjunction with an economic analysis, provides program managers a viable basis for evaluating alternatives. Once the field of possible solutions is narrowed to a few realistic alternatives, then the principles of economic analysis and its tools of cost/benefit analysis and return-on-investment are applied to offer the most promising alternative solution.

The JR&IO prepared an AoA and the JPMO prepared the Preliminary Economic Analysis prior to Milestone I. However, both documents were incomplete and needed to be updated before Milestone B because the specific capabilities of the COTS software product had not been evaluated or defined. The amount of modifications that will be required to adapt the COTS software product for DoD use will depend on the inherent capabilities of that product. Further, the ultimate cost of DIMHRS will depend on the amount and type of modifications that are made. Consequently, the JR&IO and the JPMO will not have the detailed cost information needed to complete the AoA and economic analysis until the JPMO completes the evaluation and definition of the capabilities of the PeopleSoft product.

Analysis of Alternatives. The AoA prepared for Milestone I, dated December 9, 1999, did not consider all feasible alternatives and did not include a cost benefit analyses for each alternative considered. The Milestone I AoA did not consider four technical alternatives discussed in a November 1999 Institute for Defense Analyses draft report, "An Independent Review of the Defense Integrated Military Human Resources System (DIMHRS)". Those four technical alternatives included:

- a common database structure plus service-unique functional software;
- a common database structure plus largely common functional software obtained by modifying the system(s) of one of the Services;
- a common database structure plus largely common functional software obtained by customizing an integrated COTS human resources product (known as the "buy" alternative); and
- a common database structure plus largely common functional software obtained by Government integrating a mix of COTS, Government-off-the-shelf, and a newly developed product (known as the "build" alternative).

During the Milestone I review process, the DoD CIO established exit criteria that required the JR&IO to update the AoA prior to Milestone B approval. According to the Milestone I acquisition decision memorandum of October 27, 2000, the updated AoA should document the rationale for eliminating alternatives not fully analyzed in the Milestone I AoA, evaluate the remaining alternatives, provide a complete cost benefit analysis and a return-on-investment calculation for the most viable alternatives, and recommend a preferred alternative. Since Milestone I, the JR&IO prepared a revised AoA, dated March 14, 2001. Although still in draft form, the revised AoA provided more

information than the Milestone I AoA. The revised AoA described all the alternatives that were considered (including the four technical alternatives evaluated by the Institute for Defense Analyses), documented the rationale for eliminating alternatives without a comprehensive cost benefit analysis, and provided a tradeoff analysis on the two viable alternatives, “buy” and “build.” However, the revised AoA lacked the detailed cost benefit analysis needed to choose between the two alternatives because the JPMO and the JR&IO had not thoroughly explored and defined the capabilities and limitations of the PeopleSoft COTS software product.

Economic Analysis. The Preliminary Economic Analysis, dated July 7, 1999, and prepared for Milestone I, was incomplete because the JPMO and the JR&IO had not officially selected the preferred alternative and had not completed development of legacy systems cost data, migration strategy schedules, and the Cost Analysis Requirements Description. Additionally, the Preliminary Economic Analysis was not supported by an independent component cost analysis and the life-cycle cost estimate included costs for only 42 of the 80 legacy systems that DIMHRS would replace. According to the Preliminary Economic Analysis, DIMHRS life-cycle costs ranged from \$1.4 billion to \$2.5 billion and life-cycle benefits ranged from \$2.1 billion to \$2.9 billion. The Preliminary Economic Analysis acknowledged that it needed to be updated as the legacy cost data collection was completed and as the program became better defined. Specifically, the cost and benefit estimates needed refinement before the Milestone B decision. However, the Preliminary Economic Analysis concluded that the initial positive return on investment projections were encouraging, that additional qualitative benefits would be realized, and that further program definition and risk reduction were justified.

Because weaknesses related to economic analysis existed when the DIMHRS program received Milestone I approval, the DoD CIO issued exit criteria to ensure that the DIMHRS program would meet the intent of the CCA economic analysis requirements before Milestone B. Specifically, the Milestone I acquisition decision memorandum required the development of an economic analysis and a component cost analysis for the preferred DIMHRS alternative before Milestone B approval. According to the acquisition decision memorandum, the economic analysis should capture the total cost of ownership to include infrastructure and operating costs for the Military Services. However, as of February 2002, the JPMO was not able to provide more definitive estimated costs for DIMHRS because the capabilities and limitations of the PeopleSoft COTS software product still had not been thoroughly explored and defined.

Information Assurance. The JPMO developed a reasonable plan and approach for the DIMHRS system security. Specifically, the JPMO made substantial progress in developing the System Security Authorization Agreement prior to Milestone I. Additionally, the DoD CIO took action to ensure that the information assurance posture of DIMHRS progressed even further prior to Milestone B. During the Milestone I review, the DoD CIO required that the DIMHRS program officials appoint a designated approving authority, update the System Security Authorization Agreement, and brief an overall security plan to the Infrastructure and Information Assurance Directorate, Office of the Assistant

Secretary of Defense (Command, Control, Communications, and Intelligence) prior to Milestone B, in July 2002. The DoD CIO also required program officials to update the Test and Evaluation Master Plan and submit the results of the designated approving authority review. The JPMO appointed a designated approving authority in June 2001; however, the JPMO had not completed the System Security Authorization Agreement and had not prepared the security plan. The DoD CIO needs to ensure that those requirements are met prior to Milestone B.

Performance Measures. At Milestone I, in October 2000, the JR&IO had not made sufficient progress towards establishing functional performance measures. Additionally, the DoD CIO and other OSD oversight officials did not identify any performance measure weaknesses or deficiencies during the Milestone I review. Consequently, the DoD CIO did not establish any performance measure-related exit criteria to ensure that the JR&IO developed functional performance measures. Further, the compliance and certification reports prepared for DIMHRS did not specifically identify the functional performance measures for the system. Instead, those reports listed examples of performance-related information that was included in various other program documents, such as the operational requirements document. Additionally, the JR&IO provided no supporting documentation to the DoD CIO to document the development of functional performance measures.

Functional performance measures help measure the gains and benefits realized by the development of new information technology systems such as DIMHRS. To measure those gains, the JR&IO must first define what to measure. The established performance measures must be standard throughout the DoD. It is a complicated process because each Military Service already uses different processes and information systems to accomplish personnel needs. After deciding upon standard performance measures, the JR&IO must baseline the current processes used by the legacy personnel systems in functional quantitative terms. DIMHRS will replace about 80 legacy personnel systems. Finally, the JR&IO needs to begin planning how to measure the performance of the new information system, DIMHRS, in functional quantitative terms; however, JR&IO had not identified what to measure, had not baselined the legacy systems, and had not begun to develop functional performance measures to quantitatively evaluate the performance gains provided by DIMHRS.

