

Audit



Report

OFFICE OF THE INSPECTOR GENERAL

OVERSIGHT PROCESS OF THE MAJOR AUTOMATED
INFORMATION SYSTEMS REVIEW COUNCIL

Report No. 95-269

June 30, 1995

Department of Defense

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Acronyms

AIS	Automated Information System
LCM	Life-Cycle Management
MAISRC	Major Automated Information Systems Review Council



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June 30, 1995

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (COMMAND,
CONTROL, COMMUNICATIONS, AND INTELLIGENCE)

Subject: Audit Report on the Oversight Process of the Major Automated Information
Systems Review Council (Report No. 95-269)

We are providing this final report for your review and comments. Management comments on a draft of this report were considered in preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. As a result of management comments, we revised draft Recommendations 4. and 5. (renumbered as Recommendation 6.), which pertain to validation of costs and benefits and procedures and criteria for the oversight of incrementally developed major automated information systems. Also, we renumbered several recommendations to consolidate management comments and audit responses. We request that management provide additional comments on the unresolved recommendations by August 30, 1995. Specific comment requirements are shown in the Management Comments Required table at the end of the finding.

We appreciate the courtesies extended to the audit staff. If you have any questions on this audit, please contact Ms. Mary Lu Ugone, Audit Program Director, at (703) 604-9529 (DSN 664-9529) or Mr. James Hutchinson, Audit Project Manager, at (703) 604-9530 (DSN 664-9530). The distribution of this report is listed in Appendix G. Audit team members are listed inside the back cover.

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Office of the Inspector General, DoD

Report No. 95-269
(Project No. 4RE-5025.01)

June 30, 1995

OVERSIGHT PROCESS OF THE MAJOR AUTOMATED INFORMATION SYSTEMS REVIEW COUNCIL

EXECUTIVE SUMMARY

Introduction. The Major Automated Information Systems Review Council (MAISRC) is chaired by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) and is composed of senior representatives from the Office of the Secretary of Defense. The MAISRC has traditionally provided oversight for DoD business-like, major (high-cost or of special-interest) automated information systems. However, that oversight is changing to include other major automated information systems, such as command and control, communications, and intelligence systems, that support the front-line combatant. During FYs 1995 and 1996, DoD will spend about \$3 billion to develop, modernize, and operate major automated information systems.

Objectives. The audit objective was to determine whether the MAISRC oversight process was effective in supporting DoD's information management goals and initiatives. We also evaluated management controls related to the MAISRC oversight process.

Audit Results. In implementing its information management initiatives, the DoD has changed acquisition methods used to develop or modernize major automated information systems. However, the MAISRC oversight process for DoD's major automated information systems has not yet been similarly reengineered. Revising the MAISRC process would provide DoD the needed assurance that the oversight effectively supports DoD information management goals. Details are in Part II. The audit identified material weaknesses in the MAISRC management control process involving the validation of costs and benefits; when and how systems developed in increments would be tested; and oversight of command and control, communications, and intelligence automated information systems. The management controls assessed are described in Part I, and the weaknesses are discussed in Part II.

Implementation of the recommendations will result in a more effective MAISRC process that supports DoD information management goals. Management will be able to determine monetary benefits when the recommendation on validated costs and benefits is implemented. Appendix E summarizes other potential benefits resulting from the audit.

Summary of Recommendations. We recommend revising DoD regulations to specify procedures that will involve the MAISRC in ongoing DoD Corporate Information Management Initiative efforts and to specify procedures for the MAISRC to use in performing independent assessments of the selection and development of major automated information systems that will be used on a DoD-wide basis. We also recommend revising guidance to specify procedures for performing operational testing and validating costs and benefits of automated information systems developed in increments. We further recommend that key, minimum documentation be determined

for each type of MAISRC review and that oversight responsibility be clarified for command and control, communications, and intelligence major automated information systems.

Management Comments. The Deputy Assistant Secretary (Acquisition), responding for the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), concurred with most of the recommendations. Management stated that guidance would be revised to specify procedures for performing operational testing and for validating costs and benefits of automated information systems developed in increments, to establish key documentation for MAISRC reviews, and to clarify oversight responsibilities for command and control major automated information systems. Also, management would consider clarifying procedures for the oversight of incrementally developed systems. Management did not agree that procedures should be specified to actively involve the MAISRC staff in Corporate Information Management Initiative efforts, including the selection and development of migratory systems.*

Audit Response. As a result of management comments, we revised the recommendations concerning the oversight of incrementally developed systems and enhanced cost and benefit validations to clarify our intent. We believe management needs to implement further action to improve the MAISRC process including more interaction between staff elements, possibly along the lines of the Integrated Product team approach now being introduced in the weapons system area. A discussion of management comments and audit responses is in Part II of the report. The complete text of management comments is in Part IV. We ask that the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) provide additional comments on the final report by August 30, 1995.

*An existing or planned and approved AIS that has been designated to support a functional process on a DoD-wide basis.

Table of Contents

Executive Summary	i
Part I - Introduction	1
Background	2
Objectives	3
Scope and Methodology	3
Management Controls	3
Prior Audits and Other Reviews	4
Part II - Finding and Recommendations	7
Oversight Process for Major Automated Information Systems	8
Part III - Additional Information	23
Appendix A. Major AIS Criteria and Life-Cycle Management Milestone Reviews	24
Appendix B. MAISRC Members, Staff, and Oversight Process	25
Appendix C. Major Automated Information Systems	27
Appendix D. Prior Audits of Major Automated Information Systems	33
Appendix E. Summary of Potential Benefits Resulting From Audit	38
Appendix F. Organizations Visited or Contacted	40
Appendix G. Report Distribution	42
Part IV - Management Comments	45
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments	46

Part I - Introduction

Background

Major Automated Information Systems. Since 1978, the Major Automated Information Systems Review Council (MAISRC) has represented the Secretary of Defense in performing reviews of high-cost or special-interest (major) automated information systems (AISs). An AIS is any combination of information, computer, telecommunications, other information technology, and personnel resources that collect, record, process, store, communicate, retrieve, and display information. The primary purpose of a MAISRC review is to determine whether the acquisition or development of a major AIS should be continued, redirected, or terminated. Appendix A specifies the criteria for a major AIS.

MAISRC Members. The MAISRC is chaired by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) who also serves as the milestone decision authority. Further, the MAISRC is composed of designated Office of the Secretary of Defense Principal Staff Assistants, including those who manage the functional areas supported by the AISs under review; the Joint Staff representative(s); the Senior Acquisition Authority for the AIS program under review; and other members (see Appendix B) selected by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence).

DoD's Corporate Information Management Initiative. Driven by reduced Defense budgets, the need to reduce operating and support costs, and the recognized need for integrated and interoperable AISs, DoD has been changing the way it views, develops, and uses AISs. DoD is changing its focus from individual AISs developed to meet Component-specific requirements to AISs developed to meet DoD-wide requirements. To achieve its information management goals, in 1990 DoD initiated several related efforts that are collectively called the Corporate Information Management Initiative. The ultimate achievement of DoD information management goals is based on four main elements of the Corporate Information Management Initiative.

- o Functional process improvement focuses on using information technology to redefine functional processes to be more directly aligned with desired results.

- o Migration systems are those AISs designated for interim use for functional processes on a DoD-wide basis during the transition from numerous existing (legacy) and nonstandard AISs.

- o Data administration involves the development and DoD-wide use of standard data definitions and the ultimate establishment of DoD "corporate" data bases.

- o The Defense Information Infrastructure encompasses information transfer and processing resources and is envisioned to connect DoD AISs for mission support, command and control, and intelligence through voice, data, imagery, video, and multimedia services.

Although the Corporate Information Management Initiative will involve substantial investment, DoD expects its implementation to result in long-term economies and efficiencies.

Objectives

The audit objective was to determine whether the MAISRC oversight process was effective in supporting DoD's information management goals and initiatives. We also evaluated management controls related to the MAISRC oversight process.

Scope and Methodology

We evaluated the MAISRC oversight process for major AISs. We reviewed DoD guidelines, requirements, and related documentation (dated from March 1988 through January 1995) that applied to AIS life-cycle management and to the oversight of major AISs. We discussed MAISRC review procedures and requirements with MAISRC members and staff. We gathered data on the 53 major AISs (see Appendix C) subject to MAISRC oversight as of August 1994, including FYs 1994 and 1995 program budgets, estimated life-cycle costs, and type and date of the most recent oversight review. Although oversight responsibility for 15 of the 53 major AISs was delegated to DoD Components, our audit focused on the MAISRC oversight process and not the oversight process used by the Components. Also, we coordinated with the responsible Principal Staff Assistants and program managers of major AISs to gain their perspectives of the MAISRC process.

This economy and efficiency audit was performed from April 1994 through January 1995 in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD. The audit included such tests of management controls as were considered necessary. We did not rely on computer-processed data or statistical sampling procedures to achieve the audit objectives. Appendix F lists organizations visited or contacted during the audit.

Management Controls

DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987, requires every DoD organization to have management controls in place for its operations and to perform periodic evaluations of those

Introduction

controls. The MAISRC is, in essence, a management control. We reviewed the MAISRC process and the self-evaluation aspects of DoD Directive 5010.38 as they relate to that process.

Management Controls Reviewed. We reviewed management control procedures used to identify major AISs, documentation of MAISRC reviews, methods used to track returns on investments for major AISs, and MAISRC compliance with laws and regulations.

