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NAVAL POSTGRADUATE SCHOOL
Monterey, California

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THESIS

CORPORATE INFORMATION
MANAGEMENT; A CASE STUDY

by

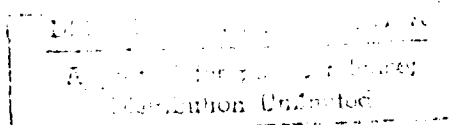David D. Schweizer
and
James P. Steele, III

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Thesis Advisor: Will'am J. Haga

Second Reader: Nancy C. Roberts

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Professor Bill Haga	(408)646-3094	AS/Ha

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Corporate Information Management; A Case Study

by

David D. Schweizer
Lieutenant, United States Navy
B.S., United States Naval Academy, 1985

and

James P. Steele, III
Lieutenant, United States Navy
B.S., United States Naval Academy, 1982

Submitted in partial fulfillment
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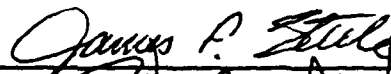
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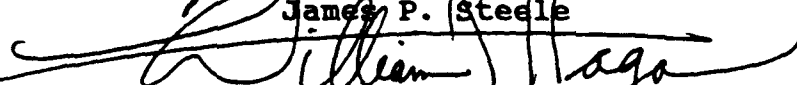
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Author: _____
David D. Schweizer

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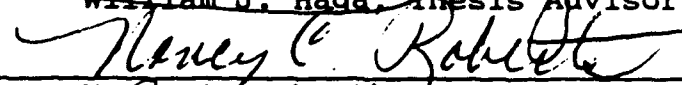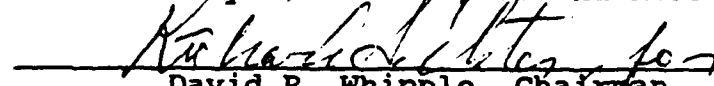James P. Steele

Approved by: _____
William J. Haga, Thesis Advisor

_____
Nancy C. Roberts, Second Reader

_____
David R. Whipple, Chairman
Department of Administrative Sciences

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ABSTRACT

This thesis documents in a case format the events, environment and decisions in the genesis and evolution of the Department of Defense's Corporate Information Management initiative.

TABLE OF CONTENTS

I. INTRODUCTION

A. BACKGROUND

In response to GAO and Congressional criticism in 1989, the Department of Defense (DoD) sought to eliminate the Automatic Data Processing (ADP) redundancy and incompatibility across the uniformed services and agencies. DoD was determined to identify ADP management inefficiencies, and develop a common data architecture for DoD administrative information systems (IS). Corporate Information Management (CIM) was established as the vehicle to attack these various problems.

The CIM implementation provides a rare opportunity to observe the birth and development of a Department of Defense strategic information system.

The CIM initiative was developed to correct the myriad of IS deficiencies within the defense services and agencies. This area of study relates directly with the Computer Systems Management (CSM) curriculum for several reasons: (1) there is a lack of current strategic level IS issues for students to discuss in the classroom; (2) students can discuss the various forces that come to play when a strategic level decision is made in a highly parochial, complex organization. Issues such as politics, turf fighting, inter-service bickering, and reluctance to forced change are important because most

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students have an operational background and do not often have the opportunity to discuss these types of issues; and (3) the CSM curriculum provides students with courses whose topics include: data redundancy, data incompatibility, concurrency, management inefficiencies, and economic analysis. This case study allows the CSM student to bring all curriculum course information to bear on possible solutions to the issues.

B. RESEARCH QUESTION

The primary research questions asked are: 1) What is CIM? and 2) How does it address the concerns of DoD's ADP redundancy across services and agencies, ADP management inefficiencies, and incompatible data architectures DoD-wide?

The subsidiary research question was to identify the forces that come into play when a strategic decision is made in an organization which traditionally does not welcome forced change.

C. SCOPE, LIMITATIONS AND ASSUMPTIONS

The perspective was from the strategic level, top-down and external in nature. We did not study any level of the CIM organization below the functional work group. We did not focus on the effectiveness of the CIM strategy because it is not yet fully developed.

The research was limited due to the real-time nature of the CIM initiative. Consequently, there is no historical database and our data are based on our ability to obtain

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articles, internal CIM documents, Congressional testimonies and personal interviews. The dynamic environment of the CIM office created a sometimes unreliable research interface.

D. LITERATURE REVIEW AND METHODOLOGY

The literature review centered on problems one could anticipate in initiating and implementing a project of this scope. There was no previous research of CIM because of its recent implementation at DoD. Hence, our research literature and methodology consisted of obtaining documents, memos, and interviews on an <u>ad hoc</u> basis. We relied on weekly periodicals, Congressional testimonies and other information obtained from the CIM office or found in government publications.

II. CASE METHODOLOGY

A. CASE STUDY FOR RESEARCH

A case study is an empirical inquiry that, "investigates a contemporary phenomenon within its real life context; when the boundaries between phenomenon and context are not clearly evident; and multiple sources of evidence are used." [Ref. 1:p. 23]

Within the social sciences, the five commonly accepted research strategies are experiment, survey, archival analysis, history and case study. Experiments, history and case studies address the "how" and "why" research questions. Experiments control behavioral events while concentrating on contemporary phenomena. History neither controls behavior events, nor concentrates on contemporary phenomena. As defined above, a case study concentrates on contemporary phenomena without regard to behavioral events. In contrast to the history research strategy, the major difference is that case study researchers add their direct observation and personal interviews to their data collection methods. [Ref. 1:p. 19]

B. ADVANTAGES OF CASE STUDIES

The ability of the case study to draw from various sources makes it effective [Ref. 1:p. 20]. These sources of data include official records, documents, artifacts, personal interviews and observations. The case study then presents the

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data from several angles and points of view. One set of data with a single point of view does not often represent the true situation. With multiple sources of data a more robust and comprehensive picture can be obtained, and the research captures a fuller story.

An additional advantage is the use of qualitative data. These data are in the form of words, not numbers. As an advantage over quantitative data, qualitative data are a "source of well-grounded, rich descriptions and explanations of processes occurring in local cc :exts." [Ref. 2:p. 15] Words often give a much richer texture to data when presented in a descriptive manner. This stirs the reader's imagination more than can a chart full of numbers. [Ref. 2:p. 15]

Additionally, case study research is important to the information systems environment. "The information systems area is characterized by constant technological change and innovation." [Ref. 3:p. 370] Such change affects management and organizational issues in an information systems department. Case study research illuminates these issues with valuable insight. [Ref. 3:p. 370]

C. DISADVANTAGES OF CASE STUDIES

The major disadvantage of using the case study for research is the use of qualitative data. Often people rely on numbers to make comparisons and draw conclusions, even though some numbers have subjective and questionable origins. One criticism of using qualitative data is that words have

various interpretations, whereas numerical data yields more similar interpretations. Another reason to question the case study is that it is difficult for researchers to reproduce a case study and its conclusions from the same set of qualitative data. "Observations tend to be unique and non-replicable." [Ref. 4:p. 2] Researchers with a positivism frame of mind are apprehensive when using a case study as a research method. [Ref. 2:p. 16]

Uncertainty about case studies stems from incomplete documentation. Incomplete documentation biases and influences the data. Without standardized methods for qualitative data analysis, poorly detailed documentation continues to be a problem. [Ref. 2:p. 16]

Other disadvantages to case study researchers include a necessity for time-consuming and meticulous research with extensive documentation. Critics also feel that case study conclusions result in no general scientific consensus or "rules of thumb" which apply to "real life" situations. Moreover, they are not universal to other similar organizational studies. "Case study conclusions are generalizable to theoretical propositions and not to populations or universes." [Ref. 1:p. 21]

D. ADVANTAGES OF CASE STUDIES FOR TEACHING PURPOSES

According to Robyn, "there are two criteria potentially present in any learning situation." [Ref. 5:p. 1] One is the knowledge itself and the other is the learning process. Knowledge is the foundation of learning. The learning process is a methodology to making decisions and solving problems. A student needs both knowledge and the ability to deal with life away from the classroom. [Ref. 6:p. 1]

Case studies provide real life experiences for students to view. The advantage of this technique is that students can absorb the lessons of cases without having to live through them. With the knowledge gained, the student can confront everyday situations and experiences with greater insight and confidence. [Ref. 7:p. 56]

Traditionally, a classroom setting presents both facts and situations of a problem which has only one correct answer and corresponding methodology [Ref. 5:p. 2]. Life is full of situations with incomplete or irrelevant facts with which to base decisions. Often there is more than one right decision or solution, if in fact a solution exists. "Case studies are valuable lessons in teaching students the habits of diagnosing problems, analyzing and evaluating alternatives and formulating workable plans of action." [Ref. 7:p. 56] Moreover, it is important for students to understand that politics is a factor in the decision making process. "The decision is a political process...involving power and

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influence." [Ref. 4:p. 2]   Students must learn that real life decisions are based on mental thought and experience, *not* simple step by step checklists.   Case studies hone this decision making process.   Case studies provide students with the opportunity to apply theory to situations within the sanctuary of a classroom environment.   In a sense, a case study is a "simulated experience." [Ref. 8:p. 109] Additional benefits include teaching students the following skills: finding pertinent facts, analyzing alternatives, deciding which alternatives are viable, and deciding what questions to ask. [Ref. 5:p. 2]

E.   METHODOLOGY OF THESIS

The case study series that is the subject of this thesis concerns the chronological events of an evolving Department of Defense strategic level initiative from its genesis in October 1989 to the present in December 1990.   The case describes the on-going development of the Corporate Information Management strategy in the Department of Defense. An organizational case study is defined as:

> Where you purposely observe the entire configuration of individuals and groups in the setting of an organization, and you observe events in the way that they naturally unfold, without imposing any sort of experimental controls or treatments whatsoever on what it is you're observing. [Ref. 4:p. 1]

A case study "treats people as the observable agents through which the unobservable forces of the organization act." [Ref. 4:p. 9]

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The case study writers studied the recently established Corporate Information Management (CIM) initiative adopted by the Department of Defense from a strategic perspective. In response to GAO and Congressional criticisms, the Department of Defense (DoD) was tasked with solving the problems of Automatic Data Processing (ADP) redundancy across the services and agencies, identifying and correcting ADP management inefficiencies, and developing common data architectures for DoD computer systems. CIM was established to correct these various problems.

A group interview was conducted in the CIM office located in the Pentagon. The group consisted of four senior members of the CIM management staff. These interviews took place on June 25, 1990. The interviewers were Professor William James Haga and Lieutenant James P. Steele. During this day we had the opportunity to interview the staff both, as a group, and individually as their schedules would permit. A minor caveat is that a few of the interviewees particularly when interviewed in a group presented us with "party line" responses in a couple of instances. Because the CIM initiative is in its infancy and its long term survival initially is questionable, the data presented by these interviewees may be shaded towards protecting the organization. We also interviewed a senior navy IRM official at the Naval Postgraduate School. His comments seemed honest and forthright. His perspective was, as expected, concerned

mainly with the effects the CIM initiative would have on navy IRM projects. Additionally, documents and trade press articles were obtained both locally and from the CIM office.

We attempted to set up interviews with the ASD, Donald J. Atwood, and the General Motors executives who currently run the GM CIM office. Also, we were not able to interview or observe any of the functional groups. We feel that this case could have been enhanced if even one of the aforementioned interviews or observations had taken place.

III. GENESIS OF CIM

A. THE DEFENSE MANAGEMENT REVIEW (DMR)

On July 15, 1985 President Reagan issued Executive Order 12526 which established the President's "Blue Ribbon Commission on Defense Management." David Packard was appointed Chairman of the commission [Ref. 9:p. 1]. The Packard Commission report of June 1986 criticized, among other things, the complex and cluttered acquisition processes [Ref. 10:pp. 18-20]. The Commission also urged reforms of the defense procurement system, and better management of the Defense Department and its assets. [Ref. 11:p. 8]

During the early months of President Bush's administration in 1989, the Department of Defense (DoD) received sharp criticism of its automated data processing (ADP) acquisition and management practices. The President, in a speech to Congress in February 1989, instructed the Secretary of Defense to overhaul DoD acquisition and resource management practices. [Ref. 11:p. 8]

In July 1989, the Secretary of Defense drafted the <u>Defense Management Review to the President</u> which addressed the management criticisms and implementation issues of the Packard Commission recommendations. In the area of automated data processing, the DoD was obliged to deal with redundancy, consistency, concurrency and standardization in management

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information systems. The DMR identified major functional areas of management which could use a single information system. It also addressed DoD-wide consolidation of the Department's more than 1000 information systems, and streamlining the uniformed services' pay and accounting systems. Through management changes, personnel cuts and enhanced information systems, the March/April edition of Defense 90 stated that DoD anticipated $2.3 billion in savings in 1991, and $39 billion cost savings over five years. [Ref. 11:pp. 13-15]

B. GOVERNMENT ACCOUNTING OFFICE (GAO) CRITICISMS

At the May 18, 1989 hearing of the Legislation and National Security Subcommittee (LNSS) of the House Committee on Government Operations, the GAO testified about six reports that the subcommittee had requested. These reports criticized various DoD automated information systems. [Ref. 12:pp. 3-4]

In July, 1989, Congress responded to the GAO reports which cited mismanagement of automated data processing in DoD by suggesting that funding would no longer be forthcoming for DoD investments in information technology until the department devised a unified, non-duplicative, comprehensive strategy for its information systems (IS). [Ref. 13:p. 181]

In November, 1989 the Committee on Government Operations presented its sixth report, entitled "DoD Automated Information Systems Experience Runaway Costs and Years of Schedule Delays while Providing Little Capability." This

report stressed the importance of realizing cost savings in DoD by improving management of automated information systems. In Congressional testimony, the GAO severely criticized the services' handling of development as well as acquisition processes [Ref. 12:p. 4]. Originally prompted by the LNSS, which conducted a hearing on the Navy Standard Automated Financial System (STAFS) project on September 13, 1988, the GAO verified development schedule delays and cost overruns in an additional seven major automated information systems to the Subcommittee. These systems:

> Experienced significant cost growth, some in the hundreds of millions of dollars. As of September 1988, the estimate to develop and deploy the systems totaled about $2 billion -- almost twice the original estimate cost. Four of the eight systems have been in development for the last 8 years and two of the systems' development efforts were abandoned after $237 million, completion dates have been delayed by 3 to 7 years and none of the systems are scheduled to be fully deployed until the 1990's. [Ref. 12:p. 2]

According to the LNSS, inaccurate ADP cost estimation was a recurring problem which led to inadequate funding and systems with reduced capabilities. This occurred in both the Navy STAFS, and the Air Force Engineering Data Computer Assisted Retrieval System (EDCARS) programs [Ref. 12:pp. 7-9]. The GAO found a 20-month schedule slippage in the Air Force Stock Control and Distribution project. 25% of all large scale systems were canceled before completion and less than one percent were finished on schedule [Ref. 12:pp. 7-9]. The GAO identified incomplete and substandard software testing in the Navy's STAFS program, the Air Forces's Requirements Data

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Bank (RDB) as well as its EDCARS program, and the Army's Civilian Personnel System (ACPERS) [Ref. 12:p. 12]. Another problem described by the GAO reports was the shortfall of DoD technical personnel with the required skills to work on programs in both development and acquisition processes [Ref. 12:p. 12]. The GAO also criticized the lack of credible cost estimate data given to the Office of the Secretary of Defense (OSD) Major Automated Information System Review Council (MAISRC) by the services. For example, the Navy underestimated life cycle costs of its Integrated Disbursing and Accounting Financial Information Processing (IDAFIPS), Naval Aviation Logistics Command Management Information System (NALCOMIS), and STAFS by $788 million, $488 million, and $659 million respectively. The Navy underestimated the costs of these projects to MAISRC, which subsequently reported these inaccurate data to Congress, which resulted in an incorrect picture of these costs for budget negotiations. [Ref. 12:p. 15]

C. CONGRESSIONAL CRITICISMS

The House of Representatives' Armed Services Committee charged that DoD's ADP practices were "in disarray and out of control." [Ref. 13:p. 181] This response was due to severe mismanagement with annual ADP expenditures. Over three quarters of the $9 billion spent by DoD each year on automated data processing annually comes out of the operation and maintenance account. When ADP programs exceed their budgets,

they are financed by taking funds from the operation and maintenance accounts of other DoD programs, including military training and maintenance [Ref. 13:p. 181]. On July 1, 1989 the House Armed Services Committee recommended reducing the DoD ADP appropriation by $165.5 million. The idea was to slow down the flow of ADP appropriated funds until the various services corrected their automated data processing management and acquisition difficulties. The committee further directed that:

- All funds used for major information systems must be approved by MAISRC.

- Proposed that expenditures for major automated information system must include an economic analysis in support of the system which shall be reviewed annually and submitted in the DoD budget to Congress.

- Any major administrative automated information system which is determined to be service unique must be reported to the Armed Services Committee prior to any initial MAISRC milestone.

- Each major automated information system project manager must include in the annual budget submission a current set of management indicators.

- The DoD Comptroller along with the Director of Operation Test and Evaluation (DOT&E) were charged with developing a quality assurance program for major automated information systems.

- The DoD Comptroller and the Defense Acquisition Board must report to Congress within 90 days of a critical milestone whether to use MAISRC for evaluation of computer systems in weapons programs. [Ref. 13:p. 181]

D. SECRETARY OF DEFENSE'S RESPONSE

In response to GAO and Congressional criticisms outlined in the DMR, the Secretary of Defense realized this issue needed a solution. He directed DoD to solve the problems of ADP redundancy across services and agencies by quickly identifying and correcting ADP management inefficiencies, and by developing common data architectures for computer systems DoD-wide. Moreover, DoD had to realize ADP cost savings in view of expected paring down of Defense spending in the post-Cold War era.

E. CORPORATE INFORMATION MANAGEMENT (CIM) ESTABLISHED

On October 4, 1989, the Deputy Secretary of Defense established a Corporate Information Management initiative through three actions. First an executive level group was formed to plan and develop data standards, system specifications and information resource strategies across DoD components. This became known as the "CIM approach." Second, the DoD Information Resources Management office was charged with developing a process guide and management plan for management information systems. And, third, technical and business functional groups were directed to develop information requirements of the OSD, Uniformed Services, and Defense Agencies [Ref. 14]. The functional business and technical areas included Civilian Payroll, Civilian Personnel, Contract Payment, Financial Operations, Government Furnished Material, Material Management, Medical, and Warehousing [Ref.

15]. These functional work groups were charged with developing standardized and consistent data structures and environments [Ref. 14]. During the interim period, between what had currently existed and the eventual CIM designed system, current policies were to remain in effect which included life-cycle management principles as well as MAISRC procedures. The Deputy Secretary emphasized a need to ensure savings of the $9 billion annual information technology expenditure. [Ref. 14]

F. DEPUTY SECRETARY AND GENERAL MOTORS

The Deputy Secretary of Defense (DSD) was appointed by President Bush and took office April 24, 1989. Prior to being brought on board to manage the DoD comptroller office, which includes the office of information resources management (IRM), he was Vice Chairman of the Board of General Motors (GM) and President, Delco Electronics Corporation and GM Hughes Electronics [Ref. 16]. The DSD brought with him a corporate information management (CIM) strategy that was being implemented by his former employer. GM was having problems with its information systems that were similar to the DoD's dilemmas. These included system redundancy, high-cost systems, non- standard data architectures and interfaces and divisional parochialism and rivalry. Due to a declining economic market, the company needed to consolidate and standardize their information systems in the wake of the strong divisional differences [Ref. 17]. The company devised

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its CIM program to bring information resources together across

divisional boundaries.

IV. CIM GOALS AND PLANS

A. INTRODUCTION

This chapter is designed to give the reader a better understanding of the purpose, objectives, scope, implementation, and methodology of the CIM initiative. Although brief, it will prepare the reader for future chapters and will help maintain continuity.

B. OBJECTIVES

The Corporate Information Management (CIM) initiative is a DoD program that originated under the direction of the DoD comptroller. It has three objectives:

- To ensure the standardization, quality, and consistency of data from DoD's multiple management information systems.

- To identify and implement management efficiencies in support of business areas throughout the information system life cycle.

- To eliminate duplication of efforts in the development of multiple information systems designed to meet a single functional requirement. [Ref. 15]

C. SCOPE

Besides these objectives, the CIM initiative has a range which covers:

- DoD-wide information management

- Information management within each functional administrative area [Ref. 15]

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D. PURPOSE

The purpose of the initiative is to eliminate redundancy, to identify and implement management efficiencies throughout information system life cycles, and to develop common data requirements and formats to eliminate redundant information systems that support identical functions. CIM aims to ensure the standardization, quality, and consistency of data from DoD's multiple management information systems. Its primary purpose was to develop standard functional requirements to meet DoD's management information systems needs [Ref. 15].

E. IMPLEMENTATION

The CIM initiative was implemented through two groups which were to manage different levels of strategy. The first group was the Executive Level Group (ELG) which was charged with developing a DoD-wide information management strategy. It consists of six industry executives and three DoD executives. The industry executives include university deans and executives from the CIM office at General Motors. Each member was nominated on the basis of their expertise in the management of information systems. The purpose of the ELG was to examine the critical elements of DoD CIM, evaluate current oversight practices, and review the procedures of the functional work groups. It provides a wide view of management instead of focusing on individual programs. The ELG includes a Federal Advisory Council which reports directly to the Deputy Secretary of Defense, advising the Secretary on CIM

issues. The group met one or two days each month during 1990.
[Ref. 15]

The second level of CIM implementation is the eight functional work groups which are responsible for the functional administrative areas of management information systems:

- Civilian Payroll

- Civilian Personnel

- Contract Payment

- Financial Operations

- Government Furnished Material

- Material Management

- Medical

- Warehousing (Distribution Center) [Ref. 15]

Each work group is made up of senior MIS personnel from services and defense agencies, as well as representatives from CIM. The purpose of the Functional Groups is to study and develop requirements from a functional point of view. The expectation was that the CIM initiative would eventually encompass all administrative functions in the Department of Defense which would include many more than the original eight, but not all these have been identified.

One of the important elements of the CIM initiative was that all functional areas use consistent development processes and methodologies. The product from each group was to be a

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set of standard functional requirements and system specifications for a single management information system functional area. The methodology for developing the requirements design used a phased approach as explained below. [Ref. 15]

While initial planning is within the scope of the functional work groups, some CIM officials acknowledged that data interfaces across functional areas would ultimately compel a single, unified, standard data architecture throughout all DoD administrative systems.

F. CIM METHODOLOGY

The methodology of the functional groups is specifically directed toward meeting strategic DoD goals. It must cover the entire planning process, from strategic level mission statement definition to design details such as data definitions and aata modelling. Currently, no methodology exists which will satisfy the requirements of such a comprehensive, all encompassing project. The CIM methodology includes: strategic planning, information engineering, data modelling, program analysis and evaluation. There are three phases to this methodology [Appendix A]:

1. Functional Vision - provides a long range goal for each working group. Each goal will include a mission and scope, policy and guiding principles over a 10 out year time frame.

2. Functional Business Plan - provides the functional business requirements, actions and milestones which will develop the vision into its future state. This is accomplished by analyzing the current business plan to gain a baseline reference, and then repeatedly refining the strategy that will be used to implement the information systems that will support the long range business functions.

3. Information System Strategy - this strategy involves a plan of actions and milestones which will assess the current information systems contribution to the ultimate vision. This assessment will determine the transition path from the current information systems to those which will support the standard systems of the future vision. This phase does not include the design and implementation of the strategy. [Ref. 18:pp. 3-4]

DOD implemented CIM by defining its objectives, scope and purpose. But the real work started with the CIM methodology. The product of this process is a set of standard system requirements which will be used for the design of the new information systems.