Effective Oversight

The DoD CIO and other OSD oversight officials met the intent of CCA by providing effective oversight of the DIMHRS acquisition. The DoD CIO and OSD staff offices ensured that the DIMHRS program developed the appropriate program documentation at Milestone I, identified weaknesses in those program documents, and established exit criteria to ensure correction of those weaknesses before the Milestone B decision.

During the Milestone I review process, the DoD CIO and other OSD staff offices identified weaknesses related to AoA, economic analysis, information assurance, and several other areas. To correct those deficiencies, the DoD CIO

included exit criteria in the October 2000 Milestone I acquisition decision memorandum that required the DIMHRS program officials to update the AoA, economic analysis, and System Security Authorization Agreement; conduct a component cost analysis; appoint a designated approving authority; and brief an overall security plan to the Infrastructure and Information Assurance Directorate. See Appendix D for a complete list of the exit criteria required to be completed before Milestone B.

Conclusion

Milestone B for DIMHRS will require careful preparation and decision-making. DIMHRS program officials were not authorized to acquire a COTS software product before Milestone I. Therefore, the DIMHRS program officials were unable to evaluate and define the capabilities that the COTS product could provide. As a result, many items that generally would have been completed by Milestone I, such as BPR, AoA, and economic analysis, were deferred until the next phase of the acquisition. In addition, the JPMO and the JR&IO needed to make further progress in the areas of information assurance and performance measures during the Concept and Technology Development phase. The DoD CIO established appropriate exit criteria related to the AoA, the economic analysis, and information assurance that must be met before Milestone B. In addition, the JPMO and the JR&IO must complete the remaining work in the five Section 8121(b) certification areas. Implementation of Recommendation B and the recommendations in finding A will help facilitate DIHMRS compliance with the CCA at Milestone B.

Management Comments on the Finding and Audit Response

Management Comments. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) concurred and stated that the office would ensure that the DIMHRS would comply with CCA requirements prior to Milestone B.

The Under Secretary of Defense for Personnel and Readiness (the Under Secretary) concurred and also commented on several areas of the report background and finding discussion that required correction or clarification. As to the system description provided in the background, the Under Secretary asked that we clarify that only the functionality of the replaced systems will be included in DIMHRS and that we describe actions to re-baseline the DIMHRS program. Regarding the finding discussion, the Under Secretary indicated that we attributed acquisition roles and responsibilities to the wrong offices, that it is not reasonable to expect “definitive” cost estimates in the AoA at the current stage the DIMHRS development, and described progress to establish functional performance measures for DIHMRS.

Audit Response. We agree with the Under Secretary’s comments concerning background and acquisition roles, and we revised this final report accordingly. However, we do not agree with management comments about the definitiveness

of DIMHRS cost estimates and the effort required to establish effective functional performance measures. While we agree that actual DIMHRS costs cannot be identified before implementation, we reiterate that more defined and refined DIMHRS cost estimates will become available upon completion of the evaluation of the PeopleSoft software package.

Recommendations, Management Comments, and Audit Response

B. We recommend that the Director, Joint Requirements and Integration Office develop a schedule and action plan to establish functional performance measures for the Defense Integrated Military Human Resources System program by Milestone B.

Management Comments. The Under Secretary concurred and stated that the Joint Requirements and Integration Office had developed a draft Performance Measurement Plan that was being coordinated. The Plan will meet the requirements of the Clinger-Cohen Act and the Government Performance and Results Act and provide essential measures of performance in terms of accuracy and timeliness. Further, adoption of existing measures for pay and personnel operations provides a baseline and the ability to do trend analyses.

Audit Response. Management comments meet the intent of the recommendation and no further comments are required. We commend the Joint Requirements and Integration Office for quickly developing a draft performance measurement plan. However, we urge caution in the adoption of measures for existing personnel management processes as a baseline against which the functional gains of DIMHRS will be determined. Because existing functional processes are so divergent across DoD Components, a comparison between existing processes and the future “standard” processes of DIMHRS may not provide useful information. The use of benchmarking may provide a better baseline for assessing future functional improvements obtained through DIMHRS.

Appendix A. Scope and Methodology

Scope and Methodology

We evaluated the basis for the DIMHRS Milestone I certification made to Congress in response to Section 8121(b) and the effectiveness of oversight provided by the DoD CIO and other OSD staff offices with oversight responsibility. During our review of the Milestone I Clinger-Cohen Act certification, we became aware of substantial program management risks. As a result, we also examined acquisition management issues including the DIMHRS COTS modification expectations, cost and schedule estimates, and plans for meeting user needs.

Specifically, we reviewed the certification process including the compliance report prepared by the JPMO, briefing charts used to brief the Deputy CIO on the DIMHRS certification process, and the certification report submitted to Congress. We examined the documentation supporting the DoD CIO confirmation that steps were taken with respect to BPR, AoA, economic analysis, performance measures, and information assurance covering February 1998 to January 2002. We also reviewed key acquisition documentation prepared for the Milestone I review on October 27, 2000, and the acquisition decision memorandum issued for that milestone review. Finally, we discussed various aspects of the DIMHRS certification process and acquisition management issues with various DoD acquisition and functional officials, including the staff of the JPMO, staff of the Director, JR&IO, staff of the Office of the DoD CIO, and the staff of the Director, Program Analysis and Evaluation.

General Accounting Office High-Risk Area. The General Accounting Office has identified several high-risk areas in DoD. This report provides coverage of the Information Management and Technology high-risk area.

Audit Dates and Standards. We performed this audit from January 2001 through March 2002 in accordance with generally accepted government auditing standards.

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

Use of Technical Assistance. We received technical assistance from a computer engineer in the Technical Assessment Division, Audit Followup and Technical Support Directorate. The computer engineer reviewed the DIMHRS program documentation on information security and testing. Specifically, the computer engineer reviewed the Test and Evaluation Master Plan; Command, Control, Communications, Computers, and Intelligence Support Plan; and the System Security Authorization Agreement.

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

Prior Coverage

During the last 5 years, the Inspector General of the Department of Defense (IG DoD) issued two reports relating to CCA certifications.

IG DoD Audit Report No. D-2001-137, "Certification of the Defense Civilian Personnel Data System," June 7, 2001

IG DoD Audit Report No. D-2002-103, "Certification of the Reserve Component Automation System," June 14, 2002

Appendix B. Clinger-Cohen Act of 1996

In the mid-1990s, Congress passed several items of reform legislation designed to improve the management and performance of Federal agencies. The reform legislation responded to the inability of Federal agencies to effectively manage the development and production of information technology systems that met the needs of functional users.

One major reform initiative was the Information Technology Management Reform Act of 1996, which was subsequently retitled the Clinger-Cohen Act of 1996.