Adequacy of Management Controls. We identified material management control weaknesses in that the MAISRC did not consistently validate major AIS costs and benefits; establish procedures for the operational testing and evaluation of major AISs developed in increments; or determine oversight responsibilities for command and control, communications, and intelligence major AISs. See the finding for details. Recommendations 4., 5., and 8., if implemented, will correct those weaknesses. Potential monetary benefits associated with validating costs and benefits can be determined once validations are performed. See Appendix E for all benefits associated with the audit. A copy of the report will be provided to the senior official responsible for management controls within the Office of the Secretary of Defense.

Adequacy of the MAISRC Self-Evaluation of Applicable Management Controls. Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) officials did not identify the MAISRC as an assessable unit. Those officials did not identify the MAISRC as an assessable unit because they viewed the MAISRC process as a management control and believed that there was no requirement to designate portions of the management control structure as assessable units. We agree that the MAISRC process constitutes a management control, but that is all the more reason why it should be considered an assessable unit and periodically evaluated by management.

Prior Audits and Other Reviews

Since January 1990, the General Accounting Office; the Inspector General, DoD; and the Military Department audit organizations have issued 186 reports concerning management of AISs. Appendix D lists 44 of those reports that discuss the development and acquisition of AISs subject to MAISRC oversight. Summarized below are reports issued by the Office of the Secretary of Defense Process Action Team for Acquisition Reform and by the Subcommittee on Oversight of Government Management, Senate Committee on Governmental Affairs. Both of those reports discuss the need for more effective oversight of major AISs. Also summarized below is a General Accounting Office report that specifically discusses DoD oversight of major AISs.

"Reengineering the Acquisition Oversight and Review Process," December 9, 1994, Office of the Secretary of Defense Process Action Team for Acquisition Reform. The report concludes that DoD needs to reengineer its acquisition oversight and review process to make it more effective and efficient. The report focuses on improving the oversight and review of weapon system acquisitions and recommends that the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) adapt the report's recommendations, as appropriate, to the MAISRC review and oversight process. We reached a similar conclusion, as discussed in Part II of this report, in that the amount of documentation required for milestone reviews was unnecessarily burdensome. As a result of the report, the Under Secretary of Defense (Acquisition and Technology) determined that the AIS acquisition process should be integrated with the weapon system acquisition process to the maximum practicable extent. A separate report on a plan to accomplish that integration is to be provided to the Under Secretary and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) by July 1995.

"Computer Chaos: Billions Wasted Buying Federal Computer Systems," October 12, 1994, Subcommittee on Oversight of Government Management, Senate Committee on Governmental Affairs. The report identifies Federal agency weaknesses in procuring computer systems. The report recommendations focus on changing the process for buying major AISs and emphasize the need for earlier and more effective oversight of those AISs. Although the recommendations were not specifically directed to DoD, the Secretary of Defense was requested to comment by December 17, 1994. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) concurred with all but one recommendation. The Assistant Secretary requested reconsideration of the recommendation to reevaluate and halt existing procurements until the acquisition process is improved.

"Automated Information Systems, Defense's Oversight Process Should Be Improved," April 1990, General Accounting Office Report No. IMTEC-90-36 (Office of the Secretary of Defense Case No. 8328). The report concludes that the Office of the Secretary of Defense had not been effective in getting DoD Components to develop AISs in compliance with life-cycle management requirements. The report states that the MAISRC was not aggressive enough in terminating or redirecting major AIS development efforts when the DoD Components did not comply with life-cycle management policies. The report recommends that the Secretary of Defense direct that, when MAISRC review results warrant, the MAISRC deny milestone approval, prohibit further development, and ensure MAISRC decisions are reflected in program budgets. The report also recommends that the Secretary of Defense direct the MAISRC to periodically assess the adequacy of the Components' oversight processes and to recommend corrective actions, as appropriate. DoD agreed with the findings in principle, but provided no specific actions to implement the recommendations.

Part II - Finding and Recommendations

Oversight Process for Major Automated Information Systems

Although DoD has changed its approach in acquiring and developing AISs, the MAISRC oversight process has not been restructured to effectively incorporate new AIS acquisition and development methods and to consider the related Corporate Information Management Initiative. The MAISRC:

- o has not developed procedures to review major automated information systems as part of functional process improvements and efforts to standardize automated information systems,

- o has not adequately monitored and validated major AIS costs and benefits,

- o has not developed guidance and procedures for the review of major AISs that are incrementally developed, and

- o has not clearly defined key information or the minimal documentation required for MAISRC reviews.

Additionally, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) has not clearly established oversight responsibility for major AISs for command and control, communications, and intelligence. Improvements in the MAISRC process will provide better assurance that the expenditure of about \$3 billion for major AISs during FYs 1995 and 1996 will be in support of DoD information management goals and achieve the inherent economies and efficiencies of those goals.

Major AIS Reviews

Development Guidance and Requirements. Historically, DoD has experienced cost, schedule, and performance difficulties in the acquisition and development of AISs. To help eliminate those difficulties, DoD instituted a structured life-cycle management approach that requires formal MAISRC milestone reviews for each life-cycle phase of a major AIS. DoD Directive 8120.1, "Life-Cycle Management (LCM) of Automated Information Systems (AISs)," January 14, 1993, requires that AISs be developed in the most cost-effective manner and that expenditures be controlled "to ensure that derived benefits satisfy mission needs" DoD Instruction 8120.2, "Automated Information System (AIS) Life-Cycle Management (LCM) Process, Review, and Milestone Approval Procedures," January 14, 1993, designates the responsibilities of the MAISRC and establishes policy for the review and milestone approval of AISs. DoD Manual 7920.2-M, "Automated Information System Life Cycle Management Manual," March 1990, provides life-cycle

Oversight Process for Major Automated Information Systems

management review procedures and documentation guidelines. However, those regulations need to be revised to ensure the MAISRC process incorporates the goals of the Corporate Information Management Initiative.

MAISRC Oversight Reviews. Once a major AIS has been identified for MAISRC oversight, the MAISRC monitors the status of the AIS programs and provides direction to the AIS program manager through each life-cycle phase. In accordance with provisions of DoD Instruction 8120.2, the MAISRC delegated 15 of the 53 major AISs listed in Appendix C to DoD Components for oversight. Our audit focused on the MAISRC oversight process, not the oversight processes used by the Component councils. The day-to-day activities in the MAISRC process are performed by the MAISRC staff. The MAISRC staff consists of the action officers within the offices of the MAISRC members. Appendix B provides more details on the MAISRC process, members, and staff.

Types of Major AIS Reviews. To fulfill its oversight responsibilities, the MAISRC performs two types of life-cycle management reviews, a milestone review and an in-process review. A milestone and an in-process review are formal life-cycle management reviews as prescribed by DoD Instruction 8120.2. Those reviews are also performed by the Component review councils. A MAISRC milestone or an in-process review begins with a "paper" review by the MAISRC staff. If the MAISRC staff identifies no unresolved problems, then the results of the review are presented to the MAISRC members in a draft System Decision Memorandum. The MAISRC members review the "paper" review results and do not perform any additional review. Each type of review may result in life-cycle management decisions and direction to the program manager as approved by the Milestone Decision Authority. Table 1 shows the number of each type of review performed by the MAISRC and the DoD Component councils since January 1993. Of the 19 reviews performed by the MAISRC since January 1993, 5 were paper reviews.

Table 1. Completed Reviews Since January 1993

<u>Organization</u>	<u>Milestone</u>	<u>In-Process</u>	<u>Total</u>
MAISRC	6	13	19
Component council	<u>4</u>	<u>4</u>	<u>8</u>
Total	10	17	27

Comparison of Milestone and In-Process Reviews. The basic differences between an in-process review and a milestone review are timing and purpose of the review and documentation requirements. A milestone review occurs when a decision is needed on whether the major AIS continues to the next milestone or life-cycle management phase. Whereas an in-process review may occur at any time within the life-cycle of the AIS. The in-process review determines the program's status, progress since the last review, program risk and risk-reduction measures, and potential problems that require oversight guidance. The documentation requirements for the milestone review are specified in DoD Manual 7920.2-M. The documentation requirements for an

in-process review are based on the specific purpose of the review. For example, operational testing may be the focus of an in-process review, and an updated test and evaluation master plan may be the only documentation needed.

Supporting Functional Process Improvement Efforts

The MAISRC oversight process does not effectively support ongoing DoD efforts to achieve economies through functional process improvements and associated migratory AISs.* To meet statutory and regulatory requirements, MAISRC reviews focus on compliance with AIS acquisition, development, and approval processes. The current MAISRC review process of reviewing individual major AISs one system at a time is representative of DoD's former approach to AIS acquisition and development and is contrary to current DoD information management initiatives. The individual system review process limits the MAISRC staff's awareness of the status and implementation of functional process improvements and migratory AISs, thereby affecting the overall value and effectiveness of MAISRC reviews.

Increasing MAISRC Awareness of Functional Improvements. Because the MAISRC reviews major AISs one system at a time, the MAISRC staff is not well informed of other complementary systems and efforts that improve functional processes. If the MAISRC staff was more involved in efforts related to the improvement of functional systems and other aspects of the Corporate Information Management Initiative, the staff would be able to perform a more encompassing review. That involvement would help provide the staff answers to crucial AIS review questions, such as the following.

- o Is the AIS being developed to implement an improved functional process?
- o If the AIS program is not a migration system within its functional area, will it serve a duplicative purpose? If the AIS is a migration system, how and when will the legacy systems be terminated?
- o Are the hardware and software based on an approved architecture, and do they incorporate appropriate standards and use appropriate development methodologies and concepts?

*An existing or planned and approved AIS that has been designated to support a functional process on a DoD-wide basis.

- o Does the program adequately consider using the evolving information infrastructure for related communications and computer-processing requirements?

- o Has the program used the standardized data definitions developed for DoD-wide use?