V. CIM ORGANIZATION

A. INTRODUCTION

This chapter will show where the CIM office exists within the DoD. It will also describe in detail the various internal task forces, counsels, and groups which make up the CIM organization.

B. CIM OFFICE IN DOD

The CIM office was placed within DoD as shown in Appendix B. On October 17, 1989, a CIM office was created under the DoD deputy comptroller for information resource management (DC(IRM)). She appointed a director of CIM who began by blending the General Motors recipe for standardizing information resources with her own ideas. [Ref. 17]

C. PURPOSE OF CIM TASK FORCE

The director of CIM was charged with heading the CIM Task Force which had the responsibility of establishing the functional work groups in each identified area. Other responsibilities included:

- Formulating technical and management concepts and strategies.

- Providing direction and coordination.

- Resolving technical and functional issues.

- Providing administrative and logistical support. [Ref. 15]

D. FUNCTIONAL WORK GROUPS

For each functional area, a working group was created that was staffed with the cream of the experts in that area from the uniformed services and DoD agencies. The leader of each functional work group is from the Office of the Secretary of Defense functional policy office. The members of each functional group are from the Army, Navy, Air Force, Marine Corps, and Defense agencies. These people are experts in functional policy, operation, user/client interface, and ADP systems. Participation is on a full time basis for the duration of the CIM development effort. Included in each group is a CIM functional information manager, a professional facilitator, along with technical and administrative support from the CIM office. The charter for each working group is to devise a long range vision of a unified, standardized IS strategy for its respective functional area. The emphasis is on _unified_ and _standardized_. The strategies to be devised must be conceived at the DoD level rather than being an amalgam of the parochial interests of the individual services and agencies. The planning horizon for implementation of these DoD-level visions is ten years. The working groups have 18 months in which to complete their work (the earliest is due in February 1991 and the latest by July 1991). [Ref. 15:p. 35]

Appendix C shows the number of people required to fully man the eight functional groups. The names on the far left column are the uniformed services and defense agencies which

make up the Department of Defense. Each component was required to send the designated number of personnel listed in the table. The totals in the right most column indicate the total number of people each component must "give up" temporarily. [Ref. 15]

E. CIM FUNDING

The purpose of CIM was not only to standardize automated data processing and develop integrated functional requirements, but also to realize cost savings by cutting the redundancy which plagues DoD's information systems. The eventual systems that the CIM initiatives would implement in place of the redundant systems should create long term cost savings. During the interim period, while the CIM initiative develops, DoD must screen and submit all proposed management information systems to CIM for continuance approval and funding. [Ref. 19:p. 1]

DoD planned to reduce the $9 billion annual ADP budget to fund the operations of the CIM office. Reductions included $600,000 for FY 1990 and $265.1 million for FY 1991 for a total of $3.5 billion through FY 1995. This estimate provides funding for CIM as follows: FY 1990, $1.7 million; FY 1991, $50.0 million; FY 1992, $220.0 million; FY 1993 $320.0 million; FY 1994 $323.0 million; FY 1995, $329.0 million (Appendix D). The funds for CIM include contract support, travel, office space and other support for development of

standard systems by the functional work groups and the executive level steering group. [Ref. 19:pp. 1-3]

The idea was that the DoD could detour 25% of the funds planned for development, restoration or amplification of new or existing systems to use in converting systems to the CIM initiatives. Additional savings were predicted to be realized by reduced operation and maintenance costs of the new CIM systems. [Ref. 19:p. 2]

As CIM functional work groups developed standards and specifications for DoD-wide management information systems, about one third of CIM's funding would be held for the implementation of these systems or for interim systems that satisfy DoD requirements. [Ref. 19:p. 3]

The October 22, 1990 edition of Federal Computer Week reported that the Senate's 1991 Defense appropriations bill earmarked $1 billion for CIM out of the $9 billion proposed for DoD's ADP budget for FY 1991. This provided political support for the CIM initiative. The committee further charged the services and Defense agencies to submit all future information system requests or CIM-related projects through the CIM director for both approval and funding [Ref. 20:p. 1]. Out of the deductions in the services' budgets which fund CIM, the Army was the big loser with $500 million in reductions while the Navy and Air Force faced $200 million each. The House Appropriations Committee, however, did not share the Senate's endorsement of CIM [Ref. 20:p. 49]. The House wanted

to exercise a more conservative initial funding for CIM, and push for other ADP programs.

By November the Congress had approved the $1 billion for CIM but at a considerable cost to the services. They absorbed an across the board cut of 30 percent of their respective IRM budgets. Most of the cuts were destined for operations and maintenance of existing ADP systems [Ref. 21:p. 1]. With a $1 billion budget, CIM became a major force with which to reckon.

F. CIM SHIFTS DOD AGENCIES

By December 1990, the Secretary of Defense moved CIM from IRM to C^3I. This change broadened the scope of CIM to include all administrative information systems throughout DoD. Also, the SECDEF streamlined the chain of command by directing the new head of CIM to report directly to the SECDEF or his deputy. [Ref. 22:p. 1]

VI. ELEMENTS OF STRATEGIC INFORMATION SYSTEMS PLANNING

A. INTRODUCTION

An information system in any organization is a strategic resource which requires careful planning. Elements of this planning include: developing a vision, monitoring external influences, ensuring management support, obtaining a quality MIS staff, and developing a strong technological base. The information system reflects the structure of the organization and helps meet its business goals. The Department of Defense is unique in that it does not seek a competitive advantage as the foundation of its business aim, but it does have the responsibility to use tax dollars in the most efficient and effective manner. Yet, the DoD is a complex organization made up of diverse entities, each of which performs similar business functions in different manners. The goal of Corporate Information Management (CIM) is to standardize several business functions to reduce redundancy, and improve overall efficiency and quality. [Ref. 23:p. 616]

B. DEVELOPING A VISION

A vision is the direction an organization takes to reach its goals. It is the first step in developing a strategic plan. An organization develops a strategic information systems plan to take advantage of new information technologies, to gain a competitive advantage, as well as to

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support the strategic goals of the organization. The strategic IS plan must support the organization's business functions as well as have a defined vision of the organization's goals and the role of the information system in achieving those goals. However, a vision that reaches too far into the future, and does not include internal and external changes is unlikely to be attained. The information systems plan allows flexibility to absorb new technical or business opportunities. [Ref. 24:p. 263]

Through experience, managers are reluctant to grasp quick solutions and they have difficulties dedicating themselves to a succession of improvements in a long range information systems plan. As Emery points out:

> The remedy is to focus on the next steps rather than on the end result. A long-term goal is necessary to point the direction and establish a charter, but the payoff comes from a succession of cost-effective applications along the way. Short-term benefits make it much easier to justify the long-term effort. In the process, organizational learning takes place and the vision evolves. [Ref. 24:p. 265]

Designing a flexible system is necessary not only to meet short term milestones, but also to adapt to various changes within the organization or to technology. Although the initial design may address future changes in the system, many changes occur during the subsequent development process. [Ref. 24:p. 272]

C. STRATEGIC PLANNING INFLUENCES

Various issues affect the strategic information plan. These issues include changing technology, personnel shortages, limited resources, use of integrated systems and database management systems, and the information system plan's fit with the corporate plan.

The strategic information system plan must be sensitive to changing technology. This requires frequent meetings between technical staff, users, and management to achieve planning to meet requirements and corporate goals. Also important in the planning process is the use of integrated systems and database design. A requirement for modern information technology systems is an integrated data base which supports a variety of applications.

Personnel shortages also affect the strategic information plan because there is a present and future need for computer analysts, programmers and development personnel. This issue is particularly acute in the public sector where paucity of government funds restrict salaries and private industry can attract a significant number of personnel with the required information technology skills. [Ref. 12]

In any business, when monetary assets are limited, the importance of strategic information planning is paramount. Large expenditures take place in this area of the organization and a successful plan and subsequent implementation are critical. Another strategic issue which the organization

must address is how the information system fits with the corporate plan. The information technology strategy must integrate into the corporate plans and goals. It should not hinder or block the corporate plan. [Ref. 23:pp. 616-618]

D. MANAGEMENT SUPPORT

When information systems occupy a strategic resource within an organization it is imperative that top management support it. Information system planning should be integrated into senior management's plans and goals of the organization. Although the strategic information plan must be flexible, the size of the organization affects this flexibility. As Cash et al point out, "as organizations increase in both size and complexity and as IT applications grow larger and more complex, increasingly formal planning processes help to ensure the kind of broad-based dialogue essential to the development of an integrated vision of IT." [Ref. 23:p. 634] However, in organizations of rapid change and personnel turnover the organization loses its dedication to the information systems plan. In a more stable environment there is greater commitment to the strategic information systems plan. [Ref. 23:p. 628]

E. MIS STAFF

A key ingredient to any successful management information system (MIS) is an MIS staff which is capable of incorporating the organization's goals into a strategic information system. One of the most important roles in designing an information system is for the MIS staff to develop, identify and describe elements of the system [Ref. 24:p. 275]. These elements include:

- Hardware and system software

- Programming languages and development tools

- Application packages

- Data definitions

- Communications protocols

- Security

- Documentation

- Cost-benefit justification

- Installation procedures [Ref. 24:p. 275]

F. TECHNOLOGICAL BASE

A sound technological capability is vital for the success of an information system. First it is important to establish a technological base, and plan for changing technology by making periodic updates to the technological base [Ref. 24:p. 283]. Second, when choosing a technology, MIS planners should consider technologies which will be most valuable to the

organization instead of attempting to grasp unproven experimental technologies [Ref. 24:p. 285]. As Emery points out, "it is only after a technology has been well assimilated through one or more pilot projects that the firm should consider a large investment in a full-scale production version." [Ref. 24:p. 287]

G. BIG BROTHER COMPLEX

A perceived issue to lower and middle level managers is the "Big Brother" complex. When a large organization develops an integrated and comprehensive information system it gives upper level management access to information that was previously accessed by middle and lower level management. This access by upper level management may run the risk of developing a micromanagement or "Big Brother" corporate atmosphere. This "gives the organization an unprecedented degree of control." [Ref. 24:p. 267] Any problem is instantly available to top management via the information system. This may be a tool for management if the need for control is deemed important. However, it could stifle the authority and creativity of lower levels of management.

VII. PROBLEMS WITH CIM

A. INTRODUCTION

During our research and subsequent evaluation numerous issues and problems surfaced which may affect the final outcome of the CIM initiative. While not necessarily unique to IS planning, these issues are new to DoD because it had never before been tasked to implement such a large scale and aggressive IS strategy. These issues and problems fall into the categories of (1) Implementation of CIM into DoD, (2) CIM Strategic Planning and (3) ADP Transition from Status Quo to CIM Methodology. The three categories are appropriate because when CIM started there were problems with its implementation, its strategic planning, its transition from the current status of ADP in DoD to the final CIM product.

The following issues were identified as significant in the evaluation of the CIM initiative. These issues are comprehensive up to the date we finished our research in December 1990. They are not exhaustive because CIM is still evolving.

B. CIM STRATEGIC PLANNING

Compared to strategic planning in the private sector, CIM strategic planning has several weaknesses.

Attempting to devise a visionary, long term, comprehensive plan is possibly unrealistic considering DoD's poor track

record in designing and implementing massive, strategic IS projects. It has sometimes been effective, but sually has had gaps in the thought processes that developed the IS plan. [Ref. 17]

The functional work group effoᵢts require a stable and serene working environment. This conflicts with the dynamic climate of the CIM office caused by the strong external political influences. This dynamic environment has caused frequent changes in policies and procedures.

Issues of integration -- from strategic system integration to data structure compatibilities -- are arising that transcend the work of the separate functional work groups. Not only must the functional work groups integrate the needs of the various services and agencies but also data structures must be compatible across functional areas.

Another issue of integration and meshing of service and agency representatives is the differences within the functional groups. Some functional groups orient themselves toward a standard DoD set of requirements while others tend toward service or cultural specific domains due to the nature of the individual service requirements.

Leadership throughout CIM is tenuous because military officers and DoD-level political appointees have limited tenure, sometimes as short as 18 months. A further complication is the shortage of qualified and dedicated DoD ADP personnel.

Questions are raised when the data structures are integrated across functional boundaries and integrated into one giant database. With all data in one database, access to previously unavailable data would be possible. Some believe this will lead to micro-management, and consequently to a big brother atmosphere.

C. IMPLEMENTATION OF CIM INTO DOD

After the decision was made to use the CIM strategy, the big question was how CIM would be implemented into the DoD organization. The following questions and issues arose:

Is CIM a quick fix in which the services and agencies go through the motions of committing personnel to a project without true enthusiasm while waiting for the next federal administration to abandon CIM and revert back to parochial systems?

The July 9, 1990 Federal Computer Week editorial referred to the "self perpetuation" of the CIM effort. Critics consider this the genesis of "yet another" federal bureaucracy regardless of whether CIM is the answer to the DoD IRM problem. The historical Congressional answer to a problem like this is to keep pumping money in the direction of the problem (in this case, CIM) and it will go away. CIM requested $200 million for FY 1991 and Congress gave them one billion dollars! What will Congress do if CIM spends the money and has nothing to show for it? Will Congress pump more money or take the loss? Historically, Congress has a weak

record for terminating projects. The only major exception was the Army's DIVAD system (nickname; SGT York) where hundreds of millions of dollars were spent on this divisional air defense system before *DoD decided to terminate the program.* Congress continuously pumped money into the program despite major flaws in the system and questions concerning its ability to meet the current air threat. Both costs and problems mounted until finally, Congress pulled the financial plug. In the end, $1.8 billion had been spent. [Ref. 25]

Parochialism, divided loyalties and deficient commitment have emerged within the functional area work groups. Each service or DoD agency wants to defend its own systems and this makes it difficult to harness their enthusiasm toward the goal of a standardized and-integrated system [Ref. 17]. This issue is also influenced by a time factor which shows that the farther away is the planning horizon, the greater is the likelihood that parochialism will be set aside in order to work on a long range vision. Turf fighting arises when a planning horizon is short. [Ref. 17]

Senior CIM officials stated that external political influences are being brought to bear on the work of the functional work teams. Congressional micro-management in place of large budget support could influence CIM through the Executive Level Group (ELG). Service and agency influence on functional group members may lead to turf fighting within individual functional work groups. CIM officials are the

buffer against these external influences [Ref. 17]. They have isolated the functional work groups and are the liaison to any outside influence.

The CIM office decided that the ADP situation within DoD was so bad that there was no time to obtain the opinions of end users as to what was needed. It would take too long and most likely be inconclusive -- a waste of time. A "you'll do it our way, or else" implementation strategy was adopted. This strategy counters all theories about implementing change which hold that forced-change without involvement is doomed to failure.

The CIM office is tasked with streamlining only the DoD's non-tactical (administrative) information systems. A group of senior IRM officers are of the opinion that only one of the eight functional groups is truly "non-tactical." Are the eight functional areas non-tactical?

Some question whether the DoD can implement a 10-year visionary strategy in an organization that operates with five year plans, that are implemented by two year tour personnel and paid for with money that is appropriated one year at a time? The civilian federal IRM employees are underpaid, undertrained and just as transient as military personnel. How can a long term strategy be successful with these constraints? [Ref. 17]

The services in particular have long complained of IS manpower shortages and a lack of trained, experienced

personnel. When CIM was formed and each service and agency had to give up their best IS people to the functional groups, many wondered who was going to "mind the store". The Deputy Director for Navy IRM, (speaking specifically for the Navy but suggesting that his analysis applied throughout DoD) granted that the CIM concept is "right-on," makes sense, and is needed. However, the methodology for implementing it is not in tune with the current DoD manpower situation. He stated that since DoD's manpower pool was already deficient, that CIM should consider implementing one functional area first rather than try all eight at once. His reasoning was: (1) It would reduce the manpower drain on the services and agencies. (2) It would allow services to maintain their current IRM systems until it is known that CIM will work. (3) The first functional group would be the "test group" for all groups to follow. The first functional area implementation would either prove or disprove the CIM concept. If it disproves the concept, millions of dollars and man years will be saved, and possibly another avenue to pursue would come to light. If the concept was proven viable, then the lessons learned from implementing one functional area will enable the others to be implemented more effectively [Ref. 26]. The Deputy Director of Navy IRM stressed that should the implementation of the first functional area be successful, it should be advertised as a precursor of what was to come. This would strengthen the support for CIM-originated systems. His opinion was that

support for the CIM concept existed; the idea was sound and people admit that something needed to be done. IRM people were shell-shocked at the scope of the effort and the time frame in which it was to be implemented. No one appreciates having a new system "ram-rodded" down their throats. It goes against all computer system and management theories for implementing new systems. [Ref. 26]

D. ADP TRANSITION FROM STATUS QUO TO CIM METHODOLOGY

As CIM becomes a force within DoD, how will it handle the ADP transition from current systems and policies to the final CIM product.

While CIM is focused on unification and standardization, another office under the Deputy Comptroller for IRM is focused on immediately reducing Defense spending by consolidating DoD information technology resources as they exist. Their efforts add further uncertainty to the working climate of the functional work groups. While the work groups are trying to standardize and unify systems, these resources are disappearing as they discuss them. Indeed, some of the working group members have faced RIFs of their regular jobs initiated by the consolidation office. Ultimately, there are two groups within DoD IRM working against each other [Ref. 17].

A senior CIM official believes the inter-service rivalry issue has been practically nullified because of the fait accompli approach used to start the CIM process. In a June

25, 1990 interview, she stated that this approach swept aside the arguments, justifications and politicking by the agencies being forced into IS standardization. One questions whether this was an appropriate implementation method. The approach may have created a distrust of the CIM strategy. The forced approach of CIM implementation may in fact feed the interservice rivalry issue. [Ref. 17]

Questions remain about what happens when a system, such as IDAFIPS, which has cost hundreds of millions of dollars is scratched. Such large-scale systems were developed to replace antiquated ADP systems. Options are to either throw these systems out for the CIM initiative, or to have the services struggle with 1960's and 1970's technology during the 1990's.

When the eight functional area IS strategies are unveiled, they may be eight to ten years from implementation. In the interim, three schools of thought have emerged:

The first approach is to do nothing. DoD has a pitiful record of installing cross-service, large-scale unified systems. WMCCS (Worldwide Military Command and Control System) Information Management and Air Force Advanced Logistical Support are offered as examples of failed systems. Besides, all of the services and agencies, individually, are just about to bring on line new information systems that will provide the very productivity about which Congress is so concerned. By waiting just another year or so the problem is likely to be solved in any event. To head off the feared

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impact of CIM strategies on their own IS turf, the services are cooperating on some systems and offering this cooperation as evidence of their good intentions. Thereby do they hope to head off CIM strategy and preserve the systems for which they do not want to submit to DoD level standardization. The services recently adopted the Air Force system for the automated development of technical manuals. They called it JUSTIS (Joint Unformed Services Technical Information System). They also called it a "CIM initiative," presenting it as an implementation of CIM strategy (which, of course, is still in development). The CIM office disowned the effort. [Ref. 27]

The DOD is comfortable with its present power distribution. Services retain control over IS that fits their unique requirements. System complexity defies simple analysis by the CIM working groups. Unrealized, unappreciated, unforseen interdependencies in IS systems will be over looked. Centralized large systems will stifle innovative efforts by decentralized small groups that are essentially in competition for resources. There are numerous ADP systems about to come on line. CIM will kill all of that in the name of a distant future ideal. If the Soviets turn nasty again, we have a proven IS support system infrastructure in place. This is not the time to upset the whole system while we are trying to figure if Gorbachev will last and perestroika is for real. Bad as the DoD is alleged to be, the fact is that it is no worse than any other organization. At decentralized

facilities, technical and functional people work closely together. Under a centralized approach, they are likely to be driven apart to the detriment of their creativity and innovativeness in the development of systems. [Ref. 27]

The disadvantage of doing nothing is that it does not work now and DOD should do something. [Ref. 17]

The second approach is to devise interim information plans and systems to support each functional area as it makes the transition from the status quo to the fulfillment of the ultimate strategic system. This interim solution could act as a prototype of the final system. It would also provide for the immediate needs of services and agencies instead of waiting for the ultimate system. It would also keep contractors interested in DoD programs so they could participate with CIM later. It may provide for a cultural transition to the ultimate plan. The interim also provides the opportunity for end users to critique this system for input to the ultimate plan. And the interim solution may become the final system.

One disadvantage is if the interim solution is adopted it would be an expedient solution instead of a thorough one. However, the interim solution may be so powerful and well accepted that there may be no chance for the final CIM product. [Ref. 17]

The third approach is to either immediately implement the final, visionary system or maintain the existing systems until

the ultimate systems can be put in place. Going to an ultimate, strategic vision will enable sound, prudent and efficient investment of DOD IT resources. Taking the long strategic view develops the possibility of a strategic advantage from IS. A strategic view communicates to industrial contractors and to our allies that we know where we are going. This fosters a willingness on the part of contractors to risk an investment in a stable plan. Beware of interim systems for they will, by default and parochial interests, be deficient but minimally acceptable systems that will become entrenched as permanent systems. Visions of unified, standardized DoD information resources will never be realized if the interim systems get a foot in the door. A strategic plan in place allows organizations to relate their IS budget requests to Congressionally endorsed plans. A strategic plan compels allocation of dollars in a way that supports the plan instead of only piecemeal parts. The implementation of a strategic vision communicates that this organization has a measure of competence in the realm of IS. A strategic vision allows an organization to resist transient influences. Without a strategic plan the DoD will not get money from Congress for IS because they communicate that they do not know where they are going in IS. DOD managers can contribute good ideas rather than being in the mode of constantly and exhaustively reacting to transient events and influences.

However, a disadvantage is that past attempts at grand visions have failed. We have no DoD track record of implementing IS visions or even of formulating them. The implementation of an ultimate vision will take a long time. The very length of the time it will take for the working groups to develop ultimate visions (18 months to 2 years) means a group of experts working in isolation from their organizations. They will be developing an ideal system while being out of touch with new developments in their fields. The average 18 month tenure of military officers and political appointees means that the ultimate vision will lose steam and support with a change in administration or the normal turnover of leaders in the DoD system. When you try to implement a total system across the services, the implementation of that system will be a function of the implementation by the slowest user. Savings from an ultimate system are far in the future; there are no immediate, visible quick-hitter results. DoD is an organization that prizes quick hitters. DoD is functionally oriented in structure. It is inherently vertical. That is the structure that supports command. It does not support horizontal, corporate approaches to IS. [Ref. 17]

VIII. TENTATIVE CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

This CIM case study is unique in that it gave us a rare opportunity to observe in a real-time manner the genesis of a DoD strategic level decision and its subsequent planning process. We met with key personnel involved with developing and implementing the CIM strategy. Through the case study we attempted to capture the atmosphere and conditions that prevailed before and during the CIM initiative.

Throughout our research we became more and more convinced that the CIM initiative was ripe with issues of strategic level information planning. With case methodology making a comeback as a viable teaching tool at the Naval Postgraduate School, and the lack of any current DoD strategic level decision making case studies, we felt this case would help fill the current void.

From the very beginning and still today, the basic concept of CIM is sound: CIM promised to cut DoD ADP expenditures by centralizing the ADP decision making process, and to standardize ADP systems throughout the DoD. For the first time all ADP programs filtered through one office (CIM) for approval. The idea was to ensure no duplication of systems and therefore realize a cost savings. CIM also promised to standardize administrative business functions throughout the

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Department of Defense. Cost savings would be realized in many ways. Eliminating duplicative systems will by its very nature mean a reduction in maintenance, data entry and personnel. For those ADP systems that are developed and approved by CIM, the standardization that CIM requires will save money through reduced maintenance of ADP systems, more effective training, and more efficient use of personnel. The standardization will result in a standard languages, data structures, data architectures and compatible communication protocols. This will result in a dramatic reduction in maintenance costs and a streamlined information system. Training will be reduced due to the elimination of redundant and incompatible systems. Using fewer languages and centralized ADP facilities will result in requiring fewer personnel to operate and maintain the ADP systems.