CCA requires Federal agencies to focus on the results achieved through information technology investments while streamlining the Federal information technology procurement process. Specifically, CCA introduced additional precision and structure into the way that agencies approach the selection, acquisition, and management of information technology. One of the primary requirements of CCA was the establishment of the position of the Chief Information Officer for each Federal agency.

To comply with this requirement, in June 1997, the Secretary of Defense designated the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) as the DoD CIO and conferred the authority and responsibility for implementing several aspects of CCA to the Assistant Secretary. The DoD CIO responsibilities include the following:

- designing and implementing a process for maximizing the value and assessing and managing the risks of DoD information technology acquisitions,
- institutionalizing performance- and results-based information technology management, and
- providing advice and other assistance to the Secretary of Defense and other senior DoD managers to ensure that the acquisition of information technology and information resources was managed in accordance with the policies of CCA.

The Secretary of Defense also made the DoD CIO responsible for the management and oversight of all DoD information technology systems. Specific responsibilities included overseeing the performance of information technology programs and measuring program progress through system milestone reviews.

Appendix C. Defense Integrated Military Human Resources System Background

Legacy Systems. Since the advent of data automation, the Military Services managed personnel resources with automated systems developed by the individual Services. Although there were process reasons why the systems would vary because of differences in the areas of mission, programs, or implementing legislation, many of the variations were simply the result of different Services developing systems at different points in time with little interface or knowledge of other Service systems. Thus, in the 1990s, DoD had a multitude of unique core personnel field level and headquarters systems.

Desert Shield/Storm. Operations Desert Shield and Desert Storm in 1990 and 1991 highlighted many inadequacies in DoD personnel systems. For example, commanders of joint forces lacked accurate information on the capabilities and location of available personnel, which hindered assessments of operational capabilities and optimal use of human resources. For OSD, the difficulty in integrating the Services unique data elements into meaningful information presented problems in monitoring deployments, responding to needs of family members, and implementing needed personnel policies. The Services continued to encounter problems in identifying activated Reservists and National Guardsmen, and obtaining connectivity between active duty, Reserve and National Guard personnel data systems. For Reserve and National Guard members, pay and benefits were often delayed or inaccurate, and personnel records did not always reflect credit for full service. Other Federal agencies, such as the Department of Veterans Affairs and Health and Human Services, relied on DoD to provide information for analyses and calculations of benefits. Accurate and timely data were not always available to support their needs. These major problem areas were documented in the DIMHRS mission need statement, dated February 24, 1998.

Defense Science Board Task Force. In late 1995, the Under Secretary of Defense for Personnel and Readiness, the Under Secretary of Defense (Comptroller), and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) asked the Under Secretary of Defense for Acquisition and Technology to establish a Defense Science Board Task Force on Military Personnel Information Management to advise the Secretary of Defense on the best strategy for automated support to military personnel and pay functions. After a full review of existing and planned Service-specific systems and a wide range of alternatives, the Task Force addressed those issues and published its report in August 1996. The Task Force documented specific alternatives and considered rationale used to develop recommendations and conclusions in August 1996. A key conclusion of the Task Force stated:

The Task Force has unanimously concluded that the present situation, in which the Services develop and maintain multiple Service-unique military personnel and pay systems, has led to significant functional shortcomings (particularly in the joint arena) and excessive costs for

system development and maintenance for the Department of Defense. Moreover, it is clear to the members that there are no technical, functional, or programmatic barriers, which preclude the realization of a common system that can support all Services and all components. These conclusions were also supported by the Services.

The Deputy Secretary of Defense decided, with coordination from the Military Departments, the Joint Staff, and several OSD offices, to implement the Task Force recommendations. The Deputy Secretary of Defense decisions were documented in several Program Budget Decisions, Program Decision Memorandum, and a July 8, 1997, memorandum that established JR&IO. The July 1997 memorandum also assigned implementation responsibilities to JR&IO, under the auspices of the Under Secretary of Defense for Personnel and Readiness, and the Commander, Naval Reserve Force, as the acquisition executive agent.

Proposed System. To fulfill the needs and overcome the problems outlined in the mission needs statement, an Acquisition Category IA major automated information system was proposed. DIMHRS will serve as a standard, single military personnel and pay management system. It would be based on an extensive reengineering of business practices that captured the best of both private and public sectors. DIMHRS would also provide support to the set of core processes that were common to all Services. The core system should collect, store, pass, process, and report personnel and pay data for all DoD active duty, Reserve, National Guard, and retired personnel. Any processes supported by targeted legacy systems would also be supported by DIMHRS. If legacy processes are not included in the set of core processes, then those processes would be included in DIMHRS as Service-specific functionality. Although the Services retained congressionally mandated Title 10 (Armed Forces) and Title 32 (National Guard) responsibilities, DIMHRS will provide common core functionality, common information and data exchange, and associated common core database capabilities supplemented by Service-specific needs. Common software and databases serve as the foundation of DIMHRS in that the databases will make DIMHRS operate in a single integrated approach, over time. This core capability will support multi-component, Service, joint, and combined task organized forces. Personnel asset visibility, as part of total asset visibility, will remain the critical minimum essential capability.

Appendix D. Exit Criteria for Milestone B

The Milestone I acquisition decision memorandum required the DIMHRS program officials to provide the following approved documentation to the Overarching Integrated Product Team Leader prior to Milestone B approval.

Milestone B Exit Criteria

- An updated AoA for DIMHRS Executive Steering Committee approval and Clinger-Cohen Act Certification. This update should focus on the full program and provide:
 - A complete cost benefit (to include mission benefits) analysis for the most viable DIMHRS alternatives, documenting the rationale for eliminating alternatives not fully analyzed in the earlier update.
 - A comprehensive return-on-investment calculation for the alternatives.
- A migration strategy for the transition of legacy systems
- An approved acquisition program baseline, acquisition strategy plan, and the command, control, communications, computers, and intelligence support plan
- An economic analysis for the preferred DIMHRS alternative (selected in the AoA and refined by subsequent decisions) relative to the status quo. This economic analysis should capture the total cost of ownership, to include Military Department unique infrastructure and operating costs. Document the risk and feasibility of technical design and architecture alternatives through engineering and design studies and prototyping.
- A component cost analysis for the preferred DIMHRS alternative.
- An updated test and evaluation master plan. The test and evaluation master plan must be reviewed and approved by the Overarching Integrated Product Team Leader and the Director, Operational Test and Evaluation. In addition to validating the technical performance aspects of the program, the test and evaluation master plan must provide a comprehensive test and evaluation strategy for validating the user operational performance requirements, including interoperability and security.
- A System Security Authorization Agreement and the results of the designated approving authority review. Upon approval of the System Security Authorization Agreement, provide a briefing to the Infrastructure and Information Assurance Directorate of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) on overall security plan including milestones for incorporating DoD public key infrastructure mandates.
- Certification that the program complies with the Clinger-Cohen Act.