Involvement in ongoing DoD Corporate Information Management Initiative efforts would enable the MAISRC staff to perform, from a DoD perspective, a more effective AIS review, and from the standpoint of the responsible Principal Staff Assistant, a more valuable review.

Concurrent Involvement with Migratory AISs. DoD Principal Staff Assistants are identifying migratory AISs to achieve economies and efficiencies in their respective functions. About 165 migratory AISs have been identified for 9 functional areas. Those AISs include 15 systems subject to MAISRC review. The critical factors of costs and benefits and the successful deployment of efficient and effective systems are of interest to both the Principal Staff Assistants and the MAISRC. However, the MAISRC review process is not an integrated part of the ongoing identification and development of AISs that will be used on a DoD-wide basis. By being actively involved in the identification and development of migratory AISs, the MAISRC could provide an independent assessment of critical factors needed to verify that the development of specific major AISs will achieve desired economies and efficiencies.

AIS Costs and Benefits

The MAISRC did not adequately monitor or evaluate AIS costs and benefits. As of January 1994, 52 AISs were subject to MAISRC oversight. However, returns on investment (derived from costs and benefits) were not routinely tracked by the MAISRC. The return on investment was available for only 1 of those 52 AISs. The MAISRC staff informed us that, as of December 1994, return on investment analyses are required in the quarterly reports from the program managers of major AISs. Also, AIS costs and benefits were not routinely evaluated or validated during formal MAISRC reviews.

Validating AIS Costs and Benefits. The Director, Program Analysis and Evaluation, did not validate costs and benefits for 12 of the 19 major AISs reviewed by the MAISRC during 1993 and 1994. DoD Directive 8120.1 requires that costs and benefits be validated during the MAISRC process. Costs and benefit validations were usually performed during milestone reviews, but were not usually performed during in-process reviews. Because in-process reviews have no standard requirements, AIS program costs and benefits may not be a focus, and the Director, Program Analysis and Evaluation, may not be materially involved during the in-process review. Table 2 summarizes the AIS cost validation efforts during formal MAISRC reviews held in 1993 and 1994.

Oversight Process for Major Automated Information Systems

Table 2. Summary of Major AIS Cost Validations by Director, Program Analysis and Evaluation

<u>Review Type</u>	<u>Incomplete Cost Data</u>	<u>No Cost Data</u>	<u>No Material Involvement</u>	<u>Costs Validated</u>	<u>Totals</u>
Milestone	1	1*	0	4	6
In Process	<u>5</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>13</u>
Total	6	3	3	7	19

* Cost data not required at Milestone 0

Reasons for Cost-Benefits Analysis. The analysis and validation of major AIS costs and benefits is critical in evaluating AIS program management and in determining the program's cost-effectiveness. The purpose of a cost-benefits analysis is to explore and quantify the relative cost advantages of concept and design options. A fundamental AIS principle is that, in addition to being affordable, the most advantageous AIS alternative available to the Government should satisfy all critical mission requirements at the lowest life-cycle cost. The Director, Program Analysis and Evaluation, uses the "AIS Benefit/Cost Excel 4.0a Model," June 1994, in validating costs and benefits. The "Program Analysis and Evaluation/Planning and Analytic Support User Manual" for that model states that "From a purely economic perspective, AIS acquisition programs should support at least a 10 percent return on investment"

Congressional Concerns on AIS Investments. Members of Congress are concerned about DoD's return on investment for information systems. In its June 4, 1993, letter to the Comptroller General, the Subcommittee on Readiness, House Committee on Armed Services (now the Subcommittee on Readiness, House Committee on National Security) stated that over time, projected benefits were decreasing for DoD planned investments, totaling about \$80 billion, in information systems and resources. The letter states "We fear there is no end-game and that scarce DoD resources will be spent with no immediate and little long-term gain." Consistent validation of costs and benefits would strengthen the effectiveness of the MAISRC process and would help assure members of Congress that DoD is concerned about the cost-effectiveness of its information systems and management practices.

Oversight of AISs Developed in Increments

In an effort to reduce the time typically needed to acquire and develop a major AIS, DoD has begun to develop migratory systems in a "buildings blocks" approach. Instead of developing the entire system at one time, the system is developed in increments, or blocks, of capability. That approach should get automated capability into the hands of the users more quickly. However, the

building blocks approach raises new problems for AIS program management and oversight, especially when requirements for each increment are not initially well defined.

Milestone Approval Process. Incremental development will be difficult to oversee using the traditional milestone approval process. Because existing AIS life-cycle management policy for MAISRC systems does not provide for consistent procedures to review systems developed incrementally, oversight officials are evaluating a "moving target" and will find traditional cost, schedule, and performance standards difficult to apply. DoD life-cycle management policies need to be revised to provide procedures for the MAISRC to effectively oversee the management of incrementally developed AISs.

Operational Testing for and Validating Costs of Incremental AISs. Existing acquisition and life-cycle management requirements and procedures are not easily applied to AISs developed in increments, especially those concerning operational testing and cost validation. Operational test and evaluation, required by AIS acquisition policy, verifies that an AIS performs as intended and is ready to be deployed. The Director, Operational Test and Evaluation, is a member of the MAISRC. Operational testing procedures, premised on assessing completed weapon systems developed by major acquisition programs, are lengthy and costly when performed several times during the development of an incremental AIS. Additionally, the question of what constitutes appropriate operational test and evaluation for migration AISs which involve the incremental integration of multiple AISs, at varied life-cycle phases, is a challenging issue for the MAISRC.

DoD Instruction 8120.2 requires that the validation of costs and benefits for major AISs be performed at AIS life-cycle milestones. The MAISRC has not resolved the issue of how to apply milestone review requirements to the review of AISs developed in increments; therefore the MAISRC is not validating costs and benefits for each increment of a major AIS. For effective MAISRC oversight of AISs developed in increments, DoD regulations should specify the life-cycle management requirements for operational testing and evaluation and the criteria for validating costs and benefits of those incremental systems.

Documentation for MAISRC Reviews

Documentation Requirements. DoD guidance does not define minimum documentation requirements for in-process reviews. The DoD Manual 7920.2-M specifies the documentation needed for milestone reviews, and DoD Instruction 8120.2 only describes the nature of the documentation for in-process reviews. The program manager must satisfactorily complete needed documentation before each milestone review. The documentation supports the program, functional, and technical concepts that are determined from the planning and analysis tasks completed by the program managers.

Documentation Effects on Reviews. The MAISRC staff considers the documentation supporting a milestone review a significant burden to review, and program managers consider the documentation a significant burden to prepare. Difficulties in preparing documentation for milestone reviews are compounded by Component review councils' requests for more information. Consequently, we believe the MAISRC has performed more frequent in-process reviews to obtain critical information on the progress of major AISs and fewer milestone reviews. Of the 27 reviews performed since January 1993, 17 (63 percent) were in-process reviews (see Appendix B).

Key Management Information Needs. The MAISRC has not established the key management information requirements for MAISRC oversight reviews. Key management information, such as validated costs and benefits, was not consistently provided for each review performed since January 1993, (see Table 2). To alleviate the burden of preparing documentation, key information requirements should be designated for milestone and in-process reviews.

Oversight of Command and Control, Communications, and Intelligence Systems

DoD guidance does not explicitly delineate responsibility for oversight of command and control, communications, and intelligence AISs. The Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) has estimated that thousands of command and control, communications, and intelligence AISs exist. The investment and annual costs of those AISs are generally thought to be substantial, but costs are not well defined because they are not separately accounted for in the budgeting and appropriations process. Accordingly, command and control, communications, and intelligence AISs do not receive the same type of oversight given to "business or administrative" AISs, for which detailed budgetary information is required in DoD's annual budget submission to Congress.

DoD Guidance Related to Command and Control, Communications, and Intelligence Systems. Though not required by law, DoD has traditionally separated the application of DoD guidance for the oversight of AISs, depending on the purpose for each system. AISs deemed to be critical to the mission performance of weapon systems have been acquired and managed in accordance with requirements primarily in DoD Directive 5000.1, "Defense Acquisition," February 23, 1991, and DoD Instruction 5000.2, "Defense Acquisition Management Policy and Procedures," February 26, 1993. Those mission-critical systems that meet specific monetary thresholds are subject to oversight by the Defense Acquisition Board, not the MAISRC. The scope of DoD Directive 8000.1, "Defense Information Management (IM) Program," October 27, 1992, specifically includes "information management resources and services used for . . . command, control, communications, and intelligence unless specifically exempted by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)." We identified no command and

control, communications, and intelligence AISs that had been exempted by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence).

Section D ("Computer Resources"), part 6, of DoD Instruction 5000.2 provides procedures that apply to "computer resources, hardware and software that are physically part of, dedicated to, or essential in real time to the mission performance of weapon systems." However, the Instruction does not specify what is "essential in real time to the mission performance of weapon systems." Accordingly, program management decisions to apply DoD Instruction 5000.2 for command and control, communications, and intelligence AISs are, in our opinion, highly subjective.

Defense Acquisition Board Oversight Versus MAISRC Oversight. The monetary thresholds for determining oversight by the MAISRC or the Defense Acquisition Board differ significantly. The threshold for a major AIS subject to MAISRC oversight is \$300 million in life-cycle costs, which includes costs of all types, regardless of how they are funded. On the other hand, the primary Defense Acquisition Board threshold is \$1.8 billion in procurement funding. Defense Acquisition Board thresholds do not include operation and maintenance funding, which comprises a large part of life-cycle costs.

We concluded that guidance in DoD Directive 8000.1 is applicable to most command and control, communications, and intelligence major AISs. Because of the difference in qualifying thresholds, program managers have generally applied guidance in DoD Instruction 5000.2 to command and control, communications, and intelligence systems, thereby avoiding the MAISRC's lower oversight thresholds. However, the MAISRC has reviewed eight command and control systems. We believe that other command and control, communications, and intelligence AISs meet the thresholds for and should be provided oversight by the MAISRC.