Although the basic CIM concept makes sense and is needed, the implementation of CIM into DoD was forced and not fully thought out. From the beginning, the methodology to implement CIM was a top down approach. No effort was made to gather the opinions of lower and middle level managers as to how to implement the CIM strategy. This 10-year visionary strategy is contrary to accepted IS strategic planning principles which stipulate a 3 to 5 year time frame. Planning beyond 3 to 5 years may cause lower level management to lose confidence in the commitment to the project [Ref. 24:p. 265]. Furthermore, CIM came up with eight functional work areas without

consulting the various services and agencies as to whether or not they defined them as administrative or tactical. For example, Marines consider logistics as a tactical function whereas the Air Force considers logistics an administrative function.

Additionally, CIM did not follow the basic principles of strategic IS planning. Strategic planning relies on a stable working environment. The functional work groups who create the strategic information system plan contended with external influences, competing agencies (consolidation vs. standardization), and moving to another agency within DoD. This is not a stable working environment. Strategic planning also depends on developing a technological base. This includes developing a prototype before committing to a full investment of resources. DoD lacks this technological base and intends on developing all functional strategies at the same time.

And finally, CIM is not adequately prepared for the transition from the current ADP environment to the future CIM way of doing business. CIM has not adequately considered the consequences of canceling major IS projects that have been under development for 8-10 years. Additionally, CIM will not have a system on line for at least 10 years. This will create a gap of 20 years or more without any new information systems to deal with current demands.

B. RECOMMENDATIONS

Our recommendations are based on the fact that CIM is a viable and well funded "agency" within the DoD. To ensure the successful implementation of the CIM initiative, we recommend the following:

- Bring to the attention of the CIM office the weaknesses outlined in the conclusions above.

- To ensure organizational stability, CIM should remain in the C^3I agency.

- Continue to use CIM as the authority of approval for all major ADP systems within DoD to maintain centralized ADP decision making.

- Chose one and only one administrative functional area and implement it with the CIM initiative.

- Continue to fund all major ADP systems currently under development until the success of one CIM functional area is proven.

- If CIM is successful, compile lessons learned and apply that knowledge to other functional areas.

APPENDIX A

CIM METHODOLOGY PHASES

This chart shows the three distinct phases of the CIM methodology.

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PHASE I: THE FUNCTIONAL VISION

1.1 MISSION AND SCOPE

1.2 POLICY AND GUIDING PRINCIPLES

1.3 VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

2.1 SITUATION ANALYSIS (FUNCTIONAL BASELINE)

2.2 GOALS

2.3 OBJECTIVES

2.4 STRATEGY

2.5 FUTURE FUNCTIONAL CONCEPT

2.6 FUTURE OPERATIONAL CONCEPT

2.7 FUNCTIONAL INFORMATION MODEL

2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL RQMT)

PHASE III: THE INFORMATION SYSTEMS STRATEGY

3.1 PROCESS MODEL

3.2 DATA MODEL

3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

3.5 INFORMATION SYSTEMS ANALYSIS

3.6 IMPLEMENTATION STRATEGY (PROGRAM CONCEPT)

DESIGN AND IMPLEMENTATION

NOTE: ──────▶ Indicates Sequence of Steps

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APPENDIX B

DOD ORGANIZATION

This organization chart shows the placement of the CIM
office within the DoD heirarchy.

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┌─────────────────────────────────┐
│       Secretary of Defense      │
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                 │
┌─────────────────────────────────┐
│   Deputy Secretary of Defense   │
└─────────────────────────────────┘
                 │
┌─────────────────────────────────┐
│         DoD Comptroller         │
└─────────────────────────────────┘
                 │
┌─────────────────────────────────┐
│  Principal Deputy Comptroller   │
└─────────────────────────────────┘
                 │
┌─────────────────────────────────┐
│  DoD Deputy Comptroller (IRM)   │
└─────────────────────────────────┘
                 │
┌─────────────────────────────────┐
│         Director of CIM         │
└─────────────────────────────────┘
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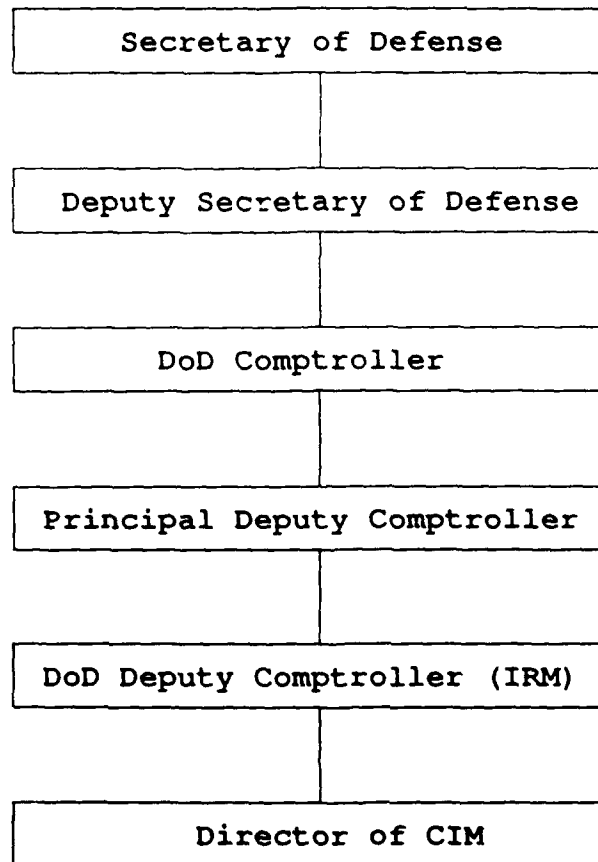
APPENDIX C

CIM FUNCTIONAL GROUP COMPOSITIONS

This table shows the composition of the CIM functional groups, catagorized by source service and agency.

COMPOSITION OF CIM (CORE) FUNCTIONAL GROUP

	CIVILIAN PAYROLL	DISTRIBUTION CENTERS	FINANCIAL OPERATIONS	CIVILIAN PERSONNEL	MEDICAL SERVICES	GOVERNMENT FURNISHED MATERIALS	MATERIAL MANAGEMENT	CONTRACT PAYMENTS	TOTAL
OSD (Func'l)	3	2	4	2	1	1	1	2	16
OSD (CIM)	1	1	1	1	1	1	2	1	9
OASD			1	7					8
ARMY	3	4	7	4	8	1	8	3	36
NAVY	3	2	8	6	7	1	5	2	34
AIR FORCE	3	3	8	6	6	1	5	3	35
MARINE		1	1	1			2	1	6
JCS					1				1
DLA	3	3	5	5		1	10	5	32
DMA			1						1
WHS			1	1					2
FACILITIES	1	1	1	1	1	1	1	1	8
ADMIN	1		2	1	1		2	1	8
TOTAL (Permanent Members)	18	17	38	30	33	7	36	19	198

APPENDIX D

SUMMARY OF SERVICE REDUCTIONS

This table is a summary of service reductions from the
DoD ADP budget which supports CIM funding.

(TOA, Dollars in millions)

Service/Agency	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Army	-.5	-100.0	-200.0	-300.0	-306.0	-312.0
Navy	-.5	-100.0	-200.0	-300.0	-306.0	-312.0
Air Force	...5	-100.0	-200.0	-300.0	-306.0	-312.0
Defense Agencies	-.2	- 15.0	- 31.0	- 31.0	- 31.0	- 32.0
Total	-1.7	-315.0	-631.0	-931.0	-949.0	-968.0
CIM	+1.7	+50.0	+220.0	+320.0	+323.0	+329.0

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APPENDIX E

DEFENSE MANAGEMENT REPORT

This document is the Defense Management Report to the President from the Secretary of Defense, Mr. Dick Cheney.

DEFENSE MANAGEMENT REPORT

DEFENSE MANAGEMENT

Report to the President

by
Secretary of Defense
Dick Cheney

July 1989

Defense Management

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June 12, 1989

The President
The White House
Washington, D.C. 20500

Dear Mr. President:

I am pleased to submit the Report of the Defense Management Review conducted pursuant to your direction in National Security Review 11. This Report is the product of extensive study and sets forth the plan you requested to:

-- implement fully the Packard Commission's recommendations;

-- improve substantially the performance of the defense acquisition system; and

-- manage more effectively the Department of Defense and our defense resources.

With your approval, the Department is prepared to embark immediately on the implementing actions identified in the Report. Some of these actions will require the assistance of other executive branch agencies. The most important will require the cooperation of the Congress. All will demand the Department's sustained attention and diligent effort in the years ahead.

Sincerely,

DEFENSE MANAGEMENT

I. INTRODUCTION

In his February 1989 address to the Joint Session of Congress, the President announced that he was directing the Secretary of Defense to develop "a plan to improve the defense procurement process and management of the Pentagon." Terms of reference provided by the President called upon the Department of Defense (DoD) to:

> develop a plan to accomplish full implementation of the recommendations of the Packard Commission and to realize substantial improvements ... in defense management overall.

For these purposes, the President directed that specific actions be identified in four broad areas—personnel and organization, defense planning, acquisition practices and procedures, and government-industry accountability. The President also called for recommended "actions the Congress could take which would contribute to the more effective operation and management" of DoD.

The Defense Management Review has examined the various efforts made to date to realize the far-reaching improvements envisioned both by the Packard Commission in its Reports and by Congress in the Goldwater-Nichols Defense Reorganization Act of 1986. It has benefitted from the information provided and views offered by senior civilian and military officials throughout DoD, as well as the valuable insights of numerous outside organizations and experts who have monitored the course of recent defense reforms.

While some progress unquestionably has been made since 1986, there is no basis for complacency. On the contrary, redoubled efforts will be required in order to realize improvement to the degree contemplated by the Packard Commission and the Goldwater-Nichols Act. But the progress to date does give cause for hope that the necessary consensus and commitment can be sustained in the coming years. This will be essential if the U.S. defense effort is to be managed in a manner that:

- ensures the continued strength and readiness of the nation's Armed Forces;
- helps us acquire needed new weapon systems at less cost, in less time, and with greater assurance of promised performance;
- encourages industry and government alike to meet the highest standards of integrity and performance;
- and promotes greater public confidence in our stewardship of defense resources.

The dimension and importance of the task cannot be overstated. The course of international affairs in the years ahead promises to test U.S. leadership in new

and unforeseeable ways. Potential threats to the security of the U.S. and its
Allies are likely to diminish in some areas while increasing in others. may well
take new and more subtle forms, and undoubtedly will necessitate U.S. military
forces that are modern, ready, and sustainable in a variety of contingencies. At
the same time, as a result of competing national priorities, the real resources
available for defense in the early 1990s are likely to be less than in recent years.
If we are to continue to protect our global interests. meet our responsibilities,
and minimize the risks to our security, we must preserve essential military
capabilities through *ever more* skillfull use of the resources at our disposal.

Such circumstances compel the utmost attention to prudent management of our
defense program--and oblige the Executive branch, Congress and industry, as
seldom before, to join in husbanding available defense dollars, cutting unneces-
sary costs, and achieving new levels of productivity and quality.

Building on recent efforts, in light of experience and current circumstances, this
Report is intended to articulate an overall approach for achieving these impor-
tant objectives and to identify a series of specific management initiatives for the
President's consideration. Many of these initiatives can be undertaken on the
authority of the Secretary of Defense. Some will require concerted action by
the Administration, including other Executive departments and agencies. Still
others -- among them actions that hold the greatest promise for long-term
improvement -- will require the support of Congress and the defense industry.
Together, these initiatives respond to the findings and conclusions of the
Packard Commission and to the provisions of the Goldwater-Nichols Act, and
speak to their as-yet-uncompleted agenda for constructive change.

None of the additional steps recommended by the Defense Management Review
departs from the course already charted for DoD, but likewise none represents a
quick fix. The harder part of the job remains to be done -- and the larger
improvements are yet to be realized. Nothing less than an unreserved and
long-term commitment on the part of DoD will be necessary to meet the
President's objectives. Nothing less than sustained cooperation between the
Administration and Congress, and between government and industry, will suffice
for that purpose.

II.   MANAGEMENT FRAMEWORK

The overall framework adopted for decisionmaking within DoD must reflect
sound management principles if the President and Secretary of Defense are to be
well served. The management framework that follows has been guided by several
fundamental principles:

- The individual responsibilities of senior managers must be well understood.

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- Managers must be given a range of authority commensurate with their responsibility.
- Subject to final decision by the President, the Secretary, or the Deputy Secretary, managers' participation in the process of establishing central policies should be encouraged.
- Approved policy, including longer-term priorities and objectives for the defense program, must be widely and clearly communicated within DoD.
- Within this context, managers must expect to be held strictly accountable for the overall results of their efforts, for adhering to approved policy, and for executing decisions.
- The full talents, dedication, experience and judgment of all DoD employees must be brought to bear in the execution of their diverse missions. Policy must be implemented in a wide variety of settings, and the process by which this is done must be carefully monitored in order to take full advantage of opportunities for cost savings and quality improvement. Innovation will come most naturally from the military and civilian professionals entrusted to do the job. They must be encouraged to examine and improve continuously the processes in which they are engaged -- and to raise, at all levels, new ideas and approaches that will contribute to a sound, affordable program to maintain adequate U.S. military strength.

The current broad division of responsibilities among the Office of the Secretary of Defense (OSD), the Office of the Chairman of the Joint Chiefs of Staff (CJCS), the Unified and Specified Commands, the Military Departments, and the Defense Agencies provides a generally sound structure within which to implement these principles. The essential challenge is one of integrating their respective efforts more effectively. This will depend heavily upon certain key senior officials, some aspects of whose responsibilities bear emphasizing.

The Deputy Secretary of Defense will assist the Secretary in overall leadership of DoD and exercise authority delegated by the Secretary on all matters in which the Secretary is authorized to act. He will be responsible for day-to-day management of DoD and operation of a more rigorous Planning, Programming, and Budgeting System (PPBS) designed to produce a coherent, integrated, and efficient defense program. He will have day-to-day responsibility, with the Secretary, for ensuring the full implementation of approved actions under the Defense Management Review.

The Under Secretary of Defense for Acquisition (USD/A) will exercise the authority intended by the Packard Commission and provided in law. Under the direction of the Secretary and Deputy Secretary, the USD/A will be responsible for policy, administration, oversight and supervision regarding acquisition matters DoD-wide. In this regard, the USD/A's authority will extend to directing the Secretaries of the Military Departments on the manner in which acquisition responsibilities are executed by their Departments. The USD/A will

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DEFENSE MANAGEMENT

have the full confidence and active support of the Secretary and Deputy Secretary as their principal staff assistant on such matters, including implementation of numerous initiatives stemming from the Defense Management Review. The USD/A's role within DoD will be enhanced in certain respects, among them the following: the USD/A will be a key participant in all phases of the PPBS, including deliberations on major budget issues; and will administer the Selected Acquisition Reports (SARs) and other Congressional reporting on acquisition programs and issues.

The Secretaries of the Military Departments, under the Secretary's and Deputy Secretary's direction, will be responsible for managing the affairs of their Departments as provided in law, including front-line implementation of many of the initiatives identified in the Management Review as well as other policy, program and budget decisions. As key advisers to the Secretary and Deputy Secretary, they will provide candid personal views as well as convey the institutional perspective of their Departments. Collectively, they will be charged with helping to coordinate the activities of the Military Departments in the interest of more efficient management of the overall defense program.

The Under Secretary of Defense for Policy (USD/P), among his other responsibilities, will support and represent DoD, as directed by the Secretary and Deputy Secretary, on foreign relations and arms control matters. In addition, the USD/P will serve as the Deputy Secretary's primary advisor for the planning phase of the PPBS, and as a key participant in programming and budgeting decisions as well. In accordance with the Goldwater-Nichols Act, and in order to strengthen the ties between national policy and plans, the USD/P and a select element of his staff will assist the Secretary and Deputy Secretary in developing guidance for, and in reviewing, operational and contingency plans for nuclear and conventional forces.

The Chairman of the Joint Chiefs of Staff (CJCS) was vested by the Goldwater-Nichols Act with critically important responsibilities for planning, advising, and policy formulation. In keeping with his functions as principal military advisor to the President and the Secretary of Defense, and as spokesman for the Joint Chiefs of Staff (JCS) and the Commanders-in-Chief of the Unified and Specified Commands (CINCs), the CJCS will advise the Secretary and Deputy Secretary on the full range of issues and participate in senior councils within DoD.

The foregoing descriptions are not exhaustive, but rather intended to highlight important roles that the Deputy Secretary, USD/A, Secretaries of the Military Departments, USD/P, and CJCS will play as core managers within DoD. Sound working relationships and regular communications among these and other senior officials are indispensable to managing DoD successfully; to ensuring that it responds to the President's and Secretary's priorities; to assisting the Secretary and Deputy Secretary as they are called upon to make major policy, program and

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budget decisions; and to guaranteeing prompt and effective execution of those decisions. For these purposes, DoD will rely on several major intradepartmental groups whose broad responsibilities and functions are described below.

DoD Executive Committee. Under the Secretary as chairman, the Deputy Secretary, USD/A, Secretaries of the Military Departments, USD/P, and CJCS will comprise the membership of a new Executive Committee. The Executive Committee will meet regularly and serve as the key, senior deliberative and decisionmaking body within DoD for all major defense issues. In order to promote the candor and confidentiality of the Executive Committee's deliberations on the most important and difficult issues, the Executive Committee's membership will be strictly limited. The DoD General Counsel will attend meetings of the Executive Committee as a legal advisor and observer. The participation of other DoD officials will be subject to the Secretary's approval, on a case-by-case basis. The Executive Committee will assume continuing responsibility for, among other things, reviewing and expediting the implementation of measures approved by the President as a result of the Defense Management Review. The Special Assistant to the Secretary and Deputy Secretary will serve as Executive Secretary of the Executive Committee.

Defense Planning and Resources Board. The Deputy Secretary will manage a revitalized Planning, Programming and Budgeting System (PPBS) as chairman of a Defense Planning and Resources Board (DPRB). The DPRB will replace the current Defense Resources Board. The DPRB will have the following permanent members: CJCS, USD/A, the Secretaries of the Military Departments, USD/P, the Assistant Secretary of Defense (Program Analysis and Evaluation), and the DoD Comptroller. As matters on the agenda of the DPRB dictate, other senior military and civilian officials will be called upon to participate in its deliberations --including, as appropriate, the Service Chiefs, CINCs, and representatives of other OSD offices. Representatives of the Director of the Office of Management and Budget and the Assistant to the President for National Security Affairs will participate in the DPRB on a regular basis. The Deputy Secretary will appoint a single individual from within his office as the Executive Secretary of the DPRB. Through the DPRB, the Deputy Secretary will help to develop stronger links between our national policies and the resources allocated to specific programs and forces.

Planning Process. Responding to the Packard Commission's recommendations and the mandate of the Goldwater-Nichols Act will require substantial improvements in the threshold or planning phase of the PPBS. Under the pressures of the annual budget cycle, consideration of broad policies and development of guidance on high-priority objectives all too often has been neglected, and decisions made instead on a short-term, issue-by-issue basis not well-suited to optimizing the use of available defense resources. As a result, DoD's principal planning product, the Defense Guidance, now represents at best an early,

negotiated settlement on the content of the Service and Defense Agency programs.

Redressing this situation will require a major effort by the DPRB, including continued development of a biennial budget process consistent with the Packard Commission's recommendations, in order to achieve better long-range planning and greater stability in the defense program.

In the spring of the year prior to DoD's program and budget reviews, the Secretary, on the advice of the DPRB, will issue guidance on a limited number of planning topics to be considered and resolved. In addition, the Secretary may wish to issue alternative planning scenarios to be considered. The DPRB, or a select group of its members designated by the Deputy Secretary, will meet through the spring and summer to develop recommendations on these issues for consideration by the Secretary before August 1, and for subsequent communication to the Military Departments and Defense Agencies.

The USD/P will include these and other issues as specific planning guidance in the restructured Defense Planning Guidance (DPG), which the Secretary will formally issue by October 1 in the year preceding the programming phase. In addition to the planning issues provided by the Secretary and military strategy provided by the CJCS, the DPG will contain:

* a dramatically shortened and more concise section on forces, incorporating only a limited set of high-priority "Program Planning Objectives" that will be mandatory guidance to the Services and Defense Agencies;
* broad identification of the projected impact of these objectives on future funding;
* and a rough, 20-year "road map" of the modernization needs and investment plans of DoD, projecting the impact of the Program Planning Objectives, and of additional modernization or replacement of major systems (e.g., ships, aircraft, tanks and satellites) expected by the Military Departments and Defense Agencies, against realistic levels of future funding.

Defense Acquisition Board. The USD/A and the Vice Chairman of the JCS (VCJCS), as chairman and vice-chairman respectively, will direct the efforts of a streamlined Defense Acquisition Board (DAB). The DAB's permanent membership will be reduced, as will its committee and ad hoc working structures. The USD/A will expedite the implementation of decisions following DAB deliberations.

The DAB will rigorously oversee major systems acquisition, to ensure that the acquisition process is managed in a manner consistent with DoD policy. That policy will define minimum required accomplishments, and permit additional

program-specific exit criteria to be established by the USD/A. at each Milestone in a system's life. The paramount objective of the USD/A will be to *discipline* the acquisition system through review of major programs by the DAB. This review will be calculated to ensure that every program is ready to go into more advanced stages of development or production prior to receiving Milestone approval. and that the plans laid for such stages are consistent with sound acquisition management.

In order to forge strong links between the DPRB and the DAB. the USD/A will serve as a key advisor to the Secretary and Deputy Secretary on resource decisions affecting acquisition program baselines, including the cost, schedule and performance of all major systems.

By August 1, 1989. the USD/A and DoD Comptroller will submit their recommendations to the Deputy Secretary concerning the assumption by the DAB of responsibility for major automated data processing systems acquisition currently exercised by the Major Automated Information System Review Council (MAISRC).

Joint Requirements Oversight Council. To assist the USD/A and the DAB, the Joint Requirements Oversight Council, chaired by the VCJCS, will assume a broader role in the threshold articulation of military needs and the validation of performance goals and baselines for all DAB programs at their successive Milestones. (This expanded role is more fully described below, in the Defense Acquisition section of this Report.)

Coordinating Committees. In addition, three Assistant Secretary-level Committees will be established to improve internal coordination on arms control, technology transfer, and conventional force readiness and related issues. The arms control committee will be chaired by the Assistant Secretary of Defense (International Security Policy). Representatives of the USD/P and USD/A will serve as chairman and vice-chairman, respectively, of the technology transfer committee. These committees will report to the Deputy Secretary through the USD/P. The conventional force readiness committee will be chaired by t. e Assistant Secretary of Defense (Force Management and Personnel), and will report to the Deputy Secretary. In each case, committee membership will include representatives, as appropriate. cf other OSD offices, the CJCS, and the Military Departments.