Appendix E. Summary of Management Comments and Audit Response

The Under Secretary of Defense for Personnel and Readiness (the Under Secretary) provided comments on the draft report that cited inaccuracies and identified items requiring correction for finding A. The cited inaccuracies primarily related to the discussions of DIMHRS justification, legacy personnel system improvements, and further exploration of viable alternatives. Further, the Director for Manpower and Personnel, Joint Chiefs of Staff, commented that his staff was not accurately quoted and that the draft report conclusion regarding the military need for increased personnel asset visibility was not correct. The following summarizes management comments on each of those topics and the associated audit response.

Management Comments Regarding DIMHRS Justification. The Under Secretary stated that the draft report was mistaken in stating that the primary justification for DIMHRS was to satisfy the operational need of joint forces commanders for personnel asset visibility and to capture potential economies and efficiencies. Support to the commander is only one of several essential requirements. Other primary deficiencies, related to pay, reserve forces, and OSD and other agency needs, are set forth in high-level requirements documents, such as the Mission Need Statement and the Operational Requirements Document.

Audit Response. We are fully aware that personnel asset visibility is not the only justification for DIMHRS and have revised this final report to describe personnel asset visibility as one of the major justifications for DIMHRS.

Management Comments Regarding Legacy System Improvements. The Under Secretary disagreed that subsequent improvements to the Military Services' legacy personnel systems have largely remedied the personnel asset visibility problems experienced during the Persian Gulf War, stating that there have been no improvements to Service legacy systems to address the problem.

The Director of Manpower and Personnel, Joint Chiefs of Staff, indicated that we did not accurately present statements made by his staff in the draft report and that our conclusion about the operational need for increased personnel asset visibility was incorrect.

Audit Response. There are several indicators that the legacy systems have sufficiently evolved to overcome the critical operational problems identified during the Gulf War. For example, the 1999 analysis of alternatives states:

. . . Some in the Services believe that Service-unique programs could provide many of the benefits of DIMHRS more quickly and at less cost to them. Some Services have already solved within their Service several of the problems DIMHRS is intended to solve (or they believe they will have done so when ongoing programs are completed).

Further, as discussed in finding A, the Navy and Air Force have made major modifications to their legacy systems since the Gulf War. If sufficient visibility over personnel assets was not provided to the Combatant Commanders by the legacy systems, it stands to reason that funding would have been identified to field the Joint Personnel Asset Visibility capability.

As to the Director of Manpower and Personnel comments, we agree that the statement regarding the receipt of few recent complaints from the Unified Commands about personnel asset visibility was not presented in the proper context and may have been misleading. In preparing the final report, we omitted references to any discussions with Joint Staff Personnel.

Management Comments Regarding Further Exploration of Alternatives.

The Under Secretary stated that it was his responsibility to thoroughly evaluate alternative solutions and to determine which ones are viable. In meeting that responsibility, the alternative of a common database fed by the legacy systems was not considered to be viable. The AoA in support of Milestone B is currently being updated to better support that determination. The findings of the Defense Science Board Task Force 1996 report, the independent analysis of alternatives by the Institute for Defense Analysis in 1999, and the DoD AoA in 2001 all reached the same basic conclusion: replacing or extensively modifying each Service system would take longer, cost more, and be less likely to produce uniform results than a single, standard system.

Management stated that a common database approach would solve none of the deficiencies cited in system requirements documents. Further, DoD already has a central database that is fed by the legacy systems. However, management indicated that the information in that database was only as good as the information fed to it. The legacy systems data are not commonly defined, accurate, or timely. Without a common meaning, the use of collected data for tactical, business, and personnel planning are limited. Accordingly, use of the legacy systems to populate a common database would require the redesign of each system to reflect a common meaning of data.

Audit Response. We agree with the Under Secretary as to his responsibilities. We also agree with the stated findings of the three studies of DIMHRS alternatives. The 1996 Defense Science Board Task Force study recommended that DoD move to a single, COTS-based military personnel management system, with initial fielding in 2001 or earlier. The Task Force also recommended that planned Navy and Air Force personnel system modernization efforts be refocused on the objective system. However, as discussed in the report, the Navy and Air Force continued in their individual modernization efforts and spent hundreds of millions of dollars toward those ends.

The Defense Science Board Task Force did not develop an economic analysis to support their conclusions. As discussed in the report on pages 17 and 18, neither the 1999 nor the 2001 AoA studies provided cost/benefit analyses of any system approach other than a “build” or “buy” COTS-based, single-system solution because any other approach was considered to be too expensive or would not meet all requirements. Our primary concern is that no cost and requirements

tradeoff studies were performed for possible approaches that did not meet all requirements. One approach that admittedly may not meet all requirements, but may cost considerably less, involves establishing a common database that is fed by the legacy systems.

We also agree with the Under Secretary on the importance of common data. However, it does not necessarily follow that a new, single DoD system has to be developed and implemented in order to achieve data standardization. If a common database were established with standard data definitions, data used by the legacy systems could be translated to the standardized definition before being fed to the common database. That approach may not meet all present DIMHRS requirements, but it does offer potentially substantial economic and user-acceptance advantages. While we are not endorsing that approach, or any other, it deserves further consideration rather than being dismissed because it does not accommodate all system requirements or objectives.

Appendix F. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition, Technology, and Logistics
Under Secretary of Defense (Comptroller/Chief Financial Officer)
 Deputy Chief Financial Officer
 Deputy Comptroller (Program/Budget)
 Director, Program Analysis and Evaluation
Under Secretary of Defense for Personnel and Readiness
 Deputy Under Secretary of Defense for Program Integration
 Director, Joint Requirements and Integration Office
 Deputy Assistant Secretary of Defense (Military Personnel Policy)
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
 Deputy Assistant Secretary of Defense, Deputy Chief Information Officer
 Director, Investments and Acquisition

Joint Staff

Director, Joint Staff
 Director, Manpower and Personnel
 Director, Command, Control, Communications, and Computer Systems
 Director, Force Structure, Resources and Assessment

Department of the Army

Deputy Chief of Staff for Personnel
Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Research, Development, and Acquisition)
 Deputy Assistant Secretary of the Navy (Command, Control, Communications,
 Computers, and Information/Electronic Warfare/Space)
 Program Executive Officer for Information Technology
 Program Manager, Defense Integrated Military Human Resources System
Naval Inspector General
Deputy Chief of Naval Operations (Manpower and Personnel)
Deputy Commandant for Manpower and Reserve Affairs
Auditor General, Department of the Navy
Commander, Space and Naval Warfare Systems Command

Department of the Air Force

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

Other Defense Organizations

Director, Defense Finance and Accounting Services
Director, Defense Logistics Agency

Non-Defense Federal Organizations

Office of Management and Budget
National Security Division
Office of Information and Regulatory Affairs

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, and 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 Readiness and Personnel Comments



PERSONNEL AND
READINESS

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

APR 15 2002

MEMORANDUM FOR DOD INSPECTOR GENERAL

SUBJECT: Draft Audit Report on Acquisition Management and Clinger-Cohen Act Certification on the Defense Integrated Military Human Resources System (Project No. D2000AS-0212.002)

Thank you for the opportunity to respond to your memorandum of March 5, 2002, which provided the draft report for review and comment. In general, we concur with the report as a whole. We partially concur or concur with comment on each of the recommendations. A response on each recommendation and some detailed corrections with additional information are provided as attachments.