Ongoing Efforts to Improve the MAISRC Process

The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) has initiated efforts to examine and improve the structure and operations of his office and that of the MAISRC. Personnel from the Office of the Assistant Secretary took part in the Secretary of Defense Process Action Team for Acquisition Reform. The process action team's conclusions and recommendations are summarized under Prior Audits and Other Reviews in Part I of this report. The Assistant Secretary also authorized two functional process improvement studies. One study directly focuses on the MAISRC process, and the other considers MAISRC as one of the functions of the Office of the Assistant Secretary. The thrust and status of those functional process improvement studies are described below.

MAISRC Functional Process Improvement Study. The objective of the MAISRC Functional Process Improvement study is to improve the MAISRC

process and data and streamline oversight of the life-cycle management process for the development and operation of major AISs under MAISRC oversight. In November 1994, an interim report was issued, presenting a model of the current MAISRC process as viewed by the MAISRC staff. In March 1995, the study team issued a report which modeled the MAISRC process as viewed by major AIS program managers. The study team will meld the two perspectives into an overall model of the MAISRC process and will identify the changes needed for an improved MAISRC process. Expected study outcomes include changes to DoD Directive 8120.1 and DoD Instruction 8120.2 and revision of DoD Manual 7920.2-M, which is planned to be reissued as DoD Manual 8120.2-M, "Automated Information Systems, Life-Cycle Management Manual."

Enterprise Analysis for the Assistant Secretary. The Enterprise Analysis for the Assistant Secretary study is designed to improve the effectiveness and efficiency of the mission performance of the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). A draft report issued September 23, 1994, includes recommendations designed to improve the Office of the Assistant Secretary's structure, process, and environment. The Assistant Secretary's staff is evaluating the recommendations. Implementation of the recommendations will be the decision of the Assistant Secretary. No recommendations specifically apply to the MAISRC process.

Summary

Improvements to the MAISRC process will better support the goals of the DoD Corporate Information Management Initiative. Also, improvements in the process will provide an independent assessment of critical factors needed to verify that major AISs under development will achieve the desired economies and efficiencies.

Recommendations, Management Comments, and Audit Response

Revised and Renumbered Recommendations. Because procedures involving the MAISRC staff in Corporate Information Management Initiative efforts do not need to be specified in DoD AIS life-cycle management directives and guidance, we renumbered draft Recommendation 1. as Recommendation 3. As a result of management comments, we revised draft Recommendations 4. and 5. (renumbered as Recommendation 6.) to clarify our intent. Also, we renumbered draft Recommendations 2. and 3. to 1. and 2., respectively, and to better respond to management comments, we renumbered draft Recommendations 5. and 6. to 6. and 5., respectively.

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

1. Specify procedures that will involve the Major Automated Information Systems Review Council staff in the ongoing efforts of the DoD Corporate Information Management Initiative.
2. Specify procedures for the Major Automated Information System Review Council staff to perform assessments of, and concurrent with, the identification and development of each migratory major automated information system that will be used on a DoD-wide basis.

Management Comments. The Deputy Assistant Secretary (Acquisition), responding for the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), nonconcurred with both recommendations. In response to Recommendation 1., the Deputy Assistant Secretary indicated that the MAISRC staff already is involved with the DoD Corporate Information Management Initiative in that the staff reviews any major automated information system that is evolving in response to the Corporate Information Management Initiative. Regarding Recommendation 2., the function of the MAISRC is oversight, and any MAISRC involvement would be inappropriate during the identification of candidates for and selection of migratory AISs. The designation of migratory AISs is a responsibility of the Principal Staff Assistants, with evaluation criteria provided by the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) and migration assessment support provided by the Defense Information Systems Agency. The staff of the Assistant Secretary also reviews and approves each proposed migratory system. About half of the major AISs overseen by the MAISRC are migratory systems.

Audit Response. We do not consider the Deputy Assistant Secretary's comments responsive. The MAISRC oversight function can best be performed by a staff with a broad understanding and awareness of DoD information management initiatives, including the related migration activities within DoD's functional areas. Although statutory compliance must remain a concern of the MAISRC, the MAISRC's review approach and focus must change to effectively correspond to the DoD "corporate" perspective. Active involvement in Corporate Information Management Initiative efforts would help provide the MAISRC staff the overall knowledge and insight needed to review AISs from that corporate perspective. The adoption of the Integrated Product Team approach for the oversight of weapon system acquisition, which is a key element of ongoing DoD acquisition reform, may well serve as a useful model for the AIS area.

Active participation by the MAISRC staff in Corporate Information Management Initiative efforts, including the identification and selection of migratory AISs, would not in any way compromise the independence required for the MAISRC review function. The knowledge gained from active involvement in Corporate Information Management Initiative efforts would provide a clearer "big picture" of DoD information management and enable more thorough and encompassing MAISRC reviews. Concurrent migration

system involvement would provide the opportunity for the MAISRC staff, Principal Staff Assistants, and major AIS program managers to become better aware of each other's views and perspectives and to discuss related issues before those issues become problems. Collaborative efforts should result in major AISs that provide effective support and achieve the economies and efficiencies sought. We ask that management provide additional comments on the recommendations.

3. Revise DoD Directive 8120.1, "Life-Cycle Management of Automated Information Systems," January 14, 1993; DoD Instruction 8120.2, "Automated Information System Life-Cycle Management Process, Review, and Milestone Approval Procedures," January 14, 1993; and DoD Manual 7920.2-M, "Automated Information Systems, Life-Cycle Management Manual," March 1990, to reflect the provisions in Recommendations 4. through 8.

Management Comments. As described under the following recommendations, the Deputy Assistant Secretary generally concurred and stated that revisions to DoD Manual 7920.2-M will resolve most of the issues. He also indicated that, as a result of ongoing process improvement initiatives, DoD Directive 8120.1 and DoD Instruction 8120.2 would also be revised to achieve other recommended actions.

Audit Response. The Deputy Assistant Secretary's comments as applicable to Recommendations 5. and 7. are responsive. We request that the Assistant Secretary provide additional comments on Recommendations 4., 6., and 8. as discussed below.

4. Designate the Director, Program Analysis and Evaluation, to validate the costs and benefits of a major automated information system at established points throughout its development.

Management Comments. The Deputy Assistant Secretary concurred, stating that DoD Directive 8120.1 and DoD Instruction 8120.2 presently task the Director, Program Analysis and Evaluation, to review and validate the costs and benefits of a major AIS throughout its life cycle. Also, clarifying guidance will be issued by the Office of the Director, Program Analysis and Evaluation, and in DoD Manual 8120.2-M.

Audit Response. The Deputy Assistant Secretary's comments are partially responsive. The intent of our recommendation is much broader than the Deputy Assistant Secretary's interpretation. We agree that the Director, Program Analysis and Evaluation, is responsible for the review and validation of the cost and benefits of major AIS programs at appropriate life-cycle management reviews; however, we believe that costs and benefits are not adequately validated. In-process reviews have become the predominant type of MAISRC review. However, as detailed in Table 2 (page 12), the Director, Program Analysis and Evaluation, did not validate the costs and benefits for 10 of the 13 in-process reviews performed by the MAISRC during 1993 and 1994. Cost and benefit validations are required for most milestone reviews, but in-process review requirements are not uniform and the Director, Program Analysis and

Evaluation, may have no in-process review validation responsibilities. We believe that periodic cost and benefit validations, scheduled by the MAISRC without regard to type of oversight review, would help ensure positive returns on investments and would illustrate the DoD resolve to spend its limited resources wisely. We request that management provide additional comments on the recommendation.

5. Specify life-cycle management requirements for validating costs and benefits and for performing operational tests and evaluations of major automated information systems developed in increments. Determine the life-cycle management requirements in coordination with the Director, Program Analysis and Evaluation, and the Director, Operational Test and Evaluation.

Management Comments. The Deputy Assistant Secretary concurred. In response to validating costs and benefits of AISs developed in increments, the Deputy Assistant Secretary stated that DoD Instruction 8120.2 provides for combined or repeated milestone decision points for the oversight of incremental AIS programs. He recognized that the costs and benefits of incremental programs are difficult to estimate because different increments are at various stages of definition, development, and deployment. Costs and benefits are usually more accurate and verifiable for increments that are closest to deployment. The hardware and system configuration investment required for early increments may distort a program's return on investment during its initial stages. The Director, Program Analysis and Evaluation, had considered those factors in developing draft AIS Economic Analysis procedures for inclusion in DoD Manual 8120.2-M, which will be issued in September 1995. The Director, Program Analysis and Evaluation, also plans to issue a revised "DoD Automated Information Systems (AIS) Economic Analysis (EA) Guide" in October 1995.

In response to operational tests and evaluations of major AISs developed in increments, the Director, Operational Test and Evaluation, presently oversees test and evaluation planning and execution of major AISs, including those developed in increments. The Deputy Assistant Secretary stated that the report incorrectly states that operational testing is not performed on AISs developed in increments. Specific procedures for performing operational testing of incremental AIS programs are being developed and will be included in the pending DoD Manual 8120.2.

Audit Response. The Deputy Assistant Secretary's comments meet the intent of the recommendation, and no further response is required. Regarding the operational testing of AISs developed in increments, we agree that the draft report discussion could be misleading, and we revised that discussion to clarify our intent.

6. Establish procedures and criteria to oversee the cost, schedule, and performance of incrementally developed major automated information systems for which firm requirements are not initially defined.