III. DEFENSE ACQUISITION

The terms of reference provided by the President for the Defense Management Review focused principally on the defense acquisition system. Major challenges remain to be addressed if DoD is to implement fully the Packard Commission's

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recommendations in this area, including the various organizational arrangements, personnel improvements, and revised practices and procedures projected by the Commission to reduce the cost and improve the performance of new weapon systems. Efforts to date have not produced the tangible results envisioned by the Commission. This is indicative of the dimension of the problems the Commission identified, the far-reaching solutions it offered, and the persistence required if DoD's management of major acquisition programs is to emulate the characteristics of the most successful commercial and government projects. Among these characteristics, described in the Commission's reports, were:

- **Clear Command Channels**--the clear alignment of responsibility and author-ity, preserved and promoted through short, unambiguous chains of command to the most senior decisionmakers;
- **Program Stability**--a stable environment of funding and management, predicated on an agreed baseline for cost, schedule, and performance;
- **Limited Reporting Requirements**--adherence to the principle of "manage-ment by exception," and methods of ensuring accountability that focus on deviations from the agreed baseline;
- **Small, High Quality Staffs**--reliance on small staffs of specially trained and highly motivated personnel;
- **Communications with Users**--sound understanding of user needs achieved early-on and reflecting a proper balance among cost, schedule, and perfor-mance considerations;
- **Better System Development**--including aggressive use of prototyping and testing to identify and remedy problems well before production, invest-ment in a strong technology base that emphasizes lower-cost approaches to building capable weapon systems, greater reliance on commercial products, and increased use of commercial-style competition.

When considered in this framework, it is apparent that the Packard Commis-sion's recommendations intended to make more fundamental changes in the defense acquisition system than have yet been accomplished. Additional actions are required--including steps that substantially depart from or go well beyond DoD's and Congress' efforts to date.

Clear Command Channels

Positioning the USD/A as DoD's senior, full-time acquisition executive, with the variety of important functions already described, was but one part of the Commission's approach to acquisition management. No less central to its conception was the establishment of clear, abbreviated lines of authority within the Services for performance of their traditional role in managing major programs. In each of the Military Departments, management responsibilities were to flow through an experienced, full-time Service Acquisition Executive (SAE), administering Service programs within policy guidance from the USD/A; through Program Executive Officers (PEOs), as key middle managers responsible

to the SAEs for defined and limited groups of major programs: to individual Program Managers (PMs), vested with broad responsibility for and commensurate authority over major programs, and reporting for these purposes exclusively to their respective PEOs. The intent was to confine management accountability within this greatly streamlined chain of command, which was intended to capture *all* cost, schedule and performance features of all major programs.

The Military Departments have taken different approaches to implementing the Commission's concept, and have had varying degrees of success. None has fully met the Commission's purposes, and a careful review of their efforts to date indicates a need for revising their acquisition organizations in several respects.

- **Service Acquisition Executives.** A single civilian official, at the Assistant Secretary-level within each Military Department, will be designated the SAE. The SAE will have full-time responsibility for all Service acquisition functions. These functions will be conducted within Service Secretariats in a manner that ensures effective civilian control, and will not be duplicated in Service Chiefs' organizations.
- **Program Executive Officers.** Within each Military Department, the SAE will manage all major acquisition programs through PEOs, each of whom will have a small, separate staff organization and devote full-time attention to management of assigned programs and related technical support resources. PEOs will be relieved of other responsibilities.
- **Program Managers.** On all matters of program cost, schedule and performance, PMs will report only to their respective PEO or SAE.
- **Systems and Materiel Commands.** Consistent with this structure, these Service commands will be organized with a primary focus on three roles: providing necessary logistical support; to the extent appropriate, managing programs other than those conducted under the PEO structure; and providing a variety of support services to PEOs and PMs, while duplicating none of their management functions. The Secretaries of the Military Departments and SAEs will be charged with ensuring that Service commands perform these various roles in a fully accountable manner.

The Secretaries of the Military Departments and Service Chiefs will ensure maximum accountability within the PEO structure. PEOs will be selected by the Secretaries of the Military Departments, with the advice of SAEs who will have primary responsibility for evaluating PEOs' job performance. Similarly, SAEs and PEOs will advise on the selection of PMs and evaluate them. In addition, funding and personnel authorizations for PEO offices, and those of the PMs reporting to them, will be administered separately from Service commands.

Secretaries of the Military Departments will submit detailed plans for implementing these changes for the Secretary's consideration by October 1, 1989.

This approach promises to streamline and strengthen the management of major systems acquisition within the Military Departments. It has important consequences at several levels. It tends to fix responsibility and define authority more clearly , and thus sharpen accountability. It should help relieve PMs of requirements for repetitive reviews by and reports to Service command layers. It will vest PEOs with a more active management role -- one performed separately from such commands and hence less susceptible to being defined by the bureaucratic dynamics of those large organizations.

This approach also highlights collateral aspects of the Commission's recommendations -- notably those that relate to the elimination of duplicative or unnecessary functions and management layers and to the achievement of substantial reductions in overall staffing. In this connection, the Packard Commission clearly anticipated that implementation of its recommendations within the Services would occasion a broader streamlining of headquarters and management organizations, and more substantial personnel reductions than have yet been accomplished. As discussed below, the Secretary of Defense will direct the Secretaries of the Military Departments to implement this management chain of command with these larger purposes in mind. Streamlining of substantial magnitude is anticipated as a result of this effort by each Military Department.

Stability in Programs
The Packard Commission properly emphasized the important economies that flow from conducting major systems acquisition in an environment of stable funding and management. Reliable planning, funding, and system configuration, and continuity in management personnel, greatly increase the likelihood that systems will be delivered on time and at projected cost. Reaching and adhering to baseline agreement on factors critical to a program's success, contracting for procurements over two or more years, and maintaining economical rates of production--these and other techniques have been proven to yield substantial savings over the life of a system.

The expected budget environment will make it more difficult, but altogether more important, that DoD avail itself of these means to stretch its modernization resources. For this reason, the Deputy Secretary and the Secretaries of the Military Departments will ensure that the USD/A and the SAEs are more active participants in the program and budget cycles at both DoD and Service levels. These senior acquisition officials will serve as key advisors on resource decisions affecting the baselines of major acquisition programs, and on alternatives that may mitigate the impact of such actions.

To take greater advantage of potential savings through multiyear contracting will require a change in current law, which limits eligible procurements to those in which DoD can achieve demonstrated savings of 10 percent or more. This has

the anomalous result of excluding from multiyear consideration major procure-ments for which projected savings may be substantial in dollar terms even if marginally less than 10 percent of the contract cost. The Administration should seek to eliminate or reduce this threshold, in order to permit case-by-case evaluation of opportunities for cost savings through multiyear procurement. (See Appendix B to this Report.)

The Secretaries of the Military Departments and SAEs will promote continuity in the management of major programs. They will ensure that successful PMs enjoy a sustained tenure, ideally to direct their programs through an entire Milestone phase or for the four-year period set by statute. They will provide for an orderly transfer of responsibilities between PMs, and ensure that successful PEOs enjoy tenure of comparable duration.

Limited Reporting Requirements
Numerous reviews of the acquisition system, including the Packard Commis-sion's, have found that the system is encumbered by overly detailed, confusing, and sometimes contradictory laws, regulations, directives, instructions, policy memoranda, and other guidance. Little room now remains for individual judgment and creativity of the sort on which the most successful industrial management increasingly relies to achieve higher levels of productivity and lower costs. Much of this stifling burden is a consequence of legislative enactments, and urgently requires attention by Congress. Much also has been administra-tively imposed and requires prompt corrective action by DoD.

To reduce the self-imposed burden, the Secretary will charter a joint OSD-Services task force to conduct a zero-based review of regulatory and other guidance to DoD's systems acquisition, procurement, logistics, and related activities, beginning first with DoD-level guidance and proceeding down through the Military Departments and their components. The review will include both existing guidance and that which is currently under development. The task force will also assess the processes by which guidance is developed, issued, and disseminated, and recommend changes to ensure that in the future such guidance is held to the minimum required. The task force will be assembled by the USD/A, and will complete its report to the Secretary not later than January 1, 1990. The task force effort will be governed by a *strong* presumption against retention or duplication of guidance, absent a clear and compelling need. The burden of establishing such a need will be placed on the proponent of the guidance in question. Special scrutiny will be given to guidance that imposes or occasions unnecessary costs in the acquisition process; that inhibits the imple-mentation of sound procurement policies such as "best value" competitive practices and the buying of commercially-available products; that more narrowly confines the discretion of working levels than is required by law or sound

management control; and that imposes unnecessary reports and reviews on program offices and contractors.

The USD/A, with the SAEs, will establish a similar task force to review existing programs and initiatives for "advocacy" of special, single-purpose requirements (e.g., concerning packaging, transportation, maintenance, etc.) on program offices. The task force will be charged with developing a plan to eliminate as many of these advocacy programs as possible.

Inherent in the concept of limited reporting and review requirements is the principle of management by exception--i.e., intervention by senior management only at Milestone intervals, at a PM's request, or in the event that a program encounters substantial problems in meeting its baseline. In the 1987 Defense Authorization Act, Congress provided authority to DoD to designate a limited number of Defense Enterprise Programs (DEPs) to demonstrate the viability of this approach, and as candidates for milestone authorization. DoD should take better advantage of this special authority than it has to date. The USD/A, with the SAEs, will carefully select several new Defense Enterprise Programs from programs in the DAB's Concept Approval (post-Milestone I) phase, provide strong policy direction and oversight in implementing the DEP concept, and seek milestone authorization for such programs to enhance management stability.

Smaller, Higher Quality Staffs

Toward A More Capable Workforce
Approximately 580,000 civilian and military personnel in DoD spend all or a substantial part of their workday in the acquisition field--broadly defined to include research, development, procurement, logistics, distribution, and related maintenance activities. (See Appendix A to this Report.) Their collective efforts form a core part of the U.S. defense program, and much depends upon how efficiently and effectively they equip and supply our Armed Forces. As the Packard Commission pointedly observed:

> *The defense acquisition workforce mingles civilian and military expertise in numerous disciplines for management and staffing of the world's largest procurement organization. Each year billions of dollars are spent more or less efficiently, based on the competence and experience of these personnel. Yet, compared to its industry counterparts, this workforce is undertrained, underpaid, and inexperienced. Whatever other changes may be made, it is vitally important to enhance the quality of the defense acquisition workforce -- both by attracting qualified new personnel and by improving the training and motivation of current personnel.*

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While small improvements have been made in the nearly three years since the Commission completed work, its major recommendations have yet to be implemented. Identifying steps to accomplish the Commission's broad objectives, accordingly, has been a major focus of the Defense Management Review.

On the civilian side -- In the Navy's China Lake personnel project, DoD has proven the viability of a less rigid personnel management system. It also has demonstrated the clear advantages such a system offers to DoD employees and managers alike, including notable improvements in working environment, professional rewards, recruitment and retention. Although the Packard Commission strongly recommended that Congress authorize the Secretary to implement an alternative system of this sort for all critical acquisition personnel, such authority has not been forthcoming. During the 100th Congress, a measure that would have expanded the China Lake initiative to include up to 100,000 DoD employees was adopted by the Senate but not the House of Representatives. Expanded demonstration authority would be useful, but it is not enough. Accordingly, the Administration should seek to define a broader and permanent authority for the Secretary to set civilian acquisition personnel policies DoD-wide, on the understanding such authority will be exercised without increasing overall personnel costs otherwise incurred. (See Appendix B.)

DoD also will seek to increase the professionalism of its procurement workforce to make its employees' capabilities and career opportunities more competitive with those of their private sector counterparts. This will include actively supporting legislation recently proposed by the Office of Personnel Management (OPM) that would allow DoD to pay for degree-related course work by civilian personnel in critical procurement fields. (See Appendix B.) In addition, as the Packard Commission specifically recommended, the Secretary will seek prompt action by the Administration, through OPM, on classification of DoD contracting officers as a professional personnel series, and, in the case of those contracting officers who can commit DoD to more than $25,000 per contract, the adoption of classification standards that require an appropriate combination of relevant work experience and education.

On the military side -- The sophistication and complexity of military equipment continues to increase, as do the challenges implicit in developing, procuring and supporting such equipment. The need for military specialists to manage the acquisition process accordingly is now greater than ever, and will only grow over time. As the Packard Commission observed, each of the Services has made strides in managing its officer personnel to meet this challenge. Looking to the future, however, it is clear none of the Services has yet gone far enough.

Current arrangements reflect a not altogether satisfactory compromise of two valid, but directly competing interests. On the one hand, it is undeniably desirable that those who manage the acquisition system be highly attuned,

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through personal experience in the operational world. to the needs of military users. On the other hand, if these needs are to be met in the successful development of major systems. it is increasingly imperative that acquisition managers possess a range of technical skills and a breadth of experience largely unavailable in operational assignments. It must be recognized that attainment by a military officer of equal competence for senior field grade and higher assignments in both the operational and acquisition arenas is increasingly difficult. and for many purposes impossible. New means must therefore be found to develop and retain the variety of necessary acquisition skills in the military, while at the same time ensuring that development of weapon systems reflects keen regard for operational realities.

For this purpose, the Secretaries of the Military Departments. working with the Service Chiefs and in consultation with the CJCS. will develop and submit for the Secretary's consideration. not later than October 1. 1989. plans for establishment of a dedicated corps of officers in each Service who will make a full-time career as acquisition specialists. These plans will be designed to facilitate the development of officers expert in such distinct sub-specialties as systems development, procurement and logistics. They will identify recommended means to ensure:

- selection of highly promising officers early in their careers;
- timely specialization in acquisition, including the election of such career paths by officers with some significant operational experience (not later than 10-12 years);
- assignment, other than in exceptional cases, to acquisition positions and related training once selected;
- creation of attractive and equitable career paths, including designation of corps-eligible positions;
- and assurance of promotion potential up to the highest flag grades.

So that user perspectives are preserved in the development of weapon systems, appropriate provision should be made for assignment of operational personnel to important supporting roles within program offices.

As part of these plans, the Secretaries of the Military Departments also will submit coordinated recommendations to the Secretary concerning specialized educational requirements and training opportunities for acquisition corps officers throughout their careers. At a minimum, these recommendations will address the designation of the Defense Systems Management College as an intermediate Service school; provision for advanced management and technical training, such as programs in universities and rotational assignments in industry; and establishment of a senior-level Service school, comparable to the National War College, with a specialized curriculum developed to train the most senior acquisition managers. In this regard, such recommendations should address the

rigor and quality of curricula, qualifications and compensation of permanent faculty, and support for scholarly research at DoD acquisition schools, as well as resources required for these purposes. They also should take account of the recommendations of the recently established National Defense University Transition Planning Committee on possible expansion of the mission of the Industrial College of the Armed Forces.

In general -- To ensure that DoD-wide training, education and career development policies concerning civilian and military acquisition personnel are developed and implemented effectively, the USD/A will establish within his organization a central office for such matters. With the USD/A, the Assistant Secretary of Defense (Force Management and Personnel) will develop and administer a central reporting system and data base on the compositi᷉ and training of the acquisition workforce in the Services and other DoD co .ponents.

Toward a More Efficient Workforce
The Packard Commission concluded that implementation of its recommendations:

> *should allow for a substantial reduction in the total number of personnel in the defense acquisition system, to levels that more nearly compare with commercial acquisition counterparts. Elimi-nating a layer of management by moving the functions and people of that layer to some other layer clearly will not suffice.*

The President directed DoD to "develop methods and rationale for reductions to improve efficiency and realize direct and indirect cost savings."

For these purposes, the Defense Management Review examined the "turnaround" of the largest private corporations that have realized dramatic, simultaneous productivity improvements and cost reductions. Many such corporations faced problems comparable to DoD's--including management structures, staffing levels, and entrenched corporate policies and cultures that impeded decisionmaking, frustrated innovation, obscured accountability for success and failure, and imposed excessive overhead costs. Private sector experience in overcoming problems of this sort demonstrates the utility of several related actions:

- identifying and eliminating unnecessary functions and management layers:
- concentrating on core functions performed at appropriate organizational levels;
- consolidating related functions where doing so will occasion greater effectiveness or efficiency;
- lowering overall costs, particularly through sizable reductions in management and other white collar personnel;

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- and employing a variety of innovative techniques proven to motivate
  employees and suppliers and to achieve steady improvements in quality and
  overall performance.

Actions such as these are far more easily undertaken by corporate than DoD
managers, who operate with differing objectives and under a variety of unique
constraints. Nonetheless, private sector experience is instructive at many levels
within the defense acquisition system. It teaches that the achievement of
macro-efficiencies *is* possible over the long-term and should be a paramount
objective of *all* -- in the Executive branch, Congress, and industry -- who play a
role in U.S. defense efforts.

DoD and Congress have collaborated for these purposes recently in addressing
the traditionally divisive issue of DoD infrastructure. As a result of the work
of the Secretary's Commission on Base Realignment and Closure and companion
legislation enacted in 1988, DoD will be able to achieve a more efficient base
structure and greater mission effectiveness. Through strong management
oversight of the closure and realignment process, DoD will seek to realize the
full cost savings projected by the Base Closure Commission.

The Defense Management Review has identified a number of other measures that
can and should be taken to achieve greater efficiency in its acquisition and related
activities. In this context, substantial improvements must ultimately depend
upon progress achieved across a broad front--including the establishment of a
more capable acquisition workforce and of a statutory and regulatory environ-
ment that does not unnaturally limit its productivity. Nonetheless, a variety of
nearer-term actions will be undertaken.

Revision in Service acquisition organizations to implement the Packard Commis-
sion's recommendations, as outlined above, will be part of a broader effort.
This will involve the elimination of management layers and research, development
and procurement-related functions that do not add clear value; a consolidation
of related functions where possible; an overall improvement in the efficiency of
DoD's acquisition management, logistics, distribution and related maintenance
activities; and, by these means, a reduction of at least 15 percent (or approxi-
mately $7.5 billion) in the annual cost to DoD of such related functions by not
later than Fiscal Year 1993, for an aggregate cost saving of $30 billion over the
1991-1995 Five Year Defense Plan. Such reduction will be implemented on a
phased basis, beginning with DoD's Fiscal Year 1991 budget review.

To achieve these purposes, the Deputy Secretary will chair a special task force
composed of the USD/A, the Secretaries of the Military Departments, the DoD
Comptroller, and the Assistant Secretaries of Defense (Force Management and
Personnel) and (Program Analysis and Evaluation). A detailed plan incorporating

the task force's recommendations will be submitted to the Secretary by October 1, 1989. The plan will provide for comprehensive review of management structures within OSD, the Military Departments and Defense Agencies, and of field and headquarters functions and operating processes, to meet the cost reduction goal and enable DoD to perform its acquisition and related missions with improved efficiency and effectiveness. Particular emphasis will be given to steps that reduce recurring payroll costs to DoD, whether incurred by direct hire or contract support. The plan will address, among other matters, the potential for increased productivity through broader implementation of OMB Circular A-76 (Performance of Contract Activities). It also will protect near-term funding for labor saving devices (e.g., upgrades in automated data processing capability) that will enhance productivity.

In addition, all DoD contract administration services (CAS), including those currently performed in the Defense Logistics Agency (DLA) and the Military Departments, will be consolidated under a newly-created Defense Contract Management Agency (DCMA), which will report to the USD/A and be charged with more efficiently and effectively performing the CAS function. The USD/A will assist the Deputy Secretary in preparing a plan to establish the DCMA for the Secretary's approval by October 1, 1989. This plan will, among other things, seek to streamline existing CAS organizations, promote uniform interpretation of acquisition regulations, improve implementation of DoD procurement policy, and upgrade the quality of the CAS workforce while eliminating overhead and reducing payroll costs. The plan should make appropriate provision for continued technical and other support to program offices. It should also preserve the existing regulatory division of responsibilities between those of administrative contracting officers, to be exercised within the DCMA, and those of procuring contracting officers, which will continue to be exercised within the Military Departments.

Communications With Users

Both the Packard Commission and the Goldwater-Nichols Act sought to improve the requirements process, i.e., DoD's efforts to define military needs, their links to national strategy and deficiencies in existing capabilities, and the characteristics of specific systems to meet those needs. The Goldwater-Nichols Act staked out an important role for the CJCS, as spokesman for the CINCs, in this process. The Packard Commission emphasized the responsibility of the USD/A and the VCJCS to ensure that complex systems reflect a sensible calculus of cost, schedule and performance. Over the last several years, the VCJCS' Joint Requirements Oversight Council (JROC) and the USD/A's Defense Acquisition Board (DAB) have begun to collaborate more effectively for this purpose. This collaboration should be strongly encouraged, and the JROC should assume a broader role in support of DAB decisionmaking.

·ᴄ·rdingly, the Secretary and the CJCS will charter the JROC to review *all*
·ᴄ·ciencies that may necessitate development of major systems, prior to any
·ᴄ·sideration in the DAB. Based on inputs from the CINCs, Services, and
·ᴄ·where, the JROC will review the validity of an identified mission need (as
·ᴄ·tinct from any potential system or program), assign a joint priority for
·ᴄ·eting the need, and forward an approved mission need statement to the DAB.

·ᴄ·nually, the DAB will review mission needs identified by the JROC for possible
·ᴄ·estone 0 approval. Those candidates passing through this restructured
·ᴄ·estone 0 would not be considered programs in the traditional sense; instead,
·ᴄ· this threshold the USD/A will authorize Concept Direction studies to evaluate
·ᴄ·ential alternative approaches to meeting validated, priority needs. The USD/A
·ᴄ·ll coordinate the funding of Concept Direction Studies, resources for which
·ᴄ·ay come from one or more of the Military Departments, a central fund
·ᴄ·ntrolled by the USD/A, or both. To address alternative approaches to
·ᴄ·eting a variety of mission needs, more Concept Direction Studies may be
·ᴄ·dertaken than will be carried forward past Milestone I (Concept Approval).
·ᴄ·rticular care will be exercised at Milestone I to ensure that Concept Approval
·ᴄ· given to no more new programs than long-term resources available to DoD
·ᴄ·ll support. To provide for programs that do enter the post-Milestone I
phase, a rough allocation of out-year resources for such purposes will be made
at the DoD-wide level and, following Concept Approval by the DAB, allocated by
the DPRB to specific new programs.

The JROC also will be chartered to play a continuing role in the validation of
performance goals and baselines prior to DAB reviews of major programs
(including, unless otherwise directed by the Secretary or Deputy Secretary,
special-access programs) at all successive Milestone intervals.

Better System Development
Principal among the Packard Commission's concerns in recommending establish-
ment of the USD/A was the perceived need for more vigorous policy direction in
several related areas.

Research and Development -- Decisions made during the early phases of systems
development -- including those that involve funds and schedules for prototyping
and testing -- often have dramatic consequences for operational performance and
life-cycle cost. The USD/A will be charged with developing and ensuring
rigorous application of policies that support sound decisions on major programs
through Full Scale Engineering Development. In particular, these policies will
dictate that the schedules and management plans for major programs:

* support the building and testing of system and critical sub-system proto-
  types, the use of systems engineering, and the validation of manufacturing

processes as early as possible and certainly well prior to the commencement of High Rate Production;

- and provide for early test and evaluation of prototype hardware to prove concept, performance, and suitability in realistic operational environments.

The DAB review process will be restructured and disciplined to assist the USD/A in discharging these responsibilities. As prospective programs pass out of the Concept Direction (post-Milestone 0) phase, the USD/A will convene a DAB Milestone I (Concept Approval) review of requirements/costs tradeoffs, initial affordability assessments and other minimum accomplishments required by DoD directive. DAB Milestone II (Full Scale Engineering Development) and III (Production) reviews will ensure that other, progressively more exacting requirements are met. A redefined Milestone IV will replace the current Milestones IV and V. The new Milestone IV review will address the need for major upgrades or modifications to systems still in production.

In conjunction with the DoD Comptroller, the USD/A or his Principal Deputy will exercise so-called apportionment authority with respect to funding for programs passing through successive Milestone reviews, in order to ensure demonstrable attainment of minimum required accomplishments established in revised DoD directives, and the successful completion of all additional exit criteria levied on programs as a result of previous DAB reviews. Only the Secretary, Deputy Secretary and USD/A will have the authority to waive such requirements and exit criteria.