We fully agree with the basic finding of the report, that the Clinger-Cohen requirements are being executed faithfully by my office, by the Navy's Program Executive Officer for Information Technology, and by the DoD Chief Information Officer. Most of our comments in the attachments reflect three basic areas where the report is in error and which contribute to portions of the recommendations.

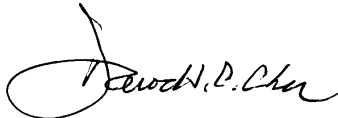
First, the report states that, other than economies and efficiencies, the primary justification for DIMHRS was to meet the joint forces commanders' operational needs for personnel asset visibility. That is not correct. Although operational personnel asset visibility is one of the major objectives, it is not the only one. Other deficiencies (associated with pay, reserve forces, OSD and other agency needs) are defined in the Mission Need Statement (MNS) and the Operational Requirements Document (ORD).

Second, the report states that recent improvements to the legacy personnel systems largely remedied the prior personnel asset visibility problems experienced by joint forces commanders. This is not correct. Although there have been some changes to some of the legacy personnel systems, none have addressed this problem. Further, representatives of the Director for Manpower and Personnel, Office of the Joint Chiefs of Staff have told us that their comments were misinterpreted and they have sent you a separate response to the report.



Third, the report suggests that a database only solution is a viable solution for DIMHRS. This is not correct. As the functional sponsor, it is my responsibility to ensure that alternative solutions have been identified and thoroughly examined before determining which ones are viable and should be subject to an intensive analysis by our acquisition agent. The Analysis of Alternatives (AoA) currently being updated to incorporate the most current information available will be submitted in support of the Milestone B review. The regulatory requirements for Milestone B, as well as the direction provided in prior Acquisition Decision Memorandums, are being satisfied. A database only solution will solve none of the deficiencies stated in the MNS and the ORD. Further, the Department already has a central database that is maintained by the Defense Manpower Data Center and is fed by the legacy systems. The exploration of the alternatives and the determination of the viable alternatives are documented in the AoA. This document was in final coordination when the deployment strategy changed. Updates to the deployment strategy will be incorporated into the AoA, but will not change the basic findings with respect to the selection of viable alternatives.

I concur in the report's basic concern that, as required by the best interests of the Department as well as Clinger-Cohen, the program demonstrate its value before entering the design and development process. The Department showed its belief in the requirement for DIMHRS last December when full funding was provided during the programming and budget process. Hopefully our comments will ensure that the report makes its points accurately and fairly before reaching a broader audience. Our response has been coordinated with the Joint Staff, the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), and with the Navy's Program Executive Officer for Information Technology. Ms. Norma St.Claire is my point of contact for DIMHRS and will provide any additional information you may require. She can be reached at 703-696-8710.



David S. C. Chu

Attachments:
As stated

RESPONSE TO RECOMMENDATIONS
ACQUISITION MANAGEMENT AND CLINGER-COHEN ACT
CERTIFICATION OF THE
DEFENSE INTEGRATED MILITARY HUMAN RESOURCES SYSTEM
(DIMHRS)

PROJECT NO. D2000AS-0212.002

A.1. We recommend that the Program Executive Officer for Information Technology provide an analysis on the cost effectiveness of the Defense Integrated Military Human Resources System to include an analysis of other viable program alternatives to the Milestone Decision Authority before a Milestone B decision. Other viable program alternatives include those that may not provide all of the benefits of the currently planned system, but that may involve significantly less cost and risk, such as the alternative of a common database fed by the Service's legacy systems.

Partially Concur with Comment: The Program Executive Office for Information Technology (PEO(IT)), will complete a full analysis on the viable program alternatives. However, it is not appropriate for the PEO(IT) to undertake analyses of program alternatives which the functional community has evaluated and determined to be unresponsive to the objectives of the Mission Need Statement and the Operational Requirements Documents (ORD). Both of these documents have been validated by the Joint Requirements Oversight Council, with the Milestone B ORD validated in August 2001. The Director, Joint Requirements and Integration Office and the Deputy PEO(IT) co-chaired the Analysis of Alternatives (AoA) Task Force, which considered many alternatives, including a common database. The functional community found that a solution based only on a common database would not be responsive to requirements and is not viable. None (not one) of the deficiencies listed in the MNS or the ORD are resolved by the development of a common database.

In the summer of 2001, a change in the deployment strategy was proposed and accepted, which now requires that the cost figures in the AoA be updated before final approval. The functional requirements of the program did not change, nor was there any change in the basic strategy – implementation of a COTS package, with the emphasis on the Services' adoption of world class business practices rather than making the COTS adapt to pre-existing, non-standard business practices and data elements. The significant change is in the costing of the revised IT development and implementation schedule. The AoA will be updated with the revised costs and schedule, but is otherwise still viable. The Economic Analysis that was near final last summer will also be updated.

While it is true that if DoD had an accessible, single, common database that included a single comprehensive personnel and pay record of service that had accurate, timely and complete data, all of the deficiencies in the ORD would be addressed. However, the only way to achieve such a database is to have data collection and input systems that provide accurate, timely and complete data. The database cannot be created without input and

access mechanisms. The input and access mechanisms are the field level personnel and pay systems. DoD also has today a capability of taking all of the data collected by the field level personnel and pay systems and collapsing them into a single database. This is done by the Defense Manpower Data Center. The data, however, are not accurate, timely or complete because the systems which collect the data do not support such collection. The legacy data collection systems also do not support the Business Process Reengineering or transformation requirements.

The only way to achieve the single, common, accurate, timely and complete database is to replace the field level systems which collect the data. As noted in the reports, development (and maintenance, which was not addressed) of separate systems has been shown to be very high cost – especially when the choice is to change the COTS rather than adopt to world class business practices. The PEO(IT) is preparing the Economic Analysis and will provide cost information for the (AoA).

A.2 We recommend that the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), before authorizing the development of a common, standardized military personnel management system at Milestone B, determine whether the proposed investment for the Defense Integrated Military Human Resources System program provides the best business solution when compared to alternative solutions for meeting DoD military personnel management needs.