Management Comments. The Deputy Assistant Secretary concurred that life-cycle management directives should include procedures and criteria for overseeing incrementally developed AISs. The AIS program managers are required to define and obtain MAISRC approval of a tailored strategy for program management. The Deputy Assistant Secretary stated that he would consider clarifying procedures for the oversight of incrementally developed AISs during the revision of DoD Directive 8120.1 and DoD Instruction 8120.2. Those revisions are scheduled to begin in July 1995.

Audit Response. The Deputy Assistant Secretary's comments are not responsive. We agree that the present life-cycle guidance provides for tailored strategies, but that is not the focus of our recommendation. Our intent is to focus on the oversight of the execution of those tailored strategies, especially the strategies involving incremental development of AISs for which functional and technical requirements are not initially well defined. Methods and mechanisms exist to help monitor and track the cost, schedule, and performance of an AIS development. However, most of those methods and mechanisms are premised on well-defined requirements. The performance of a traditional cost-benefit analysis, for example, may provide little assistance to the oversight and control of the cost of a system being developed to meet evolving requirements. Accordingly, we believe that procedures and criteria need to be established to effectively oversee the incremental development of major AISs. We revised the recommendation to clarify our intent, and we request additional comments on the revised recommendation.

7. Designate key program management information, such as validated cost-benefits analyses and operational test plans, for milestone and in-process reviews performed by the Major Automated Information Systems Review Council.

Management Comments. The Deputy Assistant Secretary concurred, stating that improved guidelines for AIS life-cycle management review documentation will be provided in DoD Manual 8120.2-M, "Automated Information System Life Cycle Management Manual," which is scheduled to be issued by October 1995.

8. Clarify the oversight responsibilities of the Major Automated Information Systems Review Council for command and control, communications, and intelligence major automated information systems that have not been exempted from DoD Directive 8000.1, "Defense Information Management Program," October 27, 1992.

Management Comments. The Deputy Assistant Secretary concurred, stating that revisions of DoD Directive 8120.1 and DoD Instruction 8120.2, scheduled to begin in July 1995, will further clarify that major AISs used for command and control are subject to MAISRC oversight.

Audit Response. Although the Deputy Assistant Secretary concurred, the comments are limited to command and control major AISs. Because the

recommendation also includes communications and intelligence major AISs, we ask that management provide additional comments, explaining the planned actions to clarify oversight responsibilities for those major AISs.

Management Comments Required

Responses to the final report are required for the items indicated with an "X" in the table below.

Table 3. Response Requirement for Each Recommendation

<u>Recommendation Number</u>	<u>Response Should Cover</u>		
	<u>Reconsider Position</u>	<u>Proposed Action</u>	<u>Completion Date</u>
1.	X	X	X
2.	X	X	X
3.	X	X	X
4.	N/A	X	X
6.	N/A	X	X
8.	N/A	X*	X

*Indicate position on clarifying oversight responsibilities for communications and intelligence major AISs.

Part III - Additional Information

Appendix A. Major AIS Criteria and Life-Cycle Management Milestone Reviews

Major Automated Information Systems Criteria. Using FY 1990 constant dollars, a major automated information system:

- o has anticipated program costs of more than \$100 million, or
 - o has estimated program costs of more than \$25 million in a single year,
- or
- o has estimated life-cycle costs of more than \$300 million, or
 - o has been so designated by the milestone decision authority.

Life-Cycle Management Milestone Reviews. DoD Directive 8120.1 establishes life-cycle management requirements for automated information systems (AISs). Milestone reviews are held between life-cycle management phases to evaluate AIS program performance during the preceding phase, assess plans for the rest of the program, and establish exit criteria* for the next phase. The MAISRC milestone reviews and their basic purposes follow.

- o Milestone 0. Verifies the mission need statement and authorizes the concept exploration and definition phase.
- o Milestone I. Selects the best program concept alternative and authorizes the validation phase.
- o Milestone II. Determines whether the validated system will meet mission needs and authorizes the development phase.
- o Milestone III. Determines whether the developed system is ready for deployment and, if so, authorizes production and deployment.
- o Milestone IV. Evaluates effectiveness of operational support of the AIS and decides whether to continue, modernize, or terminate the system.

*Specific program criteria that must be accomplished before proceeding to the next milestone phase.

Appendix B. MAISRC Members, Staff, and Oversight Process

MAISRC Members. The Major Automated Information Systems Review Council (MAISRC) is composed of the MAISRC Chair, the MAISRC members, the MAISRC Executive Secretary, and the MAISRC staff. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) is the chairperson and life-cycle management milestone decision authority. Other MAISRC members are the:

- o Secretary of Defense Principal Staff Assistants, including those who provide management responsibility for the functional areas supported by the AISs subject to review;
 - o Under Secretary of Defense (Comptroller);
 - o Director, Program Analysis and Evaluation, Office of the Under Secretary of Defense (Comptroller);
 - o Assistant Secretary of Defense (Reserve Affairs), when appropriate;
 - o Director, Acquisition Policy and Program Integration, Office of the Under Secretary of Defense for Acquisition and Technology;
 - o Director, Test and Evaluation, Office of the Under Secretary of Defense for Acquisition and Technology;
 - o Director, Operational Test and Evaluation;
 - o Chairman, Joint Chiefs of Staff, representative(s);
 - o Senior Acquisition Authority for the AIS program subject to review;
- and
- o other members selected at the discretion of the milestone decision authority.

The MAISRC Staff. The MAISRC staff is comprised of action officers within the offices of the MAISRC members. For example, in meeting his responsibility for the oversight of major AISs, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) relies on action officers in the Office of the Deputy Assistant Secretary of Defense (Acquisition) for day-to-day support. Other MAISRC staff work in the offices of the Director, Program Analysis and Evaluation; the Director, Operational Test and Evaluation; and the Principal Staff Assistant for the functional area supported by the AIS subject to review. MAISRC staff in the Office of the Deputy Assistant Secretary of Defense (Acquisition) normally coordinate the oversight activities of other staff working in the offices of the other MAISRC members. For example, information related to AIS costs and benefits is

Appendix B. MAISRC Members, Staff, and Oversight Process

obtained from the AIS program manager and provided to the MAISRC staff in the Office of the Director, Program Analysis and Evaluation, for review and, if appropriate, validation. The MAISRC staff performs most of the "leg work" involved in the MAISRC oversight process.

The MAISRC Oversight Process. The MAISRC oversight process begins with identification of a major AIS. The Principal Staff Assistant for the functional area supported by the AIS usually identifies an AIS for MAISRC oversight; however, the MAISRC may become aware of a major AIS through other means, such as through information technology budget reviews.

Major AIS program managers submit quarterly status reports to the MAISRC. The MAISRC staff uses the quarterly reports to monitor the status of the AIS programs and to identify potential issues.

Either the major AIS program manager or the MAISRC may initiate a MAISRC review. The MAISRC staff reviews documentation submitted by the major AIS program managers, identifies program deficiencies, issues, or concerns, and tries to resolve problems with the AIS program manager. The MAISRC staff prepares a synopsis of the AIS program's history, status, and unresolved issues and other information pertinent to the major AIS being reviewed. The synopsis is provided to appropriate MAISRC members before the MAISRC formally convenes.

The results of the MAISRC review are documented in a System Decision Memorandum (the Memorandum). The Memorandum reflects the milestone approval, if granted, and any specific requirements or direction given to the major AIS program manager and specifies the exit criteria that must be accomplished in the next life-cycle phase.

Appendix C. Major Automated Information Systems

(Subject to MAISRC Review as of August 1994)

<u>Name of System</u>	<u>Estimated Life-Cycle Costs¹ (000)</u>	<u>FY 1994 Program Costs¹ (000)</u>	<u>FY 1995 Program Costs¹ (000)</u>	<u>LCM Review Type/Date²</u>
Army				
Army Food Management Information System ³	\$ 1,976,000	\$ 11,326	\$ 6,635	Milestone III September 1990
Army World Wide Military Command and Control System Information System ⁵	1,660,700 ⁴	24,141	26,709	In-Process February 1993
Department of the Army Movement Management System Redesign	166, 000 ⁴	10,275	7,416	Milestones II/III May 1994 ⁴
Installation Support Module ^{3, 6}	374,400	21,998	11,106	Milestones II/III July 1993
Joint Computer Aided Acquisition and Logistics	1,138,700 ⁴	43,017 ⁴	-- ⁷	In-Process March 1994
Personnel Electronic Records Management System ³	421,700	17,598	10,001	Milestones II/III July 1993
Reserve Component System Automation	1,872,400	219,938	159,894	In-Process June 1994
Standard Army Maintenance System ³	358,700	12,292	8,368	None
Standard Army Retail Supply System ³	773,200	28,286	18,375	Milestone III March 1992
Standard Installation/Division Personnel System-III	427,700	24,779	21,717	Milestone II October 1991
Sustaining Base Information Services	1,800,000	60,960	102,397	Milestone I February 1992

See footnotes at end of the table.