In general, the USD/A will be responsible for improving the timeliness, relevance and utility of the Selected Acquisition Reports (SARs), the Defense Acquisition Executive Summaries (DAES), and other information on acquisition matters available to senior DoD managers.

Constrained research and development (R&D) resources will pose special challenges to the maintenance of a strong defense technology base. The USD/A will be charged with coordinating R&D programs DoD-wide, to eliminate duplication of effort and ensure that available resources are used to maximum advantage. In this regard, the USD/A will have a broad mandate to strengthen technology development programs of the Military Departments and the Defense Advanced Research Projects Agency (DARPA); encourage technical competition and technology-driven prototyping that promise increased military capabilities; exploit the cost-reduction potential of innovative or commercially-developed technologies; and develop procurement policies conducive to this purpose.

Procurement Policy -- In regard to procurement policy, the Packard Commission emphasized specific reforms in two areas:

- substantially greater reliance on *commercially-available products*, often well-suited to DoD's needs and obtainable at much less cost;
- and adoption of *competitive practices* predicated more broadly on a mix of cost, past performance and other considerations that determine overall "best value" to the government.

With respect to the former, the recent Report of the Defense Science Board's (DSB) Task Force on Commercial Components, which revisited the 1986 Summer Study conducted by the DSB in the aftermath of the Packard Commission, details a number of promising actions. These have emerged from the DSB's sustained review of existing impediments to procurement of commercially-available products, and underscore the potential for large economies through reform of DoD's buying habits. The USD/A will be charged with expediting the implementing administrative actions recommended by the DSB Task Force. The USD/A will also establish a data base to track progress DoD-wide in expanding procurement of commercially-available products.

The DSB Task Force's work demonstrates that realizing large cost savings through procurement of commercially-available products will also require simplified contracting procedures. Accordingly, the Administration should make two legislative proposals: first, the Commercial Products Acquisition Act of 1989, which would authorize procurement of such products under simplified competitive procedures that more closely emulate those of the commercial marketplace; and second, a Commercial Acquisition Pilot Program Act, which would establish a pilot program to demonstrate the advantages of adopting a full-range of commercial-style buying practices and streamlined dispute-resolution procedures. (See Appendix B.)

Improving DoD's competitive practices will require two related actions. First, existing laws governing acquisition should be clarified in order to provide DoD broader discretion in making contract awards competitively based not only on cost but on other considerations as well. The Administration should propose appropriate legislation clarifying the Competition in Contracting Act for this purpose. (See Appendix B.) Second, DoD will implement a contractor performance review system, building DoD-wide on recent efforts of the Air Force and DLA to expand source selection criteria to promote contracting relationships with DoD's best-performing suppliers.

IV. GOVERNMENT-INDUSTRY RELATIONSHIP

Any effort to improve the relationship between government and defense industry must be rooted in this proposition: DoD will not tolerate illegal or unethical behavior on the part of *anyone* in the acquisition system. As a matter of fundamental policy, DoD, with the Department of Justice (DoJ), will devote its full energies and resources to enforcement of applicable laws.

All too obscured by the glare of recent investigations and prosecutions, however, is a corollary proposition emphasized by the Packard Commission: bringing law-breakers to book for past deeds is not by itself enough: more affirmative efforts are necessary if DoD is to acquire, and industry to supply, equipment and materiel in a manner that meets the highest standards of accountability and performance. Among the specific approaches recommended by the Commission were the following:

- better administration of existing ethical standards for civilian and military acquisition personnel in DoD;
- greatly improved contractor self-governance, entailing the voluntary assumption by industry management of demanding new responsibilities for oversight of their contract operations;
- and more effective use of DoD auditing and other oversight resources.

The Defense Management Review took stock of progress in implementing these and other recommendations of the Packard Commission, as well as a variety of related initiatives to encourage improved industry performance and promote the health of the U.S. defense industrial base. Specific actions emerging from the Review are detailed below.

Greater Accountability in Government

The Packard Commission emphasized that:

> *[i]t is critical in defense management to establish and maintain an environment where official standards of conduct are well understood, broadly observed, and vigorously enforced.*

Accordingly, it recommended that DoD mount a greater effort to administer ethics regulations, and develop guidance and training programs tailored to the acquisition workforce. More recently, the President, the President's Commission on Federal Ethics Law Reform, and Congress have spoken to the great need for training and educating government employees in their ethical responsibilities.

Particularly when considered against the range of these expectations, current DoD ethics programs appear notably deficient. For too long, such programs have been at best a secondary concern of DoD managers and relegated instead to lawyers and inspectors general. Consistent with the President's emphasis on

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integrity in government. DoD will commit the energy and resources required for a model ethics program--particularly for acquisition personnel.

The Secretary will charter a DoD Ethics Council composed of the USD/A and the Secretaries of the Military Departments, and advised by the DoD Inspector General and General Counsel. An Executive Director for Ethics Training and Communications Policy will be appointed in the USD/A's office to support the Council's efforts. The Council will be specially charged with developing ethics programs for the acquisition workforce. It will concentrate on developing guidance tailored for acquisition personnel, and on improving existing compliance programs. It also will develop broader programs to enhance awareness and understanding of ethical issues--how they arise day-to-day, how existing standards may or may not apply, and what responsibilities DoD managers have as moral leaders. The programs will promote an on-going dialogue on ethics issues within DoD--from the Secretary and Deputy Secretary, who will personally participate, to the most basic working levels. The Council will review existing efforts in this area and recommend to the Deputy Secretary such additional personnel and other resources as may be required, including outside expertise necessary for designing the vigorous program intended.

In this regard, the Packard Commission noted that ethical standards are only as easy to observe, administer, and enforce as they are certain in scope, simple in concept, and clear in application. In the proposed Government-Wide Ethics Act of 1989, the Administration has recommended specific changes in law to ensure, among other things, that official standards are fair, objective, consistent with common sense, and not unreasonably restrictive so as to discourage able persons from entering public service. DoD strongly supports the proposed legislation, which will establish appropriate standards for, and preserve DoD's ability to attract and retain, personnel with the qualifications needed to manage the acquisition system.

Greater Accountability in Industry
Within the context of vigorous law enforcement, contractor self-governance remains the most promising additional mechanism to foster compliance with the high standards expected of DoD's suppliers. The conduct revealed by recent DoD-DoJ investigations, including Operation Ill Wind, is not representative. Major elements of defense industry *have* made strides in answering the Packard Commission's challenge. As with many other aspects of the Commission's recommendations, there is no occasion here for self-congratulations. Much remains to be done, and persistence will be required. Nonetheless, the Defense Industry Initiative on Business Ethics and Conduct and similar industry efforts deserve and will receive DoD's strong support. DoD will oversee the acquisition system in ways calculated to encourage responsible companies in such self-governance efforts, including establishment of corporate codes of conduct. If such codes are to be a meaningful reflection of management's priorities and

commitment, however, it is apparent that they must be adopted by contractors voluntarily, not mandated in procurement regulations. Like quality, ethics cannot be inspected into an organization. Accordingly, DoD will not adopt the rule recently proposed to mandate contractor codes of conduct.

DoD will continue its voluntary disclosure program, under which DoD contractors are encouraged to demonstrate their business integrity and honesty by disclosing evidence of possible procurement offenses. In order to reduce the possibility of inconsistent treatment of defense industry disclosures, the Secretary will work with the Attorney General to adopt and publish a standard agreement for program participation. In addition, to create clear incentives for corporate management, voluntary disclosure of potential violations will remain a central consideration in determination of a contractor's present responsibility to do business with DoD and hence in application of DoD's administrative sanctions (i.e., suspension or debarment).

DoD also will continue to encourage industry participation in its Contractor Risk Assessment Guide (CRAG) program. The CRAG program represents a joint DoD-industry response to several related recommendations of the Packard Commission, and promises more efficient use of DoD audit capabilities through greater reliance on effective contractor systems of internal controls. In conjunction with this program, the Defense Contract Audit Agency (DCAA) has projected broader DoD-industry communications on annual government audit plans in order to highlight opportunities for improved contractor internal controls. The DoD Comptroller, to whom DCAA reports, will be charged with providing strong policy direction and oversight to DCAA for purposes of increasing efficiency and eliminating duplication of effort through improved strategies for the conduct, scope and frequency of its contract auditing.

Over the long term, DoD will seek to develop a procurement system that rewards contractors for demonstrating their commitment to self-governance and all that that notion implies. A supplier's proven reputation for integrity is one aspect of past performance and, as in the commercial world, the totality of such performance merits consideration in the determination of "best value" to the government and in selection of those suppliers with which DoD does business. The USD/A will develop policies intended to guide source selection with these broader purposes in view.

Better Performance by Industry
There is, of course, more to creating a healthy relationship between government and industry than defining ethical responsibilities. There is also a need to promote robust industrial support for the U.S. defense program, and to prompt defense industry to greater competitiveness and to the simultaneous quality improvements and cost reductions achieved in other industrial sectors.

A series of major studies since the Packard Commission have documented an alarming erosion in the U.S. defense industrial base, including:

- a decline in the overall number of defense suppliers;
- accelerating import penetration and growing dependency on foreign sources for vital components and subassemblies;
- and decreasing returns on fixed assets, declining capital investments, and lagging productivity in key defense sectors.

Current trends are cause for concern, and if allowed to continue will jeopardize U.S. security. If these trends are to be reversed, the acquisition system must be managed in ways that promote improved supplier performance and a resurgent defense industrial base. Ultimately, only broad reform of the acquisition system, including the legal regime and oversight practices under which it currently operates, will attract more U.S. firms to do business with DoD. In the near term, DoD can encourage better performance by defense contractors by:

- using contract types that reduce unnecessary financial risks;
- controlling technical configuration;
- adhering to sound policies on profitability, independent research and development, and progress payments;
- and recognizing suppliers for consistently good performance.

DoD will take a series of actions along these lines, and seek to identify other promising means to encourage steady improvements in industry performance.

DoD will establish contractual relations that do not create financial disincentives to the degree of innovation and technical exploration clearly required by contractors in the early phases of major systems development in order to achieve proper operational performance and lower life-cycle cost. In addition to promoting the use of multi-year procurement contracts, the USD/A will strictly limit the use of cost-sharing contracts for systems development and the use of fixed-price type contracts for high risk development. USD/A approval will be required for any fixed-price type R&D contracts in excess of $25 million as well as those for lead ships.

The USD/A will also be charged with helping to promote the long-term, efficient producibility of systems. With the VCJCS, he will seek to expand the use of broad performance specifications in weapons design, and ensure that specifications are "locked in" prior to High Rate Production and upgrades or modifications are made on a block, not a piecemeal basis.

As a complement to DoD's own R&D efforts, R&D by defense suppliers helps encourage technological innovation, stimulate competition, and expand the availability of militarily valuable products. DoD will continue to recognize costs

incurred by suppliers for independent R&D, and bid and proposal, as necessary costs of doing business. Through the DPRB, it will maintain appropriate levels of funding to defray such costs and thereby promote development of promising technologies to meet future defense needs. DoD also will review periodically the level of progress payments on defense contracts, and maintain such payments at levels appropriate in light of prevailing interest rates and restraints on current DoD outlays. It also will use the tools at its disposal to motivate contractors to improve performance (through incentive-type contracts) and productivity (through profit guidelines that encourage capital investments). The USD/A will be charged with monitoring these and other policies that impact the long-term health and competitiveness of DoD's industrial base.

The USD/A also will develop a quality awards program that annually recognizes top performers in industry that meet cost, performance, and schedule baselines and exhibit high commitment to ethical management.

V. CONGRESSIONAL ACTIONS

DoD, with other elements of the Executive branch, can realize significant improvements in defense management. This Review has sought to take full advantage of opportunities for administrative action, but also demonstrates that these opportunities are limited. The potential for improvement can be increased substantially if Congress adopts changes in legislation -- and can be increased dramatically if, and only if, Congress fundamentally changes the way it addresses defense programs and policies. The President called for DoD's views on steps of this sort to be taken by Congress to improve management practices and procurement procedures.

Changes in Legislation. The Review has identified a variety of specific actions by Congress that would assist in better management of the acquisition system. These are collected in Appendix B to this Report. In addition to those treated fully in earlier sections of the Report, one additional initiative deserves special emphasis. The Packard Commission observed that

> *[o]ver the years, Congress and DoD have tried to dictate man-*
> *agement improvements in the form of ever more detailed and*
> *extensive laws or regulations. As a result, the regime for*
> *defense acquisition is today impossibly cumbersome ....Con-*
> *gress [should] work with the Administration to recodify federal*
> *laws governing procurement in a single, consistent, and greatly*
> *simplified procurement statute.*

Similar concerns have been reflected in the work of other major study groups -- from the Blue Ribbon Defense Panel in 1970, to the Commission on Government Procurement in 1972, to the President's Private Sector Survey on Cost

Control in 1983, to the Office of Technology Assessment (OTA) in 1989. In its recent report on the defense technology base, OTA concluded:

> *The defense acquisition system is a major contributor to the long delays in getting new technology into the field and erects formidable barriers to exploiting technology developed in the civilian sector. While Congress did not intend the system to be slow, cumbersome and inefficient, laws passed to foster goals other than efficient procurement have made it so.*

With the enactment of additional major legislation since 1986, when the Packard Commission finished its work, there is increased urgency to addressing the body of procurement law in its totality--in order to simplify and clarify the framework under which DoD and other departments operate, and more broadly to restore some breathing space for judgment and incentive necessary to make the acquisition process fundamentally more effective. This will require Congress to take the initiative, which the President should call for in urging the Congressional leadership to establish select committees in both Houses to commence work as soon as possible on a landmark recodification and streamlining of federal law in this area. For its part, the Administration should pledge unreserved support for such an effort, and work closely with the designated committees in order to help them complete their work at the earliest date.

Broader Congressional Reforms. Congress plays a central role in formulating and implementing U.S. defense policy. Much depends on the way in which it exerts its authority, and how well or poorly it carries out its responsibilities.

The intense scrutiny recently paid to DoD organization and management has occasioned a growing conviction that the procedures by which Congress today does its work require careful and thorough re-examination, as do the various ways in which Congress, its staff and Congressional agencies influence DoD operations. Critics, including many in Congress and the Executive branch, have focused on:

- the profound management problems and waste that inevitably result from the redundant phases of budgeting, authorizing and appropriating defense resources year by year;
- the policy gridlock implicit in the overlapping and duplicative jurisdiction over DoD affairs enjoyed by some 30 committees, 77 subcommittees, and 4 panels;
- the tremendous disparity of interests -- many difficult to reconcile with prudent management -- that DoD is given to serve through line items, general provisions in authorization and appropriations bills, and report language ; and

- **the** questionable benefit to Congress, and the unquestionable c. to DoD, of much Congressional activity. *Every working day*, for example, entails on average almost 3 new General Accounting Office (GAO) audits of DoD; an estimated 450 written inquiries and over 2,500 telephone inquiries from Capitol Hill; and nearly 3 separate reports to Congress *each* averaging over 1,000 man-hours in preparation and approximately $50,000 in cost. In addition, senior DoD officials spend upwards of 40 hours preparing for the 6 appearances as witnesses and the 14 hours of testimony that they provide on average for *each* day Congress is in session.

If the ambitious purposes of the Goldwater-Nichols Act and the Packard Commission are ever to be fulfilled, Congress *must* devote serious attention to these issues. In a bipartisan spirit, with the objective of promoting essential collaboration between the Executive and Legislative branches, and more particularly of improving Congress' performance of it vital role in providing for the common defense, the President should urge the Congressional leadership to charter a study of legislative processes and identify specific changes (e.g., steps to institutionalize a biennial defense budgeting process) for consideration at the earliest date in the 101st Congress. To support this effort, and to build on recent work of the Packard Commission and others in this area, the Secretary will supervise preparation of a White Paper on DoD and the Congress, for submission to the President by October 1, 1989.

VL CONCLUSION

As was noted at the outset, realization of the President's full objectives for management of DoD will not be easy. It will require:

- **teamwork** among DoD's senior managers;
- **sound,** longer-range planning and better means for managing available resources;
- **more** discipline in what weapon systems we buy and how we buy them;
- **better** management of the people we rely on to produce such systems;
- **an** environment that promotes steady progress in cutting costs and increasing quality and productivity;
- **and** adherence to the highest ethical standards.

Even actions that can be implemented on existing authority within DoD will take time and devoted effort. Others, including those that demand Congress' and industry's attention, will require cultivating still broader consensus and commitment. Nonetheless, the American people expect that those who manage the nation's defense effort will aim high. And they deserve nothing less than the "quest for excellence" of which the Packard Commission spoke.

ACQUISITION WORKFORCE

Most narrowly defined, the acquisition workforce comprises only those who negotiate and administer contracts for major weapon systems. Broader definitions include activities occurring outside the contract process, such as documenting the need for a new weapon, testing systems under development, maintaining systems in the field, and disposing of outmoded or unneeded equipment. Service organizational structures generally group these functions together . A still more comprehensive perspective would encompass all those who procure the ordinary goods, such as office supplies and delivery vehicles, needed to support any large organization within DoD.

Three general methods are available for estimating the size of this workforce:

- Surveying actual job activities;

- Counting people in specified occupations; and

- Counting entire organizations.

Experience has proven the first to be impractical; the second and third, used separately, inevitably miss some employees with significant procurement duties. A combination of occupational and organizational counts, while perhaps marginally overstating the total workforce, is necessary to take into account all personnel involved in these procurement duties.

Applying this method against a "cradle to grave" concept of acquisition is consistent with the charter of the USD/A, which assigns authority for the "system whereby all equipment, facilities, and services are planned, designed, develor-d, acquired, maintained, and disposed of within the Department of Defense." This method encompasses 11 Service commands and one Defense Agency, as well as those who work outside these organizations in 9 civilian occupations and 38 military officer specialties. It adds four commands to a list developed by the General Accounting Office in an earlier study of defense acquisition. This method also adopts the same job categories used by the Packard Commission in estimating the size of the acquisition workforce. The table following represents the most recent personnel totals available.

ACQUISITION WORKFORCE

ACQUISITION ORGANIZATIONS	Employment*	
	Civilian	Military
1. Army Information Systems Command	18,817	1,701
2. Army Materiel Command**	105,592	2,773
3. Office of Naval Research	5,029	114
4. Naval Facilities Engineering Command	19,650	730
5. Naval Air Systems Command**	43,903	1,128
6. Naval Supply Systems Command**	26,278	640
7. Naval Sea Systems Command**	110,181	1,424
8. Naval Space and Warfare Systems Command**	28,572	630
9. Air Force Logistics Command**	86,676	3,109
10. Air Force Systems Command**	28,366	10,407
11. Air Force Communications Command	6,921	4,088
12. Defense Logistics Agency**	53,134	795***
OTHER ORGANIZATIONS		
Acquisitions Occupations****	18,645	--
Acquisitions Specialties****	--	2,828***
TOTAL	551,764	30,367
GRAND TOTAL	582,131	

* As of December 31, 1988. This does not include subsequent programmed reductions.
** Listed by General Accounting Office as "buying commands."
*** Estimated.
**** As identified by Packard Commission.

SPECIFIC LEGISLATIVE INITIATIVES

1. **Stability In Funding Programs:** Eliminate the current requirement that a proposed multiyear contract achieve a specific percentage savings before the contract may be entered into.

   The FY 1989 Defense Authorization Act (Pub. L. 100-456, 102 Stat. 1928 (Sept. 29, 1988)) currently limits the number of programs that can qualify for multiyear procurement savings because they fail to meet the minimum savings threshold. This threshold should be eliminated or, at a minimum, reduced. This can be done at no expense to Congressional oversight of the procurement process because DoD would still have to justify a multiyear procurement in terms of cost savings and other benefits before Congress authorizes and funds the program. In addition, a multiyear procurement would have to satisfy the statutory criteria concerning benefit to the government, stability of requirements, stability of funding, stability of configuration, confidence in cost estimates, and confidence in the contractor's ability to perform. 10 U.S.C. Sec. 2306(h). The proposed amendment would simply permit DoD and Congress to evaluate each multiyear procurement candidate program on its own merits.

2. **Alternative Personnel System:** Authorize the Secretary of Defense to establish a personnel and pay system for civilian acquisition employees.

   The proposed legislation--modelled after the China Lake project--would authorize the Secretary to design employment, compensation, performance, management, training, and benefits programs to enhance the Department's competitive position in the labor market for acquisition personnel. Designed in conjunction with the Office of Management and Budget and the Office of Personnel Management, the personnel system (including senior acquisition personnel, contracting officers, scientists and engineers) would be phased in over a number of years and introduced in discrete stages at the different organizations and for different occupations involved in the acquisition process. The approach would include consideration of, among other things, using the concept of pay banding; paying differentials to supervisors and managers; paying performance/retention bonuses; establishing a system of direct examination and hiring; and designating a certain number of positions in specific research and development laboratories or technology centers requiring extraordinary qualifications. The cost of the alternative personnel system would be limited to the costs that would have been incurred had the system not been implemented.

3. Pay-for-Degree Legislations: Amend current law (5 U.S.C. 4107(c)) to permit expanded opportunities for the education and training of civilian acquisition personnel.

Under current law, DoD is barred from paying for training the sole purpose of which is to permit an employee to obtain an academic degree. 5 U.S.C. Sec. 4107(c). The current bar to degree training can be a disadvantage to the DoD in competing in the marketplace for employees with skills critical to its acquisition functions.

On March 20, 1989, the Administration submitted a legislative proposal "To amend title 5, United States Code, to allow degree training for Federal employees in critical skills occupations, and for other purposes." See Letter from Constance Horner (Director, Office of Personnel Management) to the Hon. James C. Wright, Jr. (Mar. 20, 1989). This authority would be an important factor in improving the quality of the DoD's acquisition workforce and should be enacted expeditiously.

4. Greater Use of Commercially-Available Products.

   a. Authorize Simplified Competitive Procedures--

The Administration should submit the proposed "Commercial Products Acquisition Act of 1989." This proposed legislation would authorize the use of commercial-style, competitive procedures for the acquisition of commercial products. The proposed legislation would provide acquisition officials with the flexibility they need to emulate their commercial counterparts and capitalize on the efficiencies possible when buying products off existing production lines. The proposal is designed to provide acquisition officials with an efficient means for conducting market research and identifying the products constituting the best values. In addition to shortening acquisition leadtimes and increasing competition, the proposal will enhance DoD's ability to acquire high-value commercial products incorporating the most up-to-date technology. The proposal would also exempt commercial product acquisitions from the unique requirements that ordinarily apply and impose source preferences, special contract provisions, and performance requirements when the Government is the purchaser.

   b. Establish a Pilot Program to Evaluate DoD's Use of the Full-Range of Commercial-Style Practices--

The Administration should also submit a "Commercial Acquisition Pilot Program Act." In addition to the improvements provided by the proposed "Commercial Products Acquisition Act of 1989," this Pilot Program would require certain DoD components to use the full range of commercial contracting terms and conditions when buying commercial products; exempt the acquisition of commercial products from the numerous statutory requirements

that otherwise govern government contracts; and dramatically streamline dispute resolution procedures. The Pilot Program would last for two years and would be periodically reviewed by DoD and Congress to evaluate its impact.

5. **Best Buy Practices:** Clarify the Competition In Contracting Act (10 U.S.C. Sec. 2305(b)(4)(A) (ii)) to permit a contract to be awarded without discussions, on a basis other than price alone, when the award would be in the best interests of the Government.