Concur with Comment: The Assistant Secretary of Defense (Command, Control, Communications and Intelligence) (ASD(C3I)), in his role as the Milestone Decision Authority (MDA), ensures that all the requirements bearing on a Milestone decision have been considered. It is the responsibility of the functional community to develop the AoA, which identifies feasible and non-feasible alternatives. It is the responsibility of the PEO(IT) to prepare the Economic Analysis (EA) for the selected alternative, documenting the business case for the program. These documents, prepared in accordance with Program Analysis and Evaluation guidelines, will be coordinated, with the results provided by the Overarching Integrated Product Team which reviews the program for the MDA. On page 15, the report acknowledges that the draft documents were responsive to the guidance and only required additional time to obtain the detailed cost information necessary for evaluation.

A.3 We recommend that the Director of the Joint Requirements and Integration Office, in coordination with the Offices of the Secretaries of the Army, Navy, and Air Force, amend the issue resolution process to provide time frames for elevating and resolving issues that could impact user acceptance of the Defense Integrated Military Human Resources System. To be of maximum benefit, the issue resolution process should be modified before the Milestone B review.

Concur with Comment: The Joint Requirements and Integration Office, in conjunction with the Services, Defense Agencies, and the OSD staff, has developed and implemented an Issue Resolution Process, as noted in the report.

Response time frames for review above the JIG are determined for each issue depending on the perceived complexity of the issue and the criticality of the resolution. Stated policy is that all critical path issues must be resolved within two weeks at each level. The Issue Resolution Process documents will be updated to include that time frame. For non-critical path issues, a six-month time frame will be added. (Non critical path issues will become critical when they threaten progress and will then fall under the two-week rule.) At the January 24 ESC meeting, 29 issues had been targeted for closure. All 29 were closed. An additional 15 issues have been targeted for closure for the April 25 ESC meeting. As of March 18, 2002, the status of issues is:

- 29 Closed
- 20 In-Progress
- 15 Targeted for closure
- 20 Potential Gap issues (on hold for Developer/Implementer evaluation)

B. We recommend that the Director, Joint Requirements and Integration Office, develop a schedule and action plan to establish functional performance measures for the Defense Integrated Military Human Resources System program by Milestone B.

Concur with Comment: The Joint Requirements and Integration Office (JR&IO) has been developing a Performance Measurement Plan (PMP) as a management tool that will meet the requirements of Clinger-Cohen and the Government Performance and Results Act. The plan is now in coordination and will be part of the documentation available for the oversight community to review prior to Milestone B. The plan features performance measures, which are by-products of operations and impose a minimal burden on functional users while providing essential measures of performance in terms of accuracy and timeliness. The adoption of existing measures for pay and personnel operations provides a baseline and the ability to do trend analyses.

CORRECTIONS AND ADDITIONAL INFORMATION
ACQUISITION MANAGEMENT AND CLINGER-COHEN ACT
CERTIFICATION OF THE
DEFENSE INTEGRATED MILITARY HUMAN RESOURCES SYSTEM
(DIMHRS)

PROJECT NO. D2000AS-0212.002

Revised,
page 2

Page 2 – DIMHRS System Description: “Service-specific functionality will be provided by DIMHRS for any processes that were supported by the Services legacy systems that **will be replaced by DIMHRS.**” Adding the additional words clarifies that only the functionality of the systems being replaced will be included in DIMHRS. (Although DIMHRS will replace all core personnel and pay systems, all of the Services have many legacy systems that will not be replaced by DIMHRS and will interface with DIMHRS. These systems have functionality that is not within the scope of the DIMHRS program.)

Revised,
page 3

Page 3 – No meeting with the Overarching Integrated Product Team was held in February 2002. Discussions were held with ASD(C3I) and actions to re-baseline the program are in process.

Revised,
Page 4

Page 4 – Paragraph A. The functional requirements have been coordinated with the Services and Validated by the Joint Requirements Oversight Council. The report states that “planned efforts to limit the DIMHRS functional requirements may adversely impact user acceptance.”

The objective is to satisfy functional requirements by adopting new, reengineered common business practices satisfied by the COTS, using other packages and custom coding where necessary. If every existing business practice is considered a “requirement” then the objective of business process reengineering cannot be realized and personnel and pay management cannot be transformed.

Page 6. “The primary justification for the DoD investment in DIMHRS was to meet the joint force commander’s operational need for personnel asset visibility and to capture the potential economies and efficiencies of a single, integrated military personnel management and pay system. However, the operational need for increased personnel asset visibility was no longer clearly urgent, and alternatives to a single DoD personnel management system have not been thoroughly explored.”

Support to the commander is an essential DIMHRS requirement described in the Mission Need Statement and Operational Requirements Document. However, this is one among many significant requirements that have an impact on the Department, including our ability to determine the entitlements that Service members and their families may have because of the time and location of their service and to ensure accurate and timely pay.

Further, the Joint Staff has submitted a separate response to the draft report, which states that the problem has not been solved. Their response states that the Secretary of Defense,

CJCS, CINCs and J-1 have indicated they would benefit tremendously from a single, common, accurate, timely, and complete database of personnel information. Because the capability does not exist, combatant command staffs are coping as best they can with legacy data that must be collected from various sources and is either dated or inaccurate. In fact, DoD's ability to track and account for deployed personnel has not been greatly improved and this situation will become more and more evident if large numbers of Service members become involved.

It is also inaccurate to say that alternatives have not been thoroughly explored; while 'thoroughly' is a judgmental term, a broadly based Analysis of Alternatives Task Force did evaluate alternatives and determined which had sufficient viability to justify the expenditure of considerable resources as part of a detailed economic analysis. The program functional proponent is responsible for determining the valid set of alternatives.

Page 7. Top paragraph. It states "subsequent improvements to the legacy personnel system largely remedied the prior personnel asset visibility problems experienced by joint force commanders."

There have been no improvements to Service legacy systems that address this problem.

Page 7. Middle paragraph. "The JPMO and the JR&IO did not thoroughly consider the costs and benefits associated with meeting critical military personnel management needs without replacing the legacy systems. In 1999, potential alternatives for DIMHRS were independently assessed. One alternative identified was the establishment of a common database that would be fed by the Service legacy systems; however, the assessors did not develop related costs and benefits for this alternative."

Three separate analyses have resulted in the same findings: The Defense Science Board Task Force in its 1996 report; an independent Analysis of Alternatives by the Institute for Defense Analysis in 1999; and the DoD Analysis of Alternatives in 2001. Replacing or extensively modifying each Service system was deemed to take longer, cost more, and be less likely to produce uniform results than a single, standard system.