Appendix C. Major Automated Information Systems

<u>Name of System</u>	<u>Estimated Life-Cycle Costs¹ (000)</u>	<u>FY 1994 Program Costs¹ (000)</u>	<u>FY 1995 Program Costs¹ (000)</u>	<u>LCM Review Type/Date²</u>
Theater Automated Medical Management Information System ³	358,000	5,271	5,671	Milestone III May 1990
Transportation Operation Personal Property Standard System ⁸	143,600 ⁴	20,312	16,300	In-Process (Paper) December 1994 ⁴
Unit Level Logistics System	701,800	18,752	6,293	In-Process August 1993
Total	\$12,172,900	\$ 518,945	\$ 400,882	
Navy				
Electronic Military Personnel Records Systems	200,000	4,161	43,029	None
Joint Engineering Data Management and Information Control System	561,100	9,712	11,511	Milestone III May 1991
Naval Aviation Logistics Command Management Information System ^{8, 9}	1,695,200	55,182	0	Milestone III (Paper) November 1994 ⁴
Navy Source Data System ³	2,295,400	23,467	25,674	Milestone III January 1986
Navy Tactical Command Support System	-- ⁷	0	156,158	None
Primary Oceanographic Prediction System ³	359,100	12,387	16,843	Milestones I/II November 1989
Shipboard Non-Tactical Automated Data Processing Program III ^{8, 9}	1,410,000	29,349	0	Milestone III (Paper) July 1994 ⁴
Stock Point Automated Data Processing Equipment Replacement/Data Processing Installation Consolidation ⁸	2,712,000	15,212	16,488	None
Total	\$ 9,232,800	\$ 149,470	\$ 269,703	

See footnotes at the end of the table.

Appendix C. Major Automated Information Systems

<u>Name of System</u>	<u>Estimated Life-Cycle Costs¹ (000)</u>	<u>FY 1994 Program Costs¹ (000)</u>	<u>FY 1995 Program Costs¹ (000)</u>	<u>LCM Review Type/Date²</u>
Air Force				
Air Force Command and Control System ⁸	360,000	18,941	6,385	Milestones II/III December 1988
Air Force Equipment Management System ³	134,900	8,815	5,817	In-Process November 1993
Air Mobility Command, Command and Control Information Processing System ³	523,300	31,953	24,598	In-Process June 1993
Base-Level Computer System	-- ⁷	20,876 ⁴	18,986 ⁴	None
Combat Ammunition System ³	450,600	17,884	10,197	In-Process July 1993
Core Automated Maintenance System/ Reliability Maintainability Information System ³	606,000	23,962	20,051	In-Process March 1994
Defense Civilian Personnel Data System	130,000 ⁴	9,029 ⁴	11,157 ⁴	In-Process (Ongoing as of January 1995) ⁴
Depot Maintenance Management Information System	575,100	2,264	2,168	Milestone III June 1994
Fuels Automated Management System ³	154,230	4,344	2,224	None
Global Transportation Network	476,100	17,160	28,621	In-Process April 1993
Integrated Data Strategy Project ⁸	-- ⁷	14,800	19,000	None
Integrated Maintenance Data System	-- ⁷	0	-- ⁷	None
Personnel Concept III ³	475,000	6,884	4,701	Milestone III May 1990
Requirements Data Bank ³	558,230	10,948	13,279	Milestone III July 1993

See footnotes at the end of the table.

Appendix C. Major Automated Information Systems

<u>Name of System</u>	<u>Estimated Life-Cycle Costs¹ (000)</u>	<u>FY 1994 Program Costs¹ (000)</u>	<u>FY 1995 Program Costs¹ (000)</u>	<u>LCM Review Type/Date²</u>
Air Force				
Strategic War Planning System/ TRIAD Computer System	683,260	69,115	61,464	In-Process January 1994
Total	\$ 5,126,720	\$ 256,975	\$ 228,648	
Office of the Secretary of Defense				
Composite Health Care System	2,131,200	179,554	193,830	Milestone III May 1992
Defense Medical Logistics Standard Support Program	176,400	13,789	18,804	Milestone 0 November 1993
High Performance Computing Modernization Plan	2,000,000 ⁴	146,100 ⁴	183,000 ⁴	Milestone I (Paper) December 1994 ⁴
Theater Medical Information System	--7	--7	--7	None
Total	\$ 4,307,600	\$ 339,443	\$ 395,634	
Defense Commissary Agency				
Defense Commissary Information System	386,300	2,802	11,523	Milestone I September 1993
Defense Commissary Point of Sale System	597,000	16,608	15,762	None
Total	\$ 983,300	\$ 19,410	\$ 27,285	
Defense Finance and Accounting Service				
Defense Joint Military Pay System	679,000	45,778	39,869	None
Total	\$ 679,000	\$ 45,778	\$ 39,869	

See footnotes at end of the table.

Appendix C. Major Automated Information Systems

<u>Name of System</u>	<u>Estimated Life-Cycle Costs¹ (000)</u>	<u>FY 1994 Program Costs¹ (000)</u>	<u>FY 1995 Program Costs¹ (000)</u>	<u>LCM Review Type/Date²</u>
Defense Information Systems Agency				
Defense Information System Network	140,500	30,419	27,449	Milestone 0 (Ongoing as of January 1995) ⁴
Defense Message System	266,500	7,711	34,288	In-Process December 1994 ⁴
Global Command and Control System	--7	--7	--7	In-Process June 1994
Total	\$ 407,000	\$ 38,130	\$ 61,737	
Defense Logistics Agency				
Automated Document Conversion System	--7	14,000 ⁴	30,000 ⁴	In-Process (Paper) March 1994 ⁴
Distribution Standard System	1,100,000	44,681	52,145	In-Process June 1994
Defense Automatic Addressing System Automated Data Processing Replacement and Modernization Program ³	185,000 ⁴	1,866 ⁴	2,800 ⁴	Milestone III October 1993
Integrated Contract Administration Support	--7	5,050	14,600	None
Total	\$ 1,285,000	\$ 65,597	\$ 99,545	

See footnotes at end of the table.

Appendix C. Major Automated Information Systems

<u>Name of System</u>	<u>Estimated Life-Cycle Costs¹ (000)</u>	<u>FY 1994 Program Costs¹ (000)</u>	<u>FY 1995 Program Costs¹ (000)</u>	<u>LCM Review Type/Date²</u>
Joint Logistics Systems Center				
Depot Maintenance Standard System	--7	--7	--7	In-Process March 1993
Materiel Management Standard System	--7	--7	--7	In-Process March 1993
Total	\$ 0	\$ 0	\$ 0	
Grand Total for the 53 systems	\$34,194,320¹⁰	\$1,433,748¹¹	\$1,523,303¹²	

¹Cost data obtained from Exhibit 43, FY 1996 DoD Budget Estimate, unless otherwise noted.

²Information obtained from August 1994 Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) memorandum designating major AISs subject to MAISRC and Component council reviews, unless otherwise noted.

³Major AIS oversight review delegated to the Component council.

⁴Information obtained from MAISRC action officers.

⁵To be merged into the Army Global Command and Control System.

⁶System to be combined with Sustaining Base Information System.

⁷Cost data not available.

⁸Not considered a major AIS. System will be deleted from the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) memorandum designating major AISs subject to MAISRC and Component council review.

⁹System to be combined with Navy Tactical Command Support System.

¹⁰Excludes costs for 10 major AISs because cost data were not available.

¹¹Excludes costs for four major AISs because cost data were not available.

¹²Excludes costs for six major AISs because cost data were not available.

Appendix D. Prior Audits of Major Automated Information Systems

<u>Government Organization</u>	<u>Report Number</u>	<u>Report Title</u>
GAO ¹	AIMD-94-61 (OSD Case No. 9672)	"Medical ADP [Automated Data Processing] Systems: Defense's Tools and Methodology for Managing CHCS [Composite Health Care System] Performance Need Strengthening," July 15, 1994
GAO	IMTEC-93-11 (OSD Case No. 9269)	"Composite Health Care System: Outpatient Capability is Nearly Ready for Worldwide Deployment," December 15, 1992
GAO	IMTEC-93-03 (OSD Case No. 9290)	"Air Force ADP: Lax Contract Oversight Led to Waste and Reduced Competition," November 19, 1992
GAO	IMTEC-92-69 (OSD Case No. 9167)	"ADP Procurement: Prompt Navy Action Can Reduce Risks to SNAP III [Shipboard Non-Tactical ADP Program III] Implementation," September 29, 1992
GAO	IMTEC-92-54 (OSD Case No. 9064)	"Medical ADP Systems: Composite Health Care System is Not Ready to be Deployed," May 20, 1992
GAO	IMTEC-92-25 (OSD Case No. 8838)	"Defense ADP: Lessons Learned From Development of Defense Distribution System," March 20, 1992
GAO	IMTEC-91-54 (OSD Case No. 8741)	"Defense ADP: A Coordinated Strategy is Needed to Implement the Computer-Aided Acquisition Logistics Support Initiatives," September 13, 1991
GAO	IMTEC-91-47 (OSD Case No. 8780)	"Medical ADP Systems: Changes In Composite Health Care System's Deployment Strategy are Unwise," September 30, 1991

¹General Accounting Office

Appendix D. Prior Audits of Major Automated Information Systems

<u>Government Organization</u>	<u>Report Number</u>	<u>Report Title</u>
GAO	IMTEC-90-66 (OSD Case No. 8489)	"Army Automation: Decisions Needed on SIDPERS III [Standard Installation/Division Personnel System-III] Before Further Development," September 5, 1990
GAO	IMTEC-90-46 (OSD Case No. 8397)	"Air Force ADP: Depot Maintenance System Development Risks Are High," May 25, 1990
GAO	IMTEC-90-42 (OSD Case No. 8277-A)	"Medical ADP Systems: Composite Healthcare System--Defense Faces a Difficult Task," March 15, 1990
GAO	IMTEC-90-36 (OSD Case No. 8328)	"Automated Information System: Defense's Oversight Process Should Be Improved," April 16, 1990
GAO	IMTEC-90-25 (OSD Case No. 8351)	"Computer Systems: Development of Navy's Source Data System Needs to be Reassessed," May 8, 1990
GAO	IMTEC-90-22 (OSD Case No. 8256)	"Air Force ADP: The Personnel Concept III System is Not Ready For Deployment," February 27, 1990
GAO	IMTEC-90-11 (OSD Case No. 8240)	"Computer Acquisition: Navy's Aviation Logistics System Not Ready For Deployment, February 9, 1990
GAO	IMTEC-90-6 (OSD Case No. 8232)	"Air Force ADP: Systems Funded Without Adequate Cost/Benefit Analysis," (Includes Reliability and Maintainability Information System) December 28, 1989
IG, DoD ²	95-141	"Report on the Controls Over U.S. Army Funds for the Army Global Command and Control System," March 9, 1995