The Comptroller General has held that, under the current statute (10 U.S.C. 2305(b)(4)(A)(ii)), when a decision is made by a contracting officer to award a contract without holding discussions with competing contractors, price must be the sole basis for making the award. See Mariah Assoc., Inc. B-231710 (Unpub. Oct. 17, 1988); United Telecontrol Electronics, Inc. B-230246 (Unpub. June 21, 1988); and Meridian Corp., B-228468 (67 Comp. Gen. 233, Feb. 3, 1988). This requirement--that the lowest bid be accepted even where it does not result in the "best value" to the Government--eliminates the benefits that accrue from making awards without discussions where a contractor's design or technical proposal is clearly superior and the price is fair and reasonable. It also limits the Government's ability to select commercial products on the basis of best value to the Government, by lengthening the acquisition time involved and increasing the overall cost of the procurement. The proposed amendment would eliminate these problems, and ensure that DoD has the benefit of more vigorous competition.

APPENDIX F

DEFENSE MANAGEMENT REPORT ASSESSMENT

This article discusses the DMR and some of the affects it will have in DoD.

The DMR at Work

TOWARD SIX BROAD GOALS

President George Bush in a February 1989 address to Congress charged the secretary of defense with undertaking a review of defense management practices. Secretary of Defense Dick Cheney responded in July 1989 with the *Defense Management Report to the President*, which provided a plan to implement fully the Packard Commission recommendations; improve substantially the performance of the defense acquisition system; and manage more effectively the department and its resources.

The report called for the deputy secretary of defense, the secretaries of the military departments, the chairman of the Joint Chiefs of Staff and the under secretaries of defense for acquisition and for policy, as the senior managers within the Department of Defense, to undertake a broad range of actions to carry out the president's charge.

The implementation process provides for continuous improvement of defense management. Accomplishing the full set of objectives will require several years of significant effort. This progress report highlights the first generation of *Defense Management Report* implementation actions. These efforts are designed to achieve six broad goals:

Based on Defense Management Report Implementation Progress Report, Jan. 10, 1990.

DEFENSE 90

- Reduce overhead costs while maintaining military strength;
- Enhance weapon systems program performance;
- Reinvigorate the planning and budgeting process;
- Reduce micromanagement;
- Strengthen the defense industrial base; and
- Improve observance of ethical standards in government and industry.

Reducing Overhead

DoD is implementing a significantly more streamlined acquisition management structure with clear lines of responsibility and authority running from the under secretary of defense for acquisition through full-time service acquisition executives and full-time program executive officers to individual program managers. Each military department has developed a plan for, and is now streamlining, its acquisition management structure in a manner consistent with the *Defense Management Report*.

The services' systems and materiel commands will be reorganized with a primary focus on providing service logistics support, managing programs that fall outside the program executive officer structure and providing a variety of support services to the program executive officers and program managers. The revised structures will eliminate layers of supervision and functions that add little or no value to the

overall management of DoD and should improve the efficiency of the acquisition and logistics systems.

Nearly all contract administration services, currently divided among the three military departments and the Defense Logistics Agency, will be consolidated under DLA. This will result in a streamlined organization that will promote uniform implementation of acquisition policies and regulations and will result in savings of both dollars and manpower. Consolidation was chosen to avoid the significant overhead costs associated with establishing a new management structure. The remaining contract administration operations will also be reviewed for possible consolidation and additional streamlining.

A corporate information management initiative is under way to develop more efficient and effective data processing and information systems, eliminate duplication of effort in information management and ensure the systems support policy goals and timely decision-making. This initiative will benefit from the advice of experienced and creative information management specialists in both industry and DoD.

Through these and similar efficiency efforts, DoD will realize a total reduction of approximately 18,000 civilian and 24,000 military personnel in acquisition and management positions by the end of 1995. DoD will make a concerted effort to manage the reductions and consolidations through attrition and

> "Each military department has developed a plan for, and is now streamlining, its acquisition management structure in a manner consistent with the Defense Management Report.

> Personnel reductions, organizational streamlining and improved management controls will reduce the cost of managing the Department of Defense.

relocation. These numbers represent a true streamlining, because personnel requirements at all levels will be reduced as efficiencies are achieved.

Personnel reductions, organizational streamlining and improved management controls will reduce the cost of managing the Department of Defense. The current estimate is that DoD will save approximately $2.3 billion in fiscal 1991 and $39 billion over the period from fiscal 1991 through fiscal 1995 from the five-year defense budget, as amended in April 1989.

The savings represent a significant down payment toward revised administration spending targets. In addition to the savings above, one adjustment alone in how the department finances and manages reparable parts will enable DoD to make more efficient use of $2.8 billion of budget authority in fiscal 1991.

Streamlining efforts are the result of a continuing, thorough approach to eliminate unnecessary layers of personnel and non-value-added functions. Study groups are investigating possibilities for consolidation or further streamlining of supply depots, maintenance depots, inventory control points, accounting operations, research and development laboratories and test facilities, and automated data processing design centers and operations. These groups will report their findings and recommendations to the deputy secretary of defense by May 1, 1990. In addition, the department will continue to extend efforts to increase efficiency in other sectors of DoD management.

Finally, force structure reductions are under consideration for future years. If changes in the world situation and the results of international negotiations permit those reductions to occur, DoD may be able to realize further reductions in management support structures and associated costs.

Weapon Systems Performance

The under secretary of defense for acquisition has the charter to discipline programs through a revised and strengthened four-phase acquisition process. Programs must successfully achieve defined milestones and specific exit criteria set by the under secretary, with the advice of the Defense Acquisition Board. Clear policies guiding this process have been issued.

In addition, the Joint Requirements Oversight Council, chaired by the vice chairman of the Joint Chiefs of Staff, has assumed a broader role in the articulation of military requirements and the validation of performance goals and baselines for all acquisition board programs. Working through the board and council, the under secretary of defense for acquisition will ensure that complex systems reflect proper combinations of cost, schedule and performance parameters.

The military departments have developed plans to create dedicated corps of officers who will make acquisition full-time careers. They will be provided specialized education and training, attractive and equitable career paths and opportunities for promotion to the highest ranks.

Among actions to improve the civilian work force will be efforts to enhance recruitment and retention, provide career-related education and professional rewards and increase professionalism within acquisition-related fields.

Streamlining the acquisition management structure is designed to improve the flow of information between program managers and the department's senior decisionmakers. To help keep the management lines clear and to assist program managers, a task force was formed to evaluate the effect of single-interest program advocates within DoD. These advocates are functional experts (transportation, packaging, etc.) who can pose restrictions but who possess no integrating author-

ity or responsibility for the program process and tend to make the acquisition system less efficient.

This task force and the Regulatory Relief Task Force independently examined 148 DoD-level directives and instructions that tend to diminish the program manager's ability to exercise authority. The Advocacy Reduction Task Force Interim Report recommends that 104 of these advocacy-related issuances be canceled outright or combined with other issuances. When taken together with the regulatory reduction, these internal changes will reduce significantly self-imposed constraints on sound program management.

Although much has been accomplished in this area, considerably more needs to be done. The under secretary for acquisition will continue to develop unified and streamlined policy guidance. The goal is a simplified acquisition system run by well-trained, dedicated professionals who perform with a minimum of bureaucratic distraction. Authority and responsibility will be pushed down the management chain to the program managers, who will, in turn, be held increasingly accountable for the products of their efforts.

Planning and Budgeting

The secretary chairs a new executive committee consisting of the deputy secretary, secretaries of the military departments, chairman of the Joint Chiefs of Staff and the two under secretaries of defense. The committee reviews overall department policies and permits regular and confidential exchanges on key issues among the department's senior leadership.

In addition, the deputy secretary manages a revitalized planning, programing and budgeting system as chairman of the Defense Planning and Resources Board. Through board discussions, the senior leaders engage in dynamic planning that will, over time, improve the department's ability to link policy,

strategy, programs and budgets through such tools as a restructured Defense Planning Guidance.

The under secretary of defense for policy serves as the primary adviser to the deputy secretary for the planning phase and the preparation of the Defense Planning Guidance. A new planning guidance has been prepared which reflects the dynamic world events of recent months. This process forms the basis of an ongoing review of defense issues that will serve as groundwork for the establishment of the defense program for the next six-year period.

In addition, the under secretary for policy has been given an larger role on the planning and resources board to ensure that policy and strategy considerations are integrated throughout the programing and budgeting phases. This process has already proven successful in developing plans to expand DoD's role in countering the production and trafficking of illegal narcotics, in supporting the reformulation of overall defense strategy in a rapidly changing world environment and in the establishing a significantly reduced fiscal 1991 defense budget.

The board discussions will play a vital role in providing better links among national policies, military strategy and defense programs. To support this effort, the under secretary for acquisition will play an increased role in the resource allocation process to establish tight links between program and resource planning.

Reduce Micromanagement

The Defense Management Report charged the under secretary for acquisition with assembling a joint task force to evaluate the effect of internal regulations on the acquisition process. A regulatory relief task force of nine working groups has achieved impressive results from its exhaustive effort.

The task force reviewed a bewildering maze of self-imposed regula-

The goal is a simplified acquisition system run by well trained, dedicated professionals who perform with a minimum of bureaucratic distraction.

tions. For example, of the more than 1,200 DoD directives and policy memoranda reviewed, 512 were determined to affect the acquisition system. The task force reviewed 383 of the documents and recommended eliminating 61, canceling or combining 176, revising 63 and retaining as is only 83.

In the procurement and contracting area, the task force recommended canceling, combining or revising 64 percent of the 431 Defense Federal Acquisition Regulation Supplement contract clauses and 79 percent of the 66,665 lines of text, and also 76 percent of the 80 military department and DoD agency contract clauses and 52 percent of the 44,057 lines of text.

Finally, questionnaires were distributed for review on more than 50,000 specifications and standards and related documents. The task force has focused its initial review on about 1,500 high-payoff standards with the most promising potential for increased efficiency.

In an effort to reduce internal micromanagement, the department will overhaul completely the system of acquisition directives and instructions. New streamlined documents are expected to be issued by July 1990 in a form that permits implementation at the program manager and field operating levels with minimal additional policy guidance.

Procurement and contracting guidance will be completely restructured and streamlined by February 1991 with the publication of a new Defense Federal Acquisition Regulation Supplement. The task force will submit final recommendations on key defense acquisition standards by April 1990, with recommendations due on the remaining body of specifications and standards by December 1990.

To institutionalize the philosophy of reduced micromanagement, the under secretary for acquisition will develop recommendations to improve the process by which DoD-

level documents are developed and issued.

A legislative task force was chartered under the direction of the legislative counsel and former secretary of the Army John O. Marsh Jr. to review existing statutes and to recommend changes that would improve DoD efficiency. The task force's report recommends legislation to improve the management of production, acquisition and logistics, military and civilian personnel, environment and departmental finances.

DoD will be working with the Office of Management and Budget and the Office of Personnel Management, among other agencies, to develop the administration's legislative package.

The *Defense Management Report* also calls on Congress to work with the administration to review and overhaul the statutory framework for DoD acquisition. To aid in this effort, the report suggests specific themes that should guide such an effort. As called for in the report, a white paper on DoD and Congress that emphasizes the need for cooperation between the executive and legislative branches on defense issues is being sent to the president.

Defense Industrial Base

The contractors that comprise the defense industry will play a vital role in future U.S. defense efforts. The industrial base must be strong and must include manufacturers that are highly flexible, technologically advanced and ever-creative if DoD is to fulfill its mission of defending the nation in the years ahead. This will require that both DoD and industry maintain active research programs in vital technologies that will be particularly critical in the future.

To strengthen this industrial base, DoD must create incentives (and eliminate disincentives) to invest in new facilities and equipment

as well as in research and development. One tool of particular importance in this regard will be continued DoD support of independent research and development in industry.

The quality of end products and the productivity of defense manufacturers can be improved through the use of contract mechanisms that reduce unnecessary financial risk. For example, the department will restrict severely the use of fixed-price development contracts. Such contracts, which are restricted for programs over $10 million, tend to put contractors in the untenable position of developing high-risk programs at a fixed price. This tends to inhibit exploration and innovation early in a program when changes in design can be made more effectively at a much lower cost. Likewise, cost-sharing arrangements would be given similar scrutiny and be subject to limitations.

In addition, DoD is fostering better performance by defense contractors through the proper control of technical configuration and by developing sound policies on profitability and progress payments. Finally, the department is developing a contractor performance review system that will permit a more thorough consideration of past performance in source selection and thereby promote contracting relationships with suppliers with solid histories of performance.

Observance of Ethics

The secretary chartered a DoD council consisting of the under secretary for acquisition and the secretaries of the military departments to develop ethics programs for the department. The council has met and established a joint working group headed by the director for ethics training and communications policy to develop a proposed model ethics program, including education and training; develop a plan for a DoD-wide ethics conference; and re-

view existing compliance programs for needed enhancements.

The department is considering a proposal to revise fundamentally the process of industry compliance and government oversight in procurement matters. The proposal calls for a demonstration program in which several defense contractors enter into specific compacts with the relevant federal government agencies. Each compact would be based upon complementary commitments from both the firm and goverment in compliance and enforcement and in oversight auditing of a contractor's financial and systems performance. DoD will begin developing this proposal with other interested government agencies in the near future.

The goals of these efforts are to strengthen the observance of ethical standards within government and with industry and to create an environment where official standards of conduct are well understood, broadly observed and vigorously enforced.

Improving Management

The strength of the *Defense Management Report* process, and its relative advantage over earlier efforts to change management techniques and structures within the department, is that it is a product of the department itself, not something forced on DoD from outside. The people, both civilian and military, who developed the changes will be the people called upon to make them work.

The changes are not quick fixes but rather fundamental shifts, "cultural changes," that address the issues at the core of defense management. It may take time to realize fully the extent of the changes associated with the report, but the department's leadership is committed to improving defense management and is proud of the accomplishments to date. ▣

THE FIVE-YEAR $39 BILLION SAVINGS ACCOUNT

Using the *Defense Management Report to the President* as its guide, DoD has identified initiatives to save about $2.3 billion in fiscal 1991. Over a five-year period, fiscal 1991-1995, the cumulative savings will be close to $39 billion, with corresponding reductions of 18,000 civilians and 24,000 military. The department's approach has been a cooperative effort with the full participation of the military departments. The approach emphasized the following:

☐ Develop management efficiencies that do not require force level or strategy changes.

☐ Maintain the level, and improve the quality, of management support, while reducing the costs.

☐ Use technology, including automated data processing systems and communications, to reduce costs.

☐ Increase the accountability of program managers by increasing the visibility of total program costs and by placing the costs of doing business under the control of people executing the programs.

☐ Use budget savings realized through management efficiencies to meet DoD's budget target.

☐ If, for other reasons, force reductions are necessary, consider further reductions in the DoD management support structure and associated cost reductions.

☐ If reductions in personnel are necessary due to streamlining and consolidations, achieve these reductions through attrition and early retirements.

☐ A description of the defensewide issues and the results expected from actions in each of the functional areas follows.

Logistics

Funding of operational costs of materiel management and distribution will be moved to the stock funds and will be reflected in the cost of materiel through the surcharges the military departments pay for materiel. This allows greater visibility of the actual cost of operation. It also allows greater flexibility in making decisions that may result in savings by taking down some of the barriers between appropriations.

The major cost factor is inventory, and a key to improved inventory management is increased visibility of assets. If the item manager can look into the retail, wholesale and operating stocks, decisions to redistribute can be made rather than a decision for a new procurement. This reduces lead time, costs and inventory levels.

Transferring Army and Air Force funding of repairable parts from direct appropriations to the funds will give users an incentive to repair

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rather than purchase new items. The Navy transferred the funding in the 1980s and realized a reduction in demand. The savings for Army and Air Force reflect an expected decreased demand.

Multiyear contracting will move DoD toward just-in-time materiel management while building long-term relationships with contractors. Yet DoD will be free to move items to more favorable contracts as practical. Multiple-year contracts can drastically reduce lead times that are very costly.

A decision to retain returns at the closest depot will reduce handling and transportation costs. Ownership of items will remain with wholesale item managers, who will notify the holding depot to release an item when it is requisitioned. Another initiative is a policy to allow storage of materiel close to the vendor rather than the customer. In these times of overnight delivery, transportation can be efficiently managed, and this initiative is expected to result in savings.

The department spends $2 billion per year on transportation costs. Innovations that will be incorporated into DoD operations include establishment of regional freight consolidation centers; a change in the priority system to ensure that only those items that are urgently re-

quired are shipped separately; the shipping of material directly from vendors to users; and use of a "guaranteed traffic" program that includes competitive awards to carriers to provide scheduled movements on specific routes in return for reduced rates.

Clothing purchases for each of the next three years will be limited to reduce inventory growth. The policy for introducing new clothing items will be changed to require services to pay for purchases up front, thereby making customers more aware of the cost of adding new items to the inventory. The services will be encouraged to use commercial specifications, to increase standardization and to reduce the number of clothing sizes.

Administration

The Packard Commission and the *Defense Management Report to the President* called for streamlining and other efficiencies leading to reductions in staff. Defense agencies will realize reductions through organizational changes, automation improvements and procurement efficiencies. The budget anticipates savings through personnel reductions, but the agencies may use alternatives, if appropriate.

Military personnel costs have not previously been reflected in the cost

to run industrial facilities, shipyards, ammunition plants, etc In fiscal 1991, DoD will reflect military personnel costs to ensure visibility of these personnel expenses to managers.

DoD will substitute civilians for military in positions that do not specifically require military incumbents. These functions include installations management, research and development, training and personnel and support activities. The savings result from the conversion of about 20,000 positions over the five-year period.

DoD is committed to improving the standardization, quality and consistency of data from its multiple management information systems and to the adoption of single systems in each major functional area of management.

Computer-aided logistics support will allow the department to accept technical information from weapon system contractors, using DoD-accepted standards, in digitized electronic format rather than hard copy. Computer-aided logistics support will support DoD's needs and develop a network system architecture for interoperability of existing and emerging stand-alone technical information data bases currently used in DoD.

Cost efficiencies and operational improvements can be achieved in the financial and contract communities by consolidating like activities, establishing and maintaining control over valuable resources and property, and enhancing the measurement and accountability for assets owned or contracted for by the department.

Action has been taken to establish better control and accountability over government-furnished material. This accountability will force contractors to be more conscientious, discourage requests for material in excess of requirements and enhance recovery of unused material.

Contracted Advisory and Assistance Services will establish better

> Defense agencies will realize reductions through organizational changes, automation improvements and procurement efficiencies.

controls over documentation, competition and approval of services provided by consultants. The controls will provide more accurate reporting of consulting costs, both in the budget justifications and the federal procurement data system.

The *Defense Management Report* called for the consolidation of all DoD contract administration services into a single organization, the Defense Logistics Agency. Consolidation should eliminate differing procedures now used by the four agencies handling contract administration. It will also make it possible to present a single face to industry on all contract management issues.

Further Studies

A number of recommendations for future action require further analysis, but at this time appear to reduce DoD costs further without affecting military capability or reducing the level of support.

Study teams will be reviewing opportunities to achieve greater efficiencies through possible consolidations, management changes and associated savings in the following areas:

❏ The 33 supply depots in DoD operated by the services and Defense Logistics Agency. Consolidation in a single service or agency may result in savings in overhead, systems development costs and better utilization of existing capacity.

❏ The 20 inventory control points that manage about 5 million items valued at approximately $100 billion. Of those items, 4 million are consumable or disposable. Further savings in overhead, system support, mission and facilities costs could be achieved through consolidation and other management efficiencies.

❏ Army, Navy and Air Force maintenance functions that modify, maintain and repair ships,

> Congress' timely and favorable consideration of the proposed legislative changes will enable DoD to take broad-ranging actions to produce economy and efficiency.

planes, tanks and other major equipment. Savings could be achieved in overhead, closure and better oversight of maintenance operations.

❏ The department's 1,000 information technology facilities engaged in software design, systems modification and maintenance, data processing and administrative support. Savings through more efficient central operations, better use of resources and reduced staffing are anticipated.

❏ The services' pay systems and centers, dozens of accounting systems and hundreds of accounting and finance stations. Savings could be realized by streamlining into a single accounting system.

❏ The services' separate labs and test facilities. Nine facilities work on guided missiles, eight on lasers, 15 on medical research, eight on environmental issues and six in psychology. Savings could result through consolidation, reduced overhead and centralization of professional staff.

The *Defense Management Report* called for streamlining DoD's business and management support activities. The department plans to implement single management information systems to support major functional areas important to sound

management. To evaluate the depth of the problem and to guide DoD in developing corrective measures, an executive-level group of outside experts and DoD officials has been established. The department will begin work in fiscal 1990 on the development of requirements for single systems in civilian payroll and personnel, financial management, warehousing, supply management and contract payments.

The department will further analyze areas where emphasis has been placed thus far and will actively search for other management efficiencies. Those analyses will be completed in time to be incorporated in the fiscal 1992 budget. This process will be repeated each year.

A maze of confusing and sometimes contradictory statutes and regulations is one of the more substantial barriers to improving DoD management. Therefore, in addition to budget actions and studies, a set of legislative proposals will be drawn to foster the goals of the *Defense Management Report*.

DoD has begun to reduce self-imposed regulatory and policy guidance. Congress' timely and favorable consideration of the proposed legislative changes will enable DoD to take broad-ranging actions to produce economy and efficiency in many functional areas. ▥

APPENDIX G

COMMITTEE ON GOVERNMENT OPERATIONS REPORT

This Congressional document discusses problems with DoD
Information Systems.

101st Congress, 1st Session - - - - - - - - House Report 101-382

DOD AUTOMATED INFORMATION SYSTEMS EXPERIENCE RUNAWAY COSTS AND YEARS OF SCHEDULE DELAYS WHILE PROVIDING LITTLE CAPABILITY

SIXTH REPORT

BY THE

COMMITTEE ON GOVERNMENT OPERATIONS

NOVEMBER 20, 1989.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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101st Congress | HOUSE OF REPRESENTATIVES | Report
1st Session | | 101-382

DOD AUTOMATED INFORMATION SYSTEMS EXPERIENCE RUNAWAY COSTS AND YEARS OF SCHEDULE DELAYS WHILE PROVIDING LITTLE CAPABILITY

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Mr. CONYERS, from the Committee on Government Operations, submitted the following

SIXTH REPORT

BASED ON A STUDY BY THE LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE

On November 16, 1989, the Committee on Government Operations approved and adopted a report entitled "DOD Automated Information Systems Experience Runaway Costs and Years of Schedule Delays While Providing Little Capability." The chairman was directed to transmit a copy to the Speaker of the House.

I. SUMMARY

The military is highly dependent on automated information systems (AIS) for the reliable operation and maintenance of its weapons systems and other critical military operations such as the management of spare parts as well as day-to-day administrative and financial transactions involving personnel payroll, and contract management. These functions are vital for the efficient operation of the United States defense establishment. The Department of Defense (DOD) currently spends about $9 billion each year on general purpose automated data processing equipment, software, and related services. This "information technology budget" represents a commitment by DOD to tens of billions of dollars in future expenditures for the development and acquisition of new automated information systems.

In an increasingly constrained budget environment when all aspects of federal spending are properly coming under greater scruti-

LETTER OF TRANSMITTAL.

HOUSE OF REPRESENTATIVES,
Washington, DC, November 20, 1989.

Hon. THOMAS S. FOLEY,
Speaker of the House of Representatives,
Washington, DC.

DEAR MR. SPEAKER: By direction of the Committee on Government Operations, I submit herewith the committee's sixth report to the 101st Congress. The committee's report is based on a study made by its Legislation and National Security Subcommittee.

JOHN CONYERS, JR., *Chairman.*

(III)

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(II)

C O N T E N T S

ny, improved management of costly automated information systems represents a substantial opportunity for significant defense cost savings. Continual cost overruns and excessive cost growth of these systems, however, undermine the ability of both DOD and the Congress to effectively allocate scarce financial resources. Strengthening the controls exercised by the Office of the Comptroller of the Department of Defense and its decisionmaking body for major automated information systems, the Major Automated Information System Review Council (MAISRC), is a key ingredient in restoring public confidence in overall management of defense programs.