Enterprise Resource Planning clearly shows that data is only valuable as information when that data has a common definition. Business Process Re-engineering of data currently collected by the Service components is meant to establish a common meaning of data to be stored and mined to become valuable information. Without this step, and redesigns of the infrastructure and procedures to establish a common meaning, the use of collected data for tactical, business and personnel planning are limited. Therefore, a common database solution alone would not provide accurate, common information. Use of existing legacy feeder systems to populate a common database requires the redesign of each system to reflect the common meaning of data.

Page 9. "The Services, especially the Navy and Air Force, will have little incentive to willingly accept and use DIMHRS if it does not meet system user needs."

Deleted

Deleted

Final Report
Reference

The Service implementations of PeopleSoft (NSIPS) and Oracle (MILMOD) essentially modified the COTS to reflect existing business practices. Because of time and resource limitations, very little consideration was given to changing business processes. These highly modified packages will be expensive to maintain – especially since only one organization is using each version. Another incentive lies in the opportunity to move to new business practices, including joint servicing of military personnel.

Revised,
page 16

Page 13. “...the JR&IO could and should have made further progress towards establishing functional performance measures for DIMHRS by Milestone I.” As noted in the next paragraph on this page, without selecting a COTS it was very difficult to be precise about functional capabilities and changes in business practices. However, functional performance measures were included in the ORD for Milestone I and could be inferred from the Life Cycle Benefits Estimate prepared for Milestone I.

Revised,
page 17

Page 14. “The JPMO and the JR&IO prepared an AoA and Preliminary Economic Analysis prior to Milestone I.” The JR&IO, on behalf of the USD(P&R) who is the functional sponsor of DIMHRS, did the AoA. The JPMO in its acquisition role did the PEA. The functional community has the responsibility to evaluate all possible alternatives and determine which ones are viable for the full cost and benefit analysis required by an EA.

Page 18

Page 15. “However, the revised AoA lacked the detailed cost benefit analysis needed to select a preferred alternative because the JPMO and the JR&IO had not thoroughly explored and defined the capabilities and limitations of the PeopleSoft COTS software product.” Additional analyses of PeopleSoft corroborate the task force findings of July, 2001. Proposed releases of PeopleSoft functionality offer additional opportunities for business reengineering improvements.

Page 18

Page 15. “...as of February 2002, the JPMO was not able to provide more definitive estimated costs for DIMHRS because the capabilities and limitations of the PeopleSoft COTS software product still had not been thoroughly explored and defined.” In February a Cost Analysis Requirements Document was provided to the Service Cost Agencies for review. The costs will always vary as additional information is available – the program office has the requirement to update the economic analysis prior to fielding each useful asset – as well as requirements to provide breaches of the cost baseline when identified. The only really “definitive” costs are available at the Post Implementation Review(s).

Quotation
deleted

Page 16. “Neither the JPMO nor the JR&IO could demonstrate substantial effort in the development of functional performance measures....” It is the responsibility of the functional sponsor, JR&IO, and not the acquisition agent, JPMO, to develop functional performance measures. A draft Performance Measurement Plan was prepared in March 2002, and is in coordination with the functional community.

Revised,
page 19

Page 16. “...the JR&IO must baseline the legacy personnel systems being replaced by DIMHRS in functional quantitative terms.” “...however, JR&IO had not identified what to measure, had not baselined the legacy systems, and had not begun to develop

functional performance measures to quantitatively evaluate the performance gains provided by DIMHRS.” It is not the systems per se but the processes that must be baselined. The proposed performance measures feature personnel and pay quantitative measures now recorded and published by DFAS which provide indicators of timeliness and accuracy – the two key components necessary to satisfy command responsibilities as well as support the Service member. These measures exist today.

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



CHIEF INFORMATION OFFICER

DEPARTMENT OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000
April 10, 2002

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT
DoD OFFICE OF THE INSPECTOR GENERAL

SUBJECT: Audit Report on Acquisition Management and Clinger-Cohen Act
Certification of the Defense Integrated Military Human Resources System
(Project No. D2000AS-0212.002)

Thank you for the opportunity to respond to your March 5, 2002, draft audit report, subject as above. We fully agree with the basic finding of the report that DIMHRS was being developed in accordance with the Clinger-Cohen Act. We will continue to work with the Component CIOs to develop specific criteria to enable uniform assessments of CCA compliance. My office has reviewed the draft report from the perspective of the DoD CIO and our responses are summarized as follows:

DoD CIO **concurs** that sufficient basis was formed to certify that the Defense Integrated Military Human Resources System was being developed in accordance with the Clinger-Cohen Act at Milestone I. We will continue to work with the responsible organizations to ensure that the DIMHRS complies with all acquisition as well as CCA requirements prior to Milestone B.

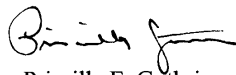
DoD CIO **partially concurs** that the DIMHRS planned Milestone B program schedule may be overly optimistic and the affordability of replacing the Services' legacy personnel systems is questionable because several decisions often made by Milestone I were deferred to the Concept and Technology Development phase. While we agree that the program schedule may be optimistic, DIMHRS fully achieved all acquisition requirements before being granted Milestone I approval to proceed to Phase 1, Program Definition and Risk Reduction, in accordance with DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs," March 15, 1996. As required for this milestone, the DIMHRS selected the most promising system concepts and defined it in terms of initial, broad objectives for cost, schedule, performance software requirements, and overall acquisition strategy. To facilitate these efforts, the Milestone Decision Authority (MDA) in December 1998 (as attached), authorized the program to conduct a pilot to evaluate the feasibility of developing DIMHRS functionality using a COTS product. The COTS product was the PeopleSoft Human Resource (HR) package. An objective of the pilot was to refine the current business case



based on function point size, fit, productivity, cost and other related factors. The results of the pilot were considered in selecting a COTS solution and building the preliminary economic analysis at Milestone I. On page 12, the report acknowledges that during the Milestone I review process, the DoD CIO provided effective oversight of DIMHRS.

DoD CIO **concurs** with the recommendation that before authorizing the development of a common, standardized military personnel management system at Milestone B, the Department must determine whether the proposed investment for the DIMHRS program provides the best business solution when compared to alternative solutions for meeting DoD military personnel management needs. C3I regards the current management and oversight initiative as part of a continuing effort to ensure DIMHRS provides the optimal business solution. Therefore, C3I will continue to consider the recommended alternatives as DIMHRS continue toward implementation in accordance with the DoD 5000 series policies and procedures.

We appreciate the time and effort made by the DoDIG team to review on-going implementation of the Clinger-Cohen Act. If you have any questions, contact the action officer, Mr. Edward Wingfield, (703) 602-0980, x126 or ed.wingfield@osd.mil.