²Inspector General, Department of Defense

Appendix D. Prior Audits of Major Automated Information Systems

<u>Government Organization</u>	<u>Report Number</u>	<u>Report Title</u>
IG, DoD	95-084	"Report on the Hotline Allegations Concerning a Request for Proposal for the Defense Message System," January 26, 1995
Army	SR 93-206	"Survey of Implementation of Major Automated Information Systems Review Councils at Major Commands," February 3, 1993
Army	WR 93-751	"Theater Army Medical Management Information System Contracts (TAMMIS)," December 7, 1992
Army	SR 93-301	"Contract Administration Program Management Office Reserve Component Automation System (RCAS)," November 10, 1992
Army	SR 92-15	"Standard Army Retail Supply System," June 2, 1992
Army	SR 92-301	"Review of Planning For Fielding the Reserve Component Automation Systems (RCAS)," January 10, 1992
Army	SR 92-300	"Review of Planning For Testing and Evaluating the Reserve Component Automation System (RCAS)," October 1, 1991
Navy	005-N-94	"Stock Point Automated Processing Replacement Project (SPAR)," November 26, 1993
Navy	009-C-93	"Naval Aviation Logistics Command Management Information System (NALCOMIS)," November 23, 1993
Navy	015-C-93	"Shipboard Non-Tactical Automated Data Processing Program (SNAP III)," January 5, 1993.
Navy	052-N-92	"Engineering Data Management Information and Control System (EDMICS)," May 1, 1992.

Appendix D. Prior Audits of Major Automated Information Systems

<u>Government Organization</u>	<u>Report Number</u>	<u>Report Title</u>
Air Force	92066008	Review of the Design and Development Activities for the Depot Maintenance Management Information System (DMMIS)," August 13, 1993
Air Force	92054002	"Review of Combat Ammunition System (CAS)," November 30, 1992
Air Force	91066032	"Review of Reliability and Maintainability Management Information System Contract Management Activities," August 13, 1992
Air Force	91066018	"Review of Depot Maintenance Management Information Systems Contract Management," July 8, 1992
Air Force	91054020	"Audit Followup, Evaluation of the Core Automated Maintenance System (CAMS) Status and Inventory Subsystem Application Controls," May 28, 1992
Air Force	91066028	"Review of the Stock Control and Distribution Expected Benefits," September 6, 1991
Air Force	0215412	"Review of Tactical Air Forces Wing Command and Control System Program," September 27, 1991
Air Force	9195424	Personnel Concept III (PC III) Security," June 12, 1991
Air Force	0196625	"Computer-Aided Acquisition and Logistics Support (CALs) Implementation Activities," April 16, 1991
Air Force	0196618	"Review of Internal Controls for Financial Management Information within Air Force Logistics Command's Logistics Management Systems," April 1, 1991.
Air Force	0215411	"Air Force Command and Control Systems (AFC2S) Development," December 31, 1990

Appendix D. Prior Audits of Major Automated Information Systems

<u>Government Organization</u>	<u>Report Number</u>	<u>Report Title</u>
Air Force	0196611	"Review of Design and Development Activities for the Stock Control and Distribution System," December 31, 1990
Air Force	0196624	"Review of Depot Maintenance Management Information System II (DMMIS II) Implementation Activities," December 7, 1990
Air Force	9196620	"Review of Contract Management Activities for the Requirements Data Bank (RDB) Program," November 23, 1990
Air Force	9195422	Review of Base-Level Planning for Second-Year Personnel Concept III (PC III) Implementation Sites," May 14, 1990
Air Force	9215411	"Review of the Air Force Command and Control Systems (AFC2S) Program," March 16, 1990

Appendix E. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
1.	Economy and Efficiency. Strengthens effectiveness of MAISRC process and integrates process into the DoD Corporate Information Management Initiative.	Nonmonetary.
2.	Economy and Efficiency. Expands MAISRC role to support the DoD migration strategies.	Nonmonetary.
3.	Economy and Efficiency. Revises DoD life-cycle management guidance for provisions in Recommendations 4. through 7.	Nonmonetary.
4.	Economy and Efficiency and Management Control. Establishes procedures to oversee major AIS life-cycle costs and benefits.	Undeterminable. Amount of funds put to better use can be determined upon validating costs and benefits.
5.	Economy and Efficiency and Management Control. Provides direction for the test and evaluation certification and cost and benefit validation of incrementally developed AISs.	Nonmonetary.
6.	Economy and Efficiency. Provides direction for new AIS development methodologies.	Nonmonetary.

Appendix E. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
7.	Economy and Efficiency. Establishes key information requirements for each type of MAISRC review.	Nonmonetary.
8.	Economy and Efficiency and Management Control. Establishes criteria to provide MAISRC oversight of command, control, communications, and intelligence major automated information systems.	Nonmonetary.

Appendix F. Organizations Visited or Contacted

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller), Washington, DC
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), Washington, DC
Director, Program Analysis and Evaluation, Washington, DC
Director, Operational Test and Evaluation, Washington, DC
Principal Deputy Under Secretary of Defense for Acquisition and Technology, Washington, DC
Deputy Under Secretary of Defense for Logistics, Washington, DC

Department of the Army

Director of Information Systems for Command, Control, Communications, and Computers, Washington, DC

Department of the Navy

Naval Information Systems Management Center, Arlington, VA

Department of the Air Force

Deputy Assistant Secretary of the Air Force (Communications, Computers, and Support Systems), Washington, DC

Other Defense Organizations

Director, Directorate for Command, Control, Communication and Computer Systems, Office of the Joint Staff, Washington, DC
Director, Directorate for Force Structure, Resources and Assessment, Office of the Joint Staff, Washington, DC

Defense Agencies

Defense Finance and Accounting Service, Headquarters, Arlington, VA

Defense Information Systems Agency, Arlington, VA

Center for Integration and Interoperability, Alexandria, VA

Defense Information System Programs Organization, Alexandria, VA

Defense Information Technology Procurement Organization, Arlington, VA

Defense Logistics Agency, Alexandria, VA

Non-Defense Federal Organization

General Accounting Office, Washington, DC

Appendix G. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
Principal Deputy Under Secretary of Defense for Acquisition and Technology
Deputy Under Secretary of Defense (Acquisition Reform)
Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
Deputy Chief Financial Officer
Deputy Comptroller (Program/Budget)
Director, Program Analysis and Evaluation
Under Secretary of Defense (Personnel and Readiness)
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
Deputy Assistant Secretary of Defense (Acquisition)
Director, Operational Test and Evaluation
Assistant to the Secretary of Defense (Public Affairs)
Director, Joint Staff

Department of the Army

Auditor General, Department of the Army

Department of the Navy

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

Department of the Air Force

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

Other Defense Organizations

Director, Defense Commissary Agency
Director, Defense Contract Audit Agency
Director, Defense Finance and Accounting Service
Director, Defense Information Systems Agency
Director, Defense Logistics Agency
Director, National Security Agency
Inspector General, National Security Agency

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
Technical Information Center, National Security and International Affairs Division,
U.S. General Accounting Office

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

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 National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal
Justice, Committee on Government Reform and Oversight
House Committee on National Security
House Subcommittee on Military Readiness, Committee on National Security

Part IV - Management Comments

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



COMMAND, CONTROL,
COMMUNICATION
AND INTELLIGENCE

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-6000

08 MAY 1995



MEMORANDUM FOR DIRECTOR, READINESS AND OPERATIONAL SUPPORT
DIRECTORATE, DODIG

SUBJECT: Audit Report on the Oversight Process of the Major Automated Information System
Review Council (Project No. 4RE-5025.01)

We appreciate the opportunity to comment on the subject report. Many of the recommendations in the report could improve MAISRC oversight. While the current AIS life-cycle management directives are intended to achieve the goals of most of your recommendations, we agree that improvements and clarifications would be helpful. As indicated in the attached response, a number of initiatives are underway that will result in revisions to the directives. These revisions will achieve many of the report's recommendations.

As requested by your memorandum of March 8, 1995, we have addressed each recommendation by indicating either concurrence or nonconcurrence, provided the specific reasons for each nonconcurrence, and described planned corrective actions, where appropriate.

Questions regarding the attached response may be directed to my action officer, Dave Mullins, at 703-756-4987.

Anthony M. Valletta
Deputy Assistant Secretary of Defense
(C3I Acquisition)

Attachment

cc:
ASD(C3I)
DASD(IM)



**DASD(C3I ACQUISITION) RESPONSE TO
AUDIT REPORT ON THE OVERSIGHT PROCESS OF THE MAISRC
(PROJECT NO. 4RE-5025.01)**

Recommendation 1: Revise DoD Directive 8120.1, "Life-Cycle Management of Automated Information Systems," January 14, 1993; DoD Instruction 8120.2, "Automated Information Systems Life-Cycle Management Process, Review, and Milestone Approval Procedures," January 14, 1993; and DoD Manual 7920.2M, "Automated Information Systems, Life-Cycle Management Manual," March 1990, to reflect the provisions in Recommendations 2 through 7.

OSD(C3I) Response:

Concur. As indicated below, the revisions to DoD Manual 7920.2-M, which will be published as DoD Manual 8102.2-M, will address some of the concerns expressed in this report. All of the above-mentioned directives and instructions will be revised as the result of other initiatives, such as the MAISRC Functional Process Improvement Project and the December 9, 1994 report on "Reengineering the Acquisition Oversight and Review Process."