Despite the importance of strong management actions on the part of DOD, a wide range of problems appear common and chronic to Department and service efforts to effectively manage AIS acquisitions. These problem areas include lack of cost visibility (i.e., knowing the real extent of costs at a particular point in time) and control; schedule delays; lack of capability at the time promised; and excessive requirements meaning that more is being expected of the system than should be the case.

The Legislation and National Security Subcommittee of the House Government Operations Committee initiated an inquiry into the acquisition of automated information systems because of reports that the Navy was experiencing significant cost overruns and technical problems with its Standard Automated Financial System (STAFS) project which was being developed in San Diego, California. Following a hearing[1] on STAFS on September 13, 1988, the Subcommittee expanded its review to include seven other major automated information systems indentified by DOD as having significant cost growth and schedule delays. With GAO's assistance, the Subcommittee verified the existence and seriousness of the schedule delays and cost overruns in these systems. At the conclusion of the review of eight systems, including STAFS, the GAO which assisted in the review reported[2] that the systems have:

• • • experienced significant cost growth, some in the hundreds of millions of dollars. As of September 1988, the estimate to develop and deploy the systems totaled about $2 billion—almost twice the original estimate cost. • • •
Four of the eight systems have been in development for the least 8 years and two of the systems' development efforts were abandoned after $237 million • • • completion dates • • • have been delayed by 3 to 7 years and none of the systems are scheduled to be fully deployed until the 1990's • • •

In addition, budget reports to Congress on the systems reviewed have understated the life cycle costs by more than $1.9 billion. Moreover, both the House Armed Services Committee[3] and the

[1] Hearing on "Management of the Navy's Standard Automated Financial System," before the Legislation and National Security Subcommittee, House Committee on Government Operations, 100th Congress, September 13, 1988.
[2] Report to the Chairman, Subcommittee on Legislation and National Security, Committee on Government Operations, "Automated Information Systems: Schedule Delays and Cost Overruns Plague DOD Systems," dated May 10, 1989 (GAO/IMTEC-89-36).
[3] Report of the Committee on Armed Services for the National Defense Authorization Act for Fiscal Years 1990-1991, House Report No. 101-121, July 1, 1989.

House Appropriations Committee[4] support a strengthening of the MAISRC by more rigorous enforcement of established policy as opposed to cosmetic reorganization. Additionally, in a July 20, 1989 letter,[5] the Legislation and National Security Subcommittee of the House Government Operations Committee cautioned the Secretary of Defense with regard to possibly making a premature decision relative to the placement of the MAISRC under the Defense Acquisition Board (DAB) as advocated by a July 1989 report[6] on Defense Management. The letter urged the Secretary of Defense to defer the decision until investigations by the General Accounting Office (GAO) and the Subcommittee were completed.

While an adequate management structure is in place at DOD to perform effective monitoring and control of AIS acquisitions, it is clear that continued aggressive oversight on the part of Congress is necessary to insure that DOD's own enforcement mechanisms are being adequately implemented.

II. HEARINGS

On September 13, 1988, the Legislation and National Security Subcommittee of the House Committee on Government Operations conducted a hearing on the management of the Navy's Standard Automated Financial System (STAFS).

Testimony was presented by the Honorable Charles A. Bowsher, Comptroller General, General Accounting Office (GAO), accompanied by William S. Franklin, Associate Director, Information Management and Technology Division (IMTEC) of the GAO; John Stephenson, Group Director, IMTEC; and Jeffrey Steinhoff, Associate Director, of the GAO Accounting and Financial Management Division. The Honorable Robert H. Conn, Assistant Secretary of the Navy (Financial Management) and Comptroller, U.S. Department of the Navy, also presented testimony. He was accompanied by Rear Admiral James M. Seely, Deputy Comptroller, and Rear Admiral Harry S. Quast, Director, Information Resources Management. Testimony was also presented by John P. Springett, Deputy Assistant Secretary of Defense, Information Resources Management, Department of Defense, accompanied by Michael J. Melburn, Director for Accounting Policy, Office of the Comptroller.

On May 18, 1989, the Legislation and National Security Subcommittee of the House Committee on Government Operations conducted a hearing on the Management of the Department of Defense Automated Information Systems Acquisition.

Testimony was presented by the Honorable Charles A. Bowsher, Comptroller General, U.S. General Accounting Office, accompanied by Tom Howard, Assistant Director, IMTEC. Also testifying was Cynthia Kendall, Deputy Comptroller of Information Resources Management, Department of Defense, accompanied by Lieutenant General Bruce R. Harris, Director of Information Systems for Com-

[4] Report of the Committee on Appropriations for the Department of Defense Appropriations Bill, 1990, House Report No. 101-208, August 1, 1989.
[5] Letter from Chairman and Ranking Minority Member of the Legislation and National Security Subcommittee, Committee on Government Operations to the Secretary of Defense, July 20, 1989.
[6] Report to the President on Defense Management by the Secretary of Defense, July 1989.

mand, Control, Communications, and Computers, Office of the Secretary of the Army; Rear Admiral Paul Tobin, Jr., Director of the Navy Information Resource Management, Office of the Secretary of the Navy; and Brigadier General John F. Phillips, Deputy Chief of Staff for Communication-Computer Systems, U.S. Air Force. Finally, testimony was received from Fred Sims, Assistant Commissioner for Information Resources Management Policy, and John Caron, Assistant Commissioner for Technical Assistance, U.S. General Services Administration.

At the May 18, 1989 hearing, the GAO testified on six reports it prepared at the subcommittee's request. See appendix.

III. BACKGROUND

During the mid-1970's the Department of Defense experienced major problems in the development and acquisition of large scale automated data processing systems which often resulted in millions of dollars being wasted and years of schedule slippages. In many instances, at the end of the development or procurement initiative there was little or nothing to show for the wasted time and money put into a project.

A. DOD CONTROL PROCEDURES FOR MANAGING MAJOR AUTOMATED INFORMATION SYSTEMS

In October 1978, the Department of Defense took a major step in trying to address the problems that were occurring by establishing a special review panel within DOD to control costs and manage the development of AIS programs. This panel was designated the Major Automated Information System Review Council (MAISRC).[7] The MAISRC is chaired by the Department of Defense Comptroller. Its purpose is to oversee the requirements justification, design, development, and deployment of major AIS developments and acquisitions[8] in much the same fashion that the Defense Acquisition Board attempts to review the acquisition of weapons programs.

It is intended that the MAISRC exercise effective oversight of major AIS developments and acquisitions by requiring a rigorous examination at crucial points in project acquisition known as "milestones." This process consists of five such milestones that allows the MAISRC to review the concept development, design, engineering development, deployment and operation of a system. The intent of this process upon which the success or failure of multi-million dollar AIS programs depend, is to determine at regular intervals whether the system is on schedule and budget, and will deliver the benefits put forward to justify congressional appropria-

tions. The review process relies on the accountability of the project manager and the review authorities within the chain of command.

B. IN-PROCESS REVIEWS (IPR's)

In addition to the Milestone reviews, the MAISRC may also conduct in-process reviews (IPR's)[9] as a means of further reducing program risks. The Chairman of the MAISRC can schedule special IPRs to obtain specific information on problems being encountered by the program at any time.

C. 1983: MILITARY SERVICES GIVEN APPROVAL AUTHORITY FOR AIS ACQUISITION

The MAISRC control procedures were formally relaxed in June 1983 when the military services and DOD agencies were given authority to manage their major automated information system acquisitions for milestone II (engineering development decisions) and milestone III (deployment decisions). This action removed the DOD MAISRC from the management oversight and control of major AIS developments and acquisitions during two critical milestone decision points. While the milestone review and in-process review procedures were basically replicated at the military department and defense agency level, the DOD MAISRC now had to depend completely upon the military departments and defense agencies to adequately report on any changes in costs, schedules, and benefits of the major AIS acquisitions.

The delegation of authority for milestone decisions to the military departments has raised many concerns with respect to the problems associated with cost growth and schedule slippage as well as benefits to be derived from the systems under development. Even though there are some large programs managed by the services that are currently within costs and apparently on schedule, the anticipated benefits remain uncertain.

Three of the eight systems reviewed by the Subcommittee did not receive a MAISRC review, although cost and schedule tolerance levels were exceeded.[10] In addition, the Navy's Stock Point ADP Replacement (SPAR) program also never received a MAISRC milestone review for the modernization segment of the program and SPAR was found to need an evaluation of its economic worth as part of the modernized system design review.[11]

D. SERVICE IPR's INEFFECTIVE

The IPR's which are intended to complement and strengthen the management by the services of AIS acquisitions leave much to be

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[7] DOD Directive (DODD) 7920.1, "Life Cycle Management of Automated Information Systems (AIS)" and DOD Instruction (DODI) 7920.2, "Approval Process for Major Automated Information Systems," define the MAISRC process. The fundamental document which establishes major system acquisition policies for all federal agencies is the Office of Management and Budget Circular A-109. This document identifies and outlines key decisions and outlines the logical sequence of activities in the acquisition process.

[8] "Major Automated Information Systems: Guidelines for Program Managers," Office of the Secretary of Defense, June 1987, p. 2-1. Major AIS developments and acquisitions are those for which the anticipated acquisition and development life cycle costs exceed $100 million from the first phase (mission analysis) through the extension and installation of the developed AIS to all intended locations; the estimated costs exceed $25 million for a single year; or the Office of the Secretary of Defense designates the AIS as "special interest."

[9] IPR's are required in regulation if the program experiences a cost growth of 15% or more or a schedule delay of three months or more. They may also be triggered if there is a change in program scope or structure, such as a ledger accounting system project being expanded to become a management information system to handle more than just financial transactions (e.g. supply requisitions, inventory management and weapon fabrication schedules). DOD Directive 7920.1, "Lifestyle Management of Automated Information Systems (AIS's)," June 20, 1988.

[10] Report to the Chairman, Legislation and National Security Subcommittee, House Committee on Government Operations, "Automated Information Systems: Schedule Delays and Cost Overruns Plague DOD Systems," dated May 10, 1989 (GAO/IMTEC 89-36).

[11] Report to the Chairman, Subcommittee on Defense, House Committee on Appropriations, "COMPUTER SYSTEMS: Navy Stock Point ADP Replacement Program Needs Better Management Controls," dated September 17, 1987 (GAO/IMTEC-87-30).

desired. Again, in the case of the Navy's SPAR program, GAO found that the conversion component[12] of SPAR was driving the entire MAISRC approval process because there was no separate milestone review of the system modernization (ie., software redesign) component of SPAR by either the Navy or OSD. Accordingly, GAO in a report recommended that the Secretary of Defense direct the Secretary of the Navy to:

Establish an additional review for the modernization segment within the SPAR program and ensure that the intent of the review has been fulfilled before allowing the program to enter subsequent development phases. Specifically, the Navy should establish a system design completion review (Milestone II) for the modernization segment.[13]

Although SPAR received IPR's from the Office of the Secretary of Defense (OSD), the focus was almost exclusively on the conversion component, and there was very little consideration given to separating the conversion component from the modernization component until the GAO Report.

E. MAISRC RECORD ON AIS ACQUISITION

The track record of the DOD Comptroller since 1983 on major AIS Milestone reviews is relatively good when compared to the record of the military departments and defense agencies in managing AIS acquisitions. DOD MAISRC milestone reviews have produced effective results. An example of its effectiveness was the MAISRC redirection of the Defense Logistics Agency's Logistics System Modernization Program (LSMP). The MAISRC found that the modernization program did not have an overall strategy for the various automation initiatives within the program, nor could the cost estimates be validated. Therefore, the MAISRC directed DLA to return to milestone zero and define an *overall program strategy* and related costs and benefits.

F. CONGRESSIONAL SUPPORT FOR THE MAISRC PROCESS

Confidence in the DOD MAISRC's ability to properly manage AIS acquisitions when sufficient management information is available, has been clearly reflected by legislative directives. An example of this was the decision by the House Committee on Appropriations to remove oversight of "mission critical" general purpose AIS from the Department of Defense Computer Resource Council (CRC). The CRC was established to review acquisitions of DOD automated information systems exempted from the requirement to obtain a delegation of procurement authority from the General Services Ad-

[12] Conversion component of SPAR refers to a short term Initiative to transition SPAR from its existing UNISYS environment to an interim IBM based environment prior to redesigning the supply management application.

[13] Report to the Chairman, Subcommittee on Defense, House Committee on Appropriations, "COMPUTER SYSTEMS: Navy Stock Point ADP Replacement Program Needs Better Management Controls," dated September 17, 1987 (GAO/IMTEC-87-30).

ministration as required by the Brooks Act (Public Law 89-306).[14] This exemption is referred to as the Warner amendment of 1982.[15]

The original purpose of the CRC was to manage the acquisition of all mission critical computer resources (ie., both general purpose, and special purpose computers that are applied to mission critical applications). However, due to lack of action by the CRC, Congress directed DOD to incorporate all mission critical general purpose computer systems and applications into the MAISRC. Accordingly, the CRC was abolished. The 1986 Congressional action[16] directed the MAISRC to perform oversight over all general purpose AIS procurements, including those exempt from the Brooks Act (Public Law 89-306) that are characterized as mission critical with the exception of embedded computer systems. Additionally, in July 1986, GAO[17] found that the 1982 Warner amendment had not saved DOD any time in acquiring needed ADP resources for mission critical systems.

IV. COST GROWTH IS COMMONPLACE

One of the most troubling problems identified in the Subcommittee's investigation of DOD AIS acquisition is the almost total lack of accuracy in cost estimates.

At the Subcommittee's September 13, 1988 hearing, the Navy Comptroller testified that the initial cost estimate to provide a standardized financial accounting system at the Navy's 14 Research and Development Centers was only $6 million.[18] However, by the time a contract was signed, the cost estimate had risen to more than $32 million. By the time the STAFS program was terminated, over $230 million had been spent and acquisition cost estimates had been revised upward to more than $400 million with life-cycle costs estimates put above $800 million![19] To a lesser but nonetheless significant extent, this same pattern has been found in the other AIS acquisitions the Subcommittee reviewed. Estimates and subsequent control of costs of major AIS clearly continues to be a major problem for DOD. The military departments offered several explanations for the cost increases:

• • Reasons given for cost growth and delays include underestimation of the system's original costs, design fail-

[14] Public Law 89-306 (The Brooks Act). 40 U.S.C. 759 gave sole authority for ADP procurements to the Administrator of General Services. The Administrator may procure the resources for an agency or delegate his procurement authority to the agency.

[15] The Nunn Warner Amendment (10 U.S.C. 2315) exempts the Defense Department from the Brooks Act when the acquired ADP resources are to be used for intelligence, cryptology, command and control, or for equipment that is an integral part of a weapon or weapons system, or that is critical to and in direct support of military or intelligence missions.

[16] Report of the Committee on Appropriations for the DOD Appropriations Bill, 1986, 99th Congress.

[17] Report to the Chairman, House Committee on Government Operations, "ADP Procurement Warner Amendment Has Not Reduced Defense's Acquisition Time," dated July 31, 1986 (GAO/IMTEC-86-29).

[18] Hearing on "Management of the Navy's Standard Automated Financial System," before the Legislation and National Security Subcommittee, House Committee on Government Operations, 100th Congress, September 13, 1988

[19] Report to the Chairman, Subcommittee on Legislation and National Security, Committee on Government Operations, "Computer Procurement Decision Needed on Navy's Standard Automated Financial Systems," dated September 13, 1988 (GAO/IMTEC-88-47).

The Stock Control and Distribution system originally was to replace 23 existing systems at an acquisition cost of about $202 million. During development contract negotiations, the Logistics Command determined that the project was likely to cost over $21 million more than budgeted. To avoid this cost overrun, the Command chose to replace only 13 existing systems. The 10 production management systems removed from the project were to increase the Air Logistics Centers' ability to schedule the distribution of stock, better manage resources, and control recoverable spare parts. Project officials stated that they could not identify the impact the reduced project scope will have on logistics operations until the new system becomes fully operational.[24]

This type of situation is as disturbing as outright cost growth and overruns. The credibility of the original justification becomes suspect when project officials say they can not identify the impact of reduced project scope until a system is fully operational. It becomes more pronounced in this case when the following facts are taken into account:

(1) Originally the Air Force estimated savings of $3.1 billion for its Stock Control and Distribution System;

(2) GAO reported that only $193 million of this estimate could be substantiated leaving $2.9 billion in the unsupported category.[25]

Whether or not this system initiative continues to be a viable option for the correction of known problems in the stock control and distribution area, is certainly a question that needs to be answered.

It is especially disturbing to find that these problems with DOD AIS acquisitions extend to the tier of systems below those to be considered major. A case in point, is the Air Force Engineering Data Computer Assisted Retrieval System (EDCARS).[26] Although the Air Force reported this system as "having full operational capabilities," the data needed to operate the system has not been fully converted from the previous system. According to the GAO:

The Engineering Data Computer Assisted Retrieval System project director stated that the evaluation had been postponed more than a year because of delays in loading the 5 million active engineering data records the system is intended to automate. The director estimated that it could cost over $10 million and take 1 to 2 years with contractor assistance or 2.5 to 6 years without assistance for the Command to input this data. The benefits of the system will not be realized until at least one site's system has a fully loaded data base. Therefore, we ques-

[24] Ibid.
[25] Ibid.
[26] EDCARS is one of nine projects under the Air Force Logistics Command (AFLC) Logistics Management Systems Modernization Program (LMSMP). EDCARS has an estimated acquisition cost of $29.8 million.

ures, program redirection, and enhancements to the original project scope.[20]

The cost increases and the explanations provided for them raise serious questions relative to the underlying causes of the problems. For example, why were the cost estimates so far off the mark? Is underestimation of the system's original cost due to: (1) the lack of credible empirical data about the operation to be automated; (2) the inability of program managers to use parametric cost estimation models due to the unavailability, incompleteness, or inaccuracy of empirical data; (3) the lack of sufficient personnel with experience in industrial cost estimation techniques as applied to automated systems; (4) arbitrary cost caps imposed by senior management in order to obtain congressional funding (i.e., foot in the door technique); or (5) these plus other technical and management conditions.

In an attempt to improve cost estimation of major AIS initiatives the House Armed Services Committee provided DOD with the following guidance which should be implemented by January 1, 1990:

Economic analyses in support of major automated information systems shall be updated annually or for a major milestone review, whichever comes first. This updated information shall be incorporated into the Information Technology Exhibits that accompany the DOD budget submission to Congress. The office of the Assistant Secretary of Defense for Program Analysis and Evaluation shall validate the revised economic analyses.[21]

This guidance was provided to the House Armed Services Committee (HASC) by the Legislation and National Security Subcommittee of the House Government Operations Committee and it was further endorsed by the House Appropriations Committee.[22]

A. DOD IS NOT GETTING WHAT IT IS PAYING FOR

Another troubling characteristic of DOD's acquisition of automated information systems is the tendency to cut back on system functions to keep the project within estimated costs. This brings about the issue of whether the potential reduced benefits of the project still justify the expenditure upon which the AIS was approved.

For example, GAO identified several Air Force systems where benefits were in question either due to a reduction in functionality or failure on the part of the Air Force to measure actual benefits of those systems declared to be 100 percent operational.[23] Regarding reduced functionality the GAO stated:

[20] Report to the Chairman, Legislation and National Security Subcommittee, House Committee on Government Operations, "Automated Information Systems: Schedule Delays and Cost Overruns Plague DOD Systems," dated May 10, 1989 (GAO/IMTEC-89-36).
[21] Report of the House Committee on Armed Services on the National Defense Authorization Act For Fiscal Years 1990-1991, House Report No. 101-121, July 1, 1989.
[22] Report of the House Committee on Appropriations on the Department of Defense Appropriations Bill, 1990, House Report No. 101-208, August 1, 1989.
[23] Report to the Chairman, Subcommittee on Readiness, House Armed Services Committee, "Air Force ADP: Evaluations Needed to Substantiate Modernization Program Benefits," dated May 5, 1989 (GAO/IMTEC-89-29).

tion whether the Command should be reporting this as having full operational capability.[27]

One of the primary causes of the underestimation of the difficulty of the data conversion [28] task was the assumption on the part of the Air Force that it was essentially a clerical type operation consisting of transferring information from aperture cards [29] to magnetic tapes. However, *upon closer analysis, the Air Force officials realized that engineers would have to validate, and if necessary update the engineering data during the conversion process to insure the integrity* of the new data in the new system. Why the Air Force didn't realize the complexity and scope of this task until the time of data conversion remains a question and fails to explain why the system was declared fully operational when in fact it was not.

V. SCHEDULE SLIPPAGE IS A WAY OF LIFE

Six of the eight major AIS reviewed, experienced schedule slippages ranging from 3 to 7 years. Comptroller General Bowsher attributed both the cost increases and schedule slippages to either incomplete or excessive requirements. Comptroller General Bowsher characterized the requirements growth situation as "* * * they tend to start off as being designed to be a Chevrolet and they end up being designed more to be a Cadillac and then we find out that the Cadillac doesn't work too well when we try to implement it."[30]

When requirements are allowed to run out of control, they begin to take on the character of a "wish list" as opposed to items that are mission essential and non-deferable. This "requirements creep" situation causes many AIS to become more complex than they need to be, thus delaying the schedule and adding a higher degree of risk and uncertainty to the project. For example, as early as May 1987, GAO warned the Air Force of increased development risks for its Stock Control and Distribution project due to the following:

Feasibility study fully defining existing deficiencies in terms of operational impacts and full explanation of alternative solutions was not done.
Criteria and method to guide early decision and measure project success was not established.
Redefinition of system requirements occurring in mid-development.
Slippage in interim milestones occurring without recognition of a delay to the total project.[31]

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[27] Report to the Chairman, Subcommittee on Readiness, House Armed Service Committee, "Air Force ADP: Evaluations Needed to Substantiate Modernization Program Benefits," dated May 5, 1989 (GAO/IMTEC-89-29).
[28] Data conversion is the translation of computer data from one operating environment (i.e., computer architecture, operating system, etc.) to another.
[29] An aperture card is an 80 column computer punch card with a 35mm filmstrip containing technical data (engineering drawing or specification) mounted on the card.
[30] Hearing on "Management of the Department of Defense Automated Information Systems Acquisition," before the Legislation and National Security Subcommittee, House Committee on Government Operations, 101st Congress, May 18, 1989.
[31] Report to the Chairman, House Committee on Government Operations, "Air Force Computers: Development Risks of Logistics Modernization Program Can Be Reduced," dated May 15, 1989 (GAO/IMTEC-87-19).

A follow-on GAO study identified a 40 month schedule slippage in the projected project completion date.[32] As mentioned previously, the cost of the project was kept in bounds by reducing the number of old systems to be replaced by approximately 40 percent. Thus the advertised capability upon which the system was justified may not be delivered.

Although an Air Force example was used here, the problem is known to exist in each military department as well as the *Defense Logistics Agency (DLA)*. In fact, very few instances can be found of large AIS projects delivering the capabilities and benefits promised on time and on budget.

A. REQUIREMENTS CONTROL CRITICAL TO COST CONTROL

To control requirements for major AIS acquisitions is essentially to control the cost of the system. This point was underscored by Mr. John Caron, Assistant Commissioner for the General Services Administration Information Resources Management Service (IRMS), the office which provides technical advice and assistance to all federal agencies, including the Department of Defense, on AIS acquisitions. In a letter to Congressman John Conyers (D-MI), chairman of the House Committee on Government Operations, Mr. Caron noted that it is estimated that, "* * * almost 25 percent of large system development projects are canceled before completion and that less than one percent of large systems are finished on schedule, within budget and having met all user requirements."[33] Commissioner Caron then summed up the importance of requirements determination in the AIS acquisition process this way:

Our experience working with Federal clients indicates that the most critical stage, and the part most often overlooked, of any development project is the requirements determination. The project managers are generally under pressure to quickly collect and document the requirements, and to get on with the "*more important*" phases of the project.[34] (Emphasis added.)