Priscilla E. Guthrie
Deputy Chief Information Officer

Attachment
As Stated

cc:
Deputy Assistant Secretary of Defense
(Program Integration) OUSD(P&R)
Assistant Secretary of the Navy
(Research, Development, and Acquisition)
Program Executive Officer for
Information Technology



COMMAND, CONTROL,
COMMUNICATIONS, AND
INTELLIGENCE

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

December 23, 1998

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (PERSONNEL AND
READINESS)

SUBJECT: Defense Integrated Military Human Resources System (DIMHRS)

The Systems Executive Officer (SEO) for Manpower and Personnel is authorized to conduct a pilot to evaluate the feasibility of developing DIMHRS functionality using a commercial off-the-shelf (COTS) product. Based on a review of your initial business case for this software effort, I am approving an initial expenditure of \$3.25M to complete the software pilot effort. This request will minimize the up-front investment while allowing further evaluation of a COTS product for DIMHRS and refinement of the business case.

The expenditure and pilot are approved based on the following expected benefits and deliverables:

- Incrementally refined business case based on function point size, fit, productivity, cost and other related factors.
- PeopleSoft evaluation copy for Data Base Model, tools, and the Accessions Module.
- Option to purchase PeopleSoft license at a significant discount.
- Option to conduct additional feasibility evaluations of other functionality (i.e., Mobilization, Sustainment, Training, etc.).
- Option to "buy out" full PeopleSoft Human Resource (HR) package at a further discount.

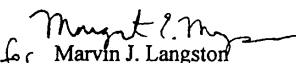
Additionally, the approval of the DIMHRS software pilot effort is subject to the following:

- The DIMHRS Operational Requirements Document will be validated and approved IAW CJCSI 3170.01, June 1997.
- The SEO shall facilitate an independent assessment of the DIMHRS software pilot effort. This software assessment will be sponsored by the Office of the Director, Program Analysis & Evaluation.
- The SEO shall ensure that no PeopleSoft license is purchased beyond the test sites until the system has successfully passed operational test and evaluation.
- The Program Manager (PM) shall ensure that the software pilot is Y2K compliant and assess the impacts of the Y2K problem within the context of the business case.



-
- The PM shall provide monthly status reports to my action officer and provide the IT OIPT Leader a copy of the completed DIMHRS business case by November 30, 1999.

Questions and requests for clarification or additional information should be directed to my action officer, Mr. Edward Wingfield, (703) 604-1583.


for Marvin J. Langston
Deputy Chief Information Officer

cc:
IT OIPT Members

Department of the Navy Comments



DEPARTMENT OF THE NAVY
PROGRAM EXECUTIVE OFFICE
INFORMATION TECHNOLOGY
31 CRYSTAL DRIVE
WASHINGTON VA 224804

IN REPLY REFER TO

15 May 2002

MEMORANDUM

From: Program Executive Office for Information Technology
Enterprise Solutions
To: DOD Inspector General

Subj: DRAFT AUDIT REPORT ON ACQUISITION MANAGEMENT AND
CLINGER-COHEN ACT CERTIFICATION ON THE DEFENSE INTEGRATED
MILITARY HUMAN RESOURCES SYSTEM (PROJECT NO.
D2000AS-0212.002)

Ref: USD (P&R) memo of 15 April 02

1. Concur with comments contained in USD (P&R) memo of
15 April 02.

A handwritten signature in black ink, appearing to read "E. S. ROBERSON".

E. S. ROBERSON

Copy to:
USD(P&R)
OASD(C3I)
Navy IG
DASN(C41/EW/SPACE)

Department of the Air Force Comments



DEPARTMENT OF THE AIR FORCE
WASHINGTON, DC

5 APR 2002

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING OFFICE OF
THE INSPECTOR GENERAL DEPARTMENT OF DEFENSE

FROM: AF/DP
1040 Air Force Pentagon
Washington DC 20330-1040

SUBJECT: DoD IG Draft Report, Acquisition Management and Clinger-Cohen Act
Certification of the Defense Integrated Military Human Resource System
(5 March 2002, D2000AS-0212.002)

1. This is in reply to your information memorandum to the Assistant Secretary of the Air Force (Financial Management and Comptroller).
2. We concur with subject draft report, with particular emphasis on analyzing a "common database" alternative.

A handwritten signature in cursive script, appearing to read "R. Blanchard".

ROGER M. BLANCHARD
Assistant Deputy Chief of Staff,
Personnel

Joint Staff Comments

Final Report
Reference



UNCLASSIFIED

**THE JOINT STAFF
WASHINGTON, DC**

Reply ZIP Code:
20318-1000

25 March 2002

MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL

Subject: Draft Audit Report on Acquisition Management and Clinger Cohen Act Certification on the Defense Integrated Military Human Resources System (Project No. D2000AS-0212.002)

1. Thank you for the opportunity to respond to the report referenced above. While we understand the comments made in the report, they do not reflect those presented during the meeting with the Chief, Personnel Readiness Division. Specifically:

a. Page 6 of the report states: "...the operational need for increased personnel asset visibility was no longer clearly urgent...." In light of current operations, the Secretary of Defense, CJCS, CINCs and J-1s have indicated they would benefit tremendously from a single, common, accurate, timely and complete database of personnel information. Because the capability does not exist, combatant command staffs are coping as best they can with legacy data that must be collected from various sources and is either dated or inaccurate.

b. Page 7 of the report states: "In January 2002, representatives of the Director for Manpower and Personnel, Office of the Joint Chiefs of Staff, stated that the Joint Chiefs had received few recent complaints regarding personnel visibility from the Unified Commands. This is not accurate. Col James was asked if the commands had asked specifically for the Joint Personnel Asset Visibility Program, an application under development in the J-1. His response was that the commands had not asked for the program because we were not able to brief them or demonstrate the capability. It was mentioned that a User's Group meeting which involved all the combatant commands was scheduled for 11-13 Sep 01. While the commands are not "complaining" about a lack of capability, it does not signify they are not interested.

2. As operations continue to expand and become more complicated, it becomes even clearer that a single, common, accurate, timely and complete database that provides the SECDEF, CJCS, CINCs and J-1s complete personnel asset

UNCLASSIFIED

Deleted

Deleted

visibility is a necessity. Our ability in the future to meet increasing operation requirements depends of us taking advantage of technology today to maximize the time available to our forces.

3. My point of contact is LTC Doriot Mascarich, (703) 697-7884.

A handwritten signature in black ink, appearing to read 'R. Smolen', with a large, stylized initial 'R'.

ROBERT L. SMOLEN
Brigadier General
Director for Manpower
and Personnel

Audit Team Members

The Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing of the Department of Defense, prepared this report. Personnel of the Office of the Inspector General of the Department of Defense who contributed to the report are listed below.

Mary L. Ugone
Wanda A. Scott
James W. Hutchinson
James B. Mitchell
Christine L. Haynes
Genea S. Pack
Darryl D. Eubanks
Ann A. Ferrante