Required Actions: None, other than as indicated below.

Recommendation 2: Specify procedures that will involve the Major Automated Information Systems Review Council staff in the ongoing efforts of the DoD Corporate Information Management Initiative.

OSD(C3I) Response:

Nonconcur. The management structure and focus for DoD Corporate Information Management initiatives is in four areas: common information systems; shared, standard data; reengineered business processes; and a computer and communications infrastructure. The OSD functional Principal Staff Assistants (PSAs), by Deputy Secretary direction, are to accomplish the first three areas. The Assistant Secretary of Defense for Command, Control, Communications and Intelligence (ASD(C3I)) is to implement a flexible, world-wide computer and communications infrastructure. The DoD has established the Enterprise Integration Corporate Management Council to provide senior leadership for management and oversight of implementation of cross-functional integration issues and technical infrastructure solutions, including specific information systems within the Defense Information Infrastructure. The MAISRC staff participates in this process whenever the CIM initiatives become major automated information systems.

Required Actions: None

Renumbered
as Recommendation 3.

Renumbered
as Recommendation 1.

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

Final Report
Reference

Renumbered as
Recommendation 2.

Recommendation 3: Specify procedures for the Major Automated Information System Review Council staff to perform assessments of, and concurrent with, the identification and development of each migratory major automated information system that will be used on a DoD-wide basis.

OSD(C3I) Response:

Nonconcur. Current life-cycle management policies already apply to migration systems, and when those systems meet the major AIS threshold, their development and management are subject to OSD MAISRC oversight. By Deputy Secretary direction, the identification of migration systems is to be made by the functional OSD PSA based on evaluation criteria provided by the ASD(C3I) and supported by DISA's integration checklist for migration assessment. The ASD(C3I) reviews and approves each migration system proposed by the PSAs. Currently, almost half of the 43 major AIS programs under OSD MAISRC oversight, are migration systems.

Required Actions: None

Revised.

Recommendation 4: Designate the Director, PA&E, to validate the costs and benefits of a major AIS throughout its life cycle.

OSD(C3I) Response:

Concur. DoD Directive 8120.1 (paragraph E.4.) and DoD Instruction 8120.2 (paragraph E.4.) already give the Director, PA&E, the responsibility to validate the costs and benefits of a major AIS throughout its life cycle. However, as indicated in our response to Recommendation 6 below, clarifying guidance will be issued by PA&E and in DoD Manual 8120.2-M

Required Actions: See Recommendation 6 below.

Revised
and
Renumbered as
Recommendation 6.

Recommendation 5: Establish procedures and criteria to oversee the cost, schedule, and performance of major AISs developed in increments.

OSD(C3I) Response:

Concur that DoD life-cycle management (LCM) directives should include procedures and criteria for overseeing incrementally developed AISs. Currently, DoD Directive 8120.1 (paragraph F.3.) requires programs employing a tailored strategy to obtain "up-front" approval for that strategy from the milestone decision authority before program management proceeds to the next phase. Also, the program manager must obtain written

approval for the strategy in the system decision memorandum (SDM). These requirements result in SDM instructions to the program managers on what cost-and-benefit-related analyses must be accomplished within specific time frames.

Required Actions: We will consider clarifying the procedures for the oversight of incrementally developed AISs as part of the planned rewrites of DoDD 8120.1 and DoDI 8120.2. These rewrites, which will result from the results of the MAISRC Re-Engineering Project and other reform initiatives, are scheduled to begin in July 1995.

Recommendation 6: Specify life-cycle management requirements for validating costs and benefits and for performing operational tests and evaluations of major automated information systems developed in increments. Determine the life-cycle management requirements in coordination with the Director, Program Analysis and Evaluation, and the Director, Operational Test and Evaluation.

OASD(C3I) Response:

Concur. The finding that supports this recommendation states that operational testing is performed only on completed AISs, not on AISs developed and deployed in increments. This is not the case. A typical example of operational testing for a major AIS being implemented incrementally is the Composite Health Care System (CHCS), which achieved Milestone III approval in October 1992, after extensive operational test and evaluation for its initial outpatient release. Since then, several CHCS releases (increments) have been developed and deployed after thorough and comprehensive operational testing. Further, all follow-on system increments are required to go through adequate operational testing prior to fielding.

Paragraph E.7. of both DoD Directive 8120.1 and DoD Instruction 8120.2 assign responsibly to the Director, OT&E to assess and validate major AIS program compliance with applicable operational test and evaluation planning policies and procedures. The Director, OT&E also approves the test and evaluation master plan (TEMP) and operational test plans; monitors operational test and evaluation, in accordance with DoD Instruction 5000.2; and provides the test and evaluation results to the MDA. Specific procedures for conducting operational testing for AIS programs developed and deployed in increments are being written and will be annexed to the final DOD Manual 8120.2-M, "Automated Information System Life Cycle Management Manual."

As indicated above, Paragraph E.4. of both DoD Directive 8120.1 and DoD Instruction 8120.2 outline the responsibilities of the Director, PA&E. These responsibilities include the review and validation, at appropriate LCM reviews, of major AIS program cost estimates, life-cycle cost estimates, independent cost estimates, benefit analyses, and functional economic analyses (FEAs).

Renumbered
as Recommendation 5.

Revised.

An incremental program is generally characterized by acquisition, development, and deployment of functionality through a number of clearly defined system "increments" that essentially stand on their own. (Some of the investment costs for the initial increments, particularly for hardware, may support later increments.) DoDI 8120.2 recognizes that systems developed in increments cannot be overseen effectively using the traditional milestone approval process. Hence, it states that "depending on the selected program strategy, combined or repeated milestone decision points and associated activities within the life-cycle phase may be required. The number of replicated decision points, and how increments between those decision points are reviewed, shall be specified in the proposed program strategy presented at Milestone I."

PA&E recognizes that the costs and benefits for an incremental program are difficult to estimate for the program as a whole, because different increments are at different stages of definition, development, and deployment. The cost and benefit estimates are normally most accurate and verifiable for those increments that are closest to deployment. Future increments, which account for a large portion of the claimed benefits, fluctuate regularly in terms of the functionality that they will encompass. Thus, PA&E recommends that the cost and benefit analyses for an incremental program undergoing a MAISRC milestone review be focused on the increment or increments that are in phase with that milestone. For the Sustaining Base Information Services (SBIS) program, for example, which is requesting a Milestone II/III review later this year, the MAISRC will review the first two increments thoroughly in terms of costs and benefits. On the basis of that review, the MAISRC can choose to: i) hold repeated Milestone II/III reviews for subsequent increments, ii) delegate the milestone approval process for subsequent increments to the Service and hold periodic in-process reviews, or iii) delegate all future reviews to the Service. The drawback to this approach is that, because of an initial investment in hardware and system configuration, the return on investment for early increments may not be as favorable as for the program as a whole. This factor must be taken into account in the cost/benefit review. PA&E has provided draft procedures for developing an AIS Economic Analysis for publication in the final DOD Manual 8120.2-M, "Automated Information System Life Cycle Management Manual." PA&E is also in the process of revising "DoD Automated Information Systems (AIS) Economic Analysis (EA) Guide (DAG) and plan to publish it with C3I concurrence.

Required Actions: ASD(C3I) will publish DOD Manual 8120.2-M, "Automated Information System Life Cycle Management Manual" by September 1995; and Director PA&E plans to publish the DAG by October 1995.

Recommendation 7: Designate key program management information, such as validate cost-benefits analyses and operational test plans, for milestone and in-process reviews performed by the MAISRC.

OASD(C3I) Response

Concur. DoD Directive 8120.1 (Paragraph F.3.) provides for approval of tailoring and special guidance pertaining to each review (whether it be a milestone review or an in-process review (IPR)). DoD Instruction 8120.2 describes only the nature of the documentation for IPRs because, by design, IPRs can be conducted for various purposes. Thus, the specific purpose and documentation requirements for such reviews are stated in the memorandum requesting the review. The final DOD Manual 8120.2-M, "Automated Information System Life Cycle Management Manual," which will replace DoD Manual 7920.2, will provide more detailed procedures for the conduct of AIS LCM activities and improved guidelines for the preparation and submission of documentation for LCM reviews.

Required Actions: Publish DOD Manual 8120.2-M, "Automated Information System Life Cycle Management Manual" by October 1995.

Recommendation 8: Clarify the oversight responsibilities of the Major Automated Information Systems Review Council for command and control, communications, and intelligence major automated information systems that have not been exempted from DoD Directive 8000.1, "Defense Information Management Program," October 27, 1992.

OSD(C3I) Response:

Concur that MAISRC oversight responsibilities for command and control systems should be clarified. Currently, Paragraph B of DoD Directive 8120.1 defines the scope and applicability of AISs subject to MAISRC review. Paragraph B.2. of DoDD 8120.1 states that the Directive applies to ". . . all AISs . . . that support all DoD mission areas, except as specified in subsections B.3. through B.7., below." None of the exceptions in subsections B.3. through B.7. exempt command and control systems. Moreover, Paragraph B.2. goes on to state that the applicability of DoDD 8120.1 "is not determined by the applicability of the Brooks Act or the Warner Amendment." That statement is intended to clarify that a command and control exemption under the Warner Amendment does not equate to an exemption from DoDD 8120.1.

Required Actions: The revisions to DoDI 8120.1 and DoDI 8120.2 scheduled to begin in July 1995 will further clarify that major AISs used for command and control are subject to MAISRC oversight.

Audit Team Members

This report was prepared by the Readiness and Operational Support Directorate, Office of the Assistant Inspector General for Auditing, Department of Defense.

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