VI. TESTING IS HIT OR MISS

Adequate developmental and operational testing is an essential part of any weapons acquisition program. This is no less the case with automated information systems. However, in many of the large AIS initiatives within DOD, testing is a significant problem. Some major deficiencies found in the Navy's Standard Automated Financial System were incomplete and substandard testing. The GAO in its report to the Subcommittee stated:

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[32] Fact Sheet for the Chairman, Subcommittee on Readiness, House Armed Services Committee, "Air Force ADP Logistics Systems Modernization Costs Continue to Increase," dated December 28, 1988.
[33] Mr. Caron told the Subcommittee that his statement was based on GAO report titled "Contracting for Computer Software Development: Serious Problems Require Management Attention to Avoid Wasting Additional Millions," dated November 5, 1979 (FGMSD-80-4).
[34] Letter from Assistant Commissioner for Technical Assistance, Information Resource Management Service, General Services Administration to the Chairman, House Committee on Government Operations, dated June 6, 1989.

We found that the Navy did not fully test STAFS prior to its deployment in accordance with Defense policies. For example, the Navy's generic functional acceptance test was based on "dummy data" rather than actual transaction data that would correctly reflect the mix of work the centers perform. Additionally, according to STAFS program officials, the generic performance acceptance test did not use different transaction types, but rather ran a single transaction 10,000 times. These officials added that the system barely met the specification using this performance testing approach, and if a representative mix of different transactions had been used, this mix would have "brought the system down." [35]

Similarly, major AIS of other DOD components experienced testing problems that impacted costs and schedules. These include the Air Force's Requirements Data Bank (RDB) and the Army's Civilian Personnel System (ACPERS), both of which were examined at the Subcommittee's May 18, 1989 hearing.

The testing and quality assurance policies, procedures, and regulations in DOD are quite comprehensive. However, enforcement of these provisions range from weak to non-existent. As the GAO reported:

The Engineering Data Computer Assisted Retrieval System contract did not define design, analysis, and programming tasks; include milestone completion dates; or establish testing and periodic progress reporting.
The primary Contracting Data Management System contract did not require the contractor to develop a quality assurance program or prepare periodic progress reports, and did not include Air Force criteria for accepting the system.
The Requirements Data Bank contract did not identify future requirements for testing, meeting anticipated growth and requirements, and quality assurance. [36]

Weak testing and poor quality assurance practices extend to AIS programs essential to the effective operation of combat systems as well.
The GAO report on the fire control system necessary for the effective operation of the Navy's next generation submarine points out significant risks with the shortcuts that are being taken in the software testing area. [37] GAO stated that unstable software [38] could be the end result of some of the identified risks.

[35] Report to the Chairman, Subcommittee on Legislation and National Security, House Committee on Government Operations, "Computer Procurement: Decision Needed on Navy's Standard Automated Financial System," dated September 13, 1988 (GAO/IMTEC-88-47).
[36] Report to the Chairman, Committee on Government Operations, House of Representatives, "Air Force Computers: Development Risks of Logistics Modernization Program Can Be Reduced," dated May 15, 1987 GAO/IMTEC-87-19).
[37] Report to the Chairman, Subcommittee on Projection Forces and Regional Defense, Senate Committee on Armed Services, "Submarine Combat System: Technical Challenges Confronting Navy's Seawolf AN/BSY-2 Development" dated March 13, 1989 (GAO/IMTEC-89-35).
[38] Unstable software is a term supplied to software that is unpredictable, that may or may not perform as expected or may not produce consistent results when run against a known set of operating conditions.

The Department of Defense, Office of Inspector General found that contracts for mission critical computer resources did not always cite the current standards for software development and quality assurance. [39] Specifically, the software quality assurance standard was not invoked on nearly 40 percent of the contracts reviewed by the IG.
When Comptroller General Bowsher was asked about AIS testing during the May 18, 1989 hearing, he responded that:

• . . . I think that's where you'll have to be really rigorous in trying to determine whether you have a good design
. . . I think lots of times • . . • that's where you get a lot of wishful thinking. When the tests don't go too well, people say well, let's keep going. We can straighten it out later
• . . . that's where the MAISRC people that are serving on that oversight committee should be very rigorous in asking for explanations of how did the tests go, what were the problems and not just accepting explanations that these things can be fixed in the future.

Also during the May 18, 1989 hearing, Mr. John Caron, Assistant Commissioner for Technical Assistance with the General Services Administration pointed out that his office could have provided the technical support necessary to reduce the risks associated with testing as well as the other technical areas that are troublesome for project managers.
To help alleviate problems with testing, the House Armed Services Committee provided DOD with the following guidance:

The Comptroller of the Department of Defense and the Director of Operation Test and Evaluation (DOT&E) shall define a quality assurance process that will be mandatory for all DOD major automated information systems. Using this process DOT&E shall evaluate each major system for operational suitability prior to initial operational capability and final operational capability. [40]

The House Appropriations Committee [41] endorsed this guidance which was provided to the HASC by the Legislation and National Security Subcommittee of the House Government Operations Committee.

VII. SHORTAGE OF TECHNICAL PERSONNEL A MAJOR PROBLEM

A significant and recurring problem noted during committee hearings and emphasized in GAO reports is a general shortage of personnel with the requisite skills for these major AIS development and acquisition initiatives. GAO has consistently reported this as a problem. Comptroller General Bowsher stressed it as being one problem at the May 18 hearing particularly as it relates to individuals proficient in computer and telecommunications technologies.

[39] "Management of Software for Mission Critical Computer Resources," dated April 8, 1989, Office of the Inspector General, Department of Defense (No. 89-068).
[40] Report of the House Committee on Armed Services on the National Defense Authorization Act For Fiscal Years 1990-1991, House Report No. 101-121, July 1, 1989
[41] Report of the House Committee on Appropriations on the Department of Defense Appropriations Bill, 1990, House Report No. 101-208, August 1, 1989

1988/1989 budget submission Navy understated the estimated life cycle costs of three of its major automated information systems (IDAFIPS, NALCOMIS, and STAFS) by $788 million, $188 million, and $659 million respectively.[46] Although in each case the project office estimate was substantially higher than the amount reported in the budget submission there is no indication that the military department attempted to alert the Congress. For example, when Comptroller General Bowsher was asked whether the cost of STAFS had been adequately disclosed to the Congress, he responded "No, as we look back on the record, the 1988 1989 STAFS budget exhibit showed life-cycle costs of $183.8 million and apparently there was some intention to have the full position shown in a footnote which didn't quite get into the budget papers. So actually, the Congress is behind the curve you might say, on what the real costs of the system are and will be."[47] "The Committee strongly feels that this under reporting situation can not be allowed to continue in this time of large budget deficits.

There are many reasons why this situation occurs. The most obvious is the constant adjustment of the estimates as they progress through the organizational hierarchy (e.g., from project office to major command to military department staff to military department secretariat level to the Office of the Secretary of Defense). Other potential causes include: (1) the establishment of arbitrary cost caps by senior management; and (2) DOD not expeditiously updating the agency position.

The condition tends to put the Office of the Secretary of Defense, and in this case, the MAISRC in a very tenuous position. Former Undersecretary of Defense for Acquisition, Richard Godwin, has indicated that the key to effective oversight and control from the OSD level, is the establishment of a management information system that receives its data directly from the program or project office, not information that is filtered by other entities within the military department. Comptroller General Bowsher pointed out, that Mr. Godwin left DOD after trying to install a system "... • to know where things stood over there in the Defense Department and Major Weapons and the other programs. Obviously, he was not successful. He was disappointed and frustrated and he resigned."[48]

As GAO pointed out in its reports and testimony, the establishment of an early warning system to identify development problems before they become major catastrophes is essential. Such an early warning system would certainly be dependent on the quality and timeliness of information received from project offices.

IX. DOD IS STARTING TO TAKE CORRECTIVE ACTIONS

The Comptroller of the Department of Defense is in the process of pursuing several initiatives that should contribute to the resolution of some of the previously mentioned problem areas

[46] Report to the Chairman, Legislation and National Security Subcommittee, House Committee on Government Operations, "Automated Information Systems: Schedule Delays and Cost Overruns Plague DOD Systems," dated May 10, 1989 (GAO/IMTEC-89-36).
[47] Hearing, on "Management of the Department of Defense Automated Information Systems Acquisitions," before the Legislation and National Security Subcommittee, House Committee on Government Operations, 101st Congress, May 18, 1989
[48] Ibid, May 18,1989

Each of the other witnesses also acknowledged it as a problem. Although there are several causes for the problem such as, high demand—both government and industry, outdated Office of Personnel Management (OPM) classification series for information systems professionals, lack of training, and the lack of a modern work environment, many options exist to reduce the risks associated with it. An option described during the May 18, 1989 hearing is greater use of GSA's technical assistance program. Commissioner Caron indicated that although he has a significant number of DOD clients, none of the eight major AIS projects the Subcommittee reviewed, requested assistance from his office. Additionally, Mr. Caron stated "... most clients come to us because they indeed do have problems. They lack the expertise or the experience, or they are experiencing cost overruns, and I think that is a very good sign on the part of our clients to recognize that they have a problem and seek assistance."[42] Cynthia Kendall, Deputy Comptroller for IRM stated, "The computer specialist series ... used for most computer personnel in the Federal Government, is a non-professional classification series, and according to a recent GAO report ... the standards provided in the series do not reflect the diversity of today's highly complex computing environment, and they do not effectively provide for managerial positions."[43]

DOD submitted a new proposed job classification series for information systems managers to the Office of Personnel Management (OPM) in February 1987, and as of May 1989 had not received a response from OPM. On May 25, 1989, Congressman John Conyers, the Chairman and Congressman Frank Horton, Ranking Minority Member of the Legislation and National Security Subcommittee through formal correspondence[44] encouraged the Director of OPM to render a positive decision upon the DOD proposal. OPM informed the Subcommittee[45] that they were working with GSA and personnel specialists within DOD but currently there is no general consensus on the need for a new series. Subsequently, OPM representatives have indicated to the Subcommittee that they intend to continue negotiations with DOD.

VIII. MAISRC NEEDS MANAGEMENT INFORMATION, NOT A DATA DUMP

Currently, the Office of the Secretary of Defense (OSD) receives a considerable amount of information from the military departments and defense agencies at key milestones or in preparation for IPR's. However, the usefulness of much of this information for management oversight and control purposes is subject to debate. This is particularly true with cost information given the disparities identified in several Navy systems by GAO. For the amended fiscal year

[42] Hearing on "Management of the Department of Defense Automated Information Systems Acquisitions," before the Legislation and National Security Subcommittee, House Committee on Government Operations, 101st Congress, May 18, 1989.
[43] Ibid. May 18, 1989
[44] Letter from the Chairman and Ranking Minority Member of the Legislation and National Security Subcommittee, House Government Operations Committee to the Director-designate, Office of Personnel Management, May 25, 1989.
[45] Letter from the Director of OPM to the Chairman of the Legislation and National Security Subcommittee, House Government Operations Committee, July 14, 1989.

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(1) DOD has installed a quarterly reporting process for major automated information systems to improve cost and schedule visibility. However, this still does not get at the issue of filtered information. OSD needs information about the real situation on on a system not the military departments' position relative to the real situation.

(2) DOD has requested approval from the Office of Personnel Management (OPM) for an information systems manager job classification series to contribute towards the solution to the personnel problem associated with acquiring and retaining ADP technical specialists and managers.

(3) DOD has redesignated the Department of Defense Computer Institute (DODCI) as the Information Resources Management (IRM) College and placed it within the National Defense University. This college has been tasked to develop a full curriculum on IRM and a comprehensive course for prospective program and project managers of large automated information systems and telecommunication projects.

Other examples of DOD initiatives taken or planned include the updating of DOD automated information system life cycle management policies to provide more explicit direction to DOD components; definition of an early warning system and more rigorous MAISRC oversight of major automated information systems to ensure that future cost growth, schedule slippage and performance degradation is minimized.

All of the initiatives by DOD, taken collectively, suggest a recognition on the part of the Department (particularly, the DOD Comptroller) that better control is needed over the development and acquisition of automated information systems in DOD. There is no question that progress could be made toward reducing some of the problems if such initiatives are pursued aggressively. However, the Subcommittee investigation identified many problems that will not be resolved by these initiatives alone, therefore additional actions are clearly needed.

X. CONCLUSIONS

The Department of Defense has taken a number of actions aimed at correcting the problems that cause major automation projects to incur runaway costs and schedules, as well as performance shortfalls. However, it is clear that more or a different set of corrective actions are needed because those of the past have not significantly reduced the problem.

With respect to major automated information system cost growth, one of the driving factors that causes this situation is the failure to control the requirements of the system. Rather than restricting the project initially to those requirements that are mission essential and non-deferrable, there is a tendency to allow a "wish list" of non-essential capabilities to develop, thus making the project unnecessarily complex and more risky. Additionally, project managers frequently do not provide the Office of the Secretary of Defense (OSD) with relevant information of sufficient detail for OSD to effectively oversee and control these efforts.

Taking into account prior Congressional direction giving the MAISRC responsibility for overseeing all general purpose automated information system projects, this Committee endorses the present placement of the MAISRC within the Department of Defense (i.e., within the Comptroller of the Department of Defense).

The personnel initiative (i.e., creation of a professional Information Resource Management series) advocated by the DOD to OPM is a bold one that is endorsed by the Committee. Specifically, the Committee has written to the Office of Personnel Management requesting a status and favorable action on the DOD proposal. The Chairman of the Committee received a reply from the Director of the Office of Personnel Management (OPM) on July 14, indicating that OPM was still reviewing and coordinating information in order to make a government-wide decision on the DOD proposal.

A. FINDINGS

1. Cost growth in the eight systems reviewed is more than one billion dollars. Reasons for this growth include:

(a) The Office of the Secretary of Defense relying primarily on information (i.e., project status, cost, schedule, budget, etc.) forwarded through the chain of command as opposed to being accessible directly from the project office; (b) the MAISRC and the Congress continuing to be inadequately informed about costs, schedules, and benefits yielded by major AIS projects as well as performance shortfalls. This barrier to effective congressional and DOD oversight has resulted in the loss of at least $237 million spent before the cancellation of two major automated information systems.

2. Cost and benefit estimates for major automated information systems are usually not representative of the true cost and benefits. Reasons for this:

(a) Historical cost data for most initial estimates for large automated information systems is usually incomplete and inaccurate, thus making the initial estimates very unreliable.

(b) Individuals responsible for making the estimates are not always trained in industrial cost estimation techniques.

(c) Project office estimates are not always sent forward to the Office of the Secretary of Defense by military department managers.

3. Requirements for automated information systems are allowed to grow into wish lists instead of being restricted to those that are mission essential and non-deferrable resulting in cost increases and delays while contributing little or nothing to system capability.

4. Outdated Office of Personnel Management classification standards for information systems specialists and managers is one of the major reasons for difficulties in hiring and retention of needed technical talent.

B. RECOMMENDATIONS

The Committee recommends that the Secretary of Defense direct the Comptroller of DOD to:

1. Establish an early warning system for the development and acquisition of major AIS that:

(a) Offer the Secretary of Defense access to information at the project office level that shows where a major system stands at any point in time; and

(b) Key management and technical indicators based on information obtained directly from project offices.

2. Ensure that the MAISRC rigorously reviews major automated information systems and that the MAISRC decisions are reflected in DOD component budget reviews. MAISRC reviews should emphasize analysis of requirements, estimated costs and benefits, quality assurance and testing, and adherence to system engineering principles.

3. Ensure that Congress is provided with accurate and complete budget and status information on major automated information systems.

4. Retain the current MAISRC organizational structure within the Office of the Department of Defense Comptroller.

The Committee also recommends that the Director of the Office of Personnel Management give expeditious and favorable consideration to the DOD proposal to the Office of Personnel Management for a new information systems manager classification series and negotiate with DOD to ensure that an up to date series is put in place soon.

APPENDIX

GAO REPORTS ON AIS COST OVERRUNS AND SCHEDULE DELAYS

1. *Automated Information Systems: Schedule Delays and Cost Overruns Plague DOD Systems* (GAO/IMTEC-89-36, May 10, 1989).

2. *ADP Acquisition: Air Force Logistics Modernization Projects* (GAO/IMTEC-89-42, April 21, 1989).

3. *ADP Acquisition: Army Civilian Personnel System* (GAO/IMTEC-89-22FS, March 3, 1989).

4. *ADP Acquisition: Defense Logistics Services Center Modernization Program* (GAO/IMTEC-89-32, March 20, 1989).

5. *ADP Acquisition: Naval Aviation Logistics Command Management Information System* (GAO/IMTEC-89-20FS, February 23, 1989).

6. *ADP Acquisition: Navy's Efforts to Develop an Integrated Disbursing and Accounting System* (GAO/IMTEC-89-20FS, February 8, 1989).

APPENDIX H

HOUSE ARMED SERVICES COMMITTEE REPORT

This Congressional document criticizes ADP programs in DoD.

101st Congress 1st Session	HOUSE OF REPRESENTATIVES	Report 101-121

NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEARS 1990-1991

R E P O R T

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ON

H.R. 2461

together with

ADDITIONAL AND DISSENTING VIEWS

[Including cost estimate of the Congressional Budget Office]
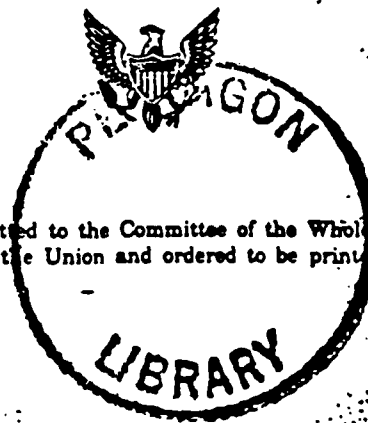
JULY 1, 1989.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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REVIEW OF UNIFIED AND SPECIFIED COMMAND HEADQU   RS

The Department of Defense Deputy Inspector General studied the Joint Chiefs of Staff organization, the unified and specified command headquarters and headquarters support activities and component commands. The study, which was completed in February 1988, was the subject of committee hearings during 1989. The General Accounting Office (GAO) recently reported that (1) a number of the study's recommendations were not accepted by DoD, and (2) most of the positions that were to be reduced were reallocated to other assignments rather than actually eliminated. In addition, the GAO noted that the spaces reduced often did not even relate to the positions recommended for elimination in the study.

The committee does not agree with DoD's action and directs that:

1. DoD submit a plan of action by January 1, 1990 on how—not if—and when it will implement the recommendations concerning elimination of the service components of the U.S. Transportation Command and the U.S. Space Command.

2. DoD reexamine the study's recommendations, identify those positions specifically recommended for elimination and present an action plan to reduce those positions by January 1, 1990.

The committee is reducing some civilian allocations for 1990 because of the savings to be achieved by these reductions:

[In millions of dollars]

Army	$12
Navy	6
Air Force	6

AUTOMATIC DATA PROCESSING

The Department of Defense plans to spend almost $9 billion on automatic data processing during 1990, with almost three-quarters of that amount coming from the operation and maintenance account. At the same time, the General Accounting Office, Department of Defense Inspector General and service audit agencies continue to issue a myriad of reports concerning the shortcomings in the DoD's automatic data processing management. These shortcomings run the gamut from poor performance on developing service-wide systems; inadequate management of installation software and hardware maintenance contracts; and development of service-unique administrative systems.

In the past, the DoD has given a high priority to automatic data processing, shifting substantial operation and maintenance resources over and above budget requests to these systems. During 1987 and 1988, for example, the Army spent over half a billion dollars over requested budgets for automatic data processing systems, many of them administrative in nature—personnel, logistics and financial management. This funding comes at the expense of other operation and maintenance accounts, including those directly related to readiness, like training and maintenance.

The DoD's automatic data processing program is in disarray and out of control. Rather than shifting additional resources into these

adminis... ve systems, the DoD should slow down automatic data process. evelopment and acquisition at all levels until it solves its problems. Accordingly, the committee recommends reducing the services' automatic data processing request by $165.5 million (Army—$105.5 million, Navy—$40 million, Air Force—$10 million and DoD Agencies—$10 million) and requires a plan of action by February 1, 1990 from the DoD on how to resolve its problems.

In addition, the following guidelines should be implemented by January 1, 1990:

1. Authorized funds may be obligated for major automated information system activities only after the appropriate prerequisite milestone has been approved by the Office of the Secretary of Defense's Major Automated Information System Review Council.

2. Economic analyses in support of major automated information systems shall be updated annually or for a major milestone review, whichever comes first. This updated information shall be incorporated into the Information Technology Exhibits that accompany the DoD budget submission to Congress. The office of the Assistant Secretary of Defense for Program Analysis and Evaluation shall validate the revised economic analyses.

3. Prior to the initial Major Automated Information System Review Council (MAISRC) milestone any major automated information system for administrative purposes—such as finance, personnel, and logistics—that is service-unique rather than multi-service must be reported to the committee.

4. Each major automated information system project manager shall establish a set of management indicators that relate directly to proposed functional improvements, shall be updated at least annually, and reported in the appropriate section of the Information Technology Exhibits to Congress with the annual budget submission.

5. The Comptroller of the Department of Defense and the Director of Operation Test and Evaluation (DOT&E) shall define a quality assurance process that will be mandatory for all DoD major automated information systems. Using this process DOT&E shall evaluate each major system for operational suitability prior to initial operational capability and final operational capability.

6. The Defense Acquisition Board (DAB) and the Comptroller of the Department of Defense shall jointly evaluate and report to Congress within 90 days on the feasibility of using the Major Automated Information System Review Council (MAISRC) to evaluate the progress of the computer resource subsystems (including embedded computer systems) of weapon systems at critical milestones. The MAISRC shall independently review the computer resource subsystems of weapon systems and provide a written report of their findings to the DAB.

STOCK FUND CASH BALANCES

The Department of Defense and military department stock funds operate as revolving funds, where inventory is acquired and held for sale to authorized customers. To ensure that sufficient cash is available to pay incoming bills from suppliers, the Department of

Defense has maintained 11 days of operating cash to accommodate fluctuations in revenue received from customers and ...yments made to vendors.

The desired cash level is achieved by adding a surcha... to the acquisition cost of inventory items in setting prices charged customers. For the Air Force stock fund, disbursements for 1 day are worth about $27 million, for an 11-day total of $297 million. Disbursements from the Army stock fund are worth $19 million per day, for an 11-day total of $209 million. Disbursements from the Department of Defense and Navy stock funds are valued in a similar manner.

In an April 1989 report to the Chairman of the Subcommittee on Defense of the House Appropriations Committee, the General Accounting Office concluded that the cash balance in the Air Force stock fund could be substantially reduced from the current 11-day cash target to approximately 3 days. Use of a 3-day cash target could reduce the needed budget authority of stock fund customers by over $215 million.

Although the stock funds obtain most of their funds by selling inventory items to their customers, they also receive appropriations from the Congress. For fiscal year 1990, the DoD has requested a total of $774 million for the four stock funds. These appropriations are used to purchase war reserve material and inventory items to support weapon system modernization and modification. The stock funds have only a single cash balance consisting of both the operating and appropriated cash amounts. When calculating the fund balance to cover stock fund cash needs, officials can use the appropriated funds, to the extent they remain available, to cover temporary cash shortages in the operating portion of the stock fund.

The committee agrees with the GAO that the current 11-day cash target could be substantially reduced. By combining the appropriated cash balances with the operating cash balance, the Department of Defense and the military departments should have sufficient funds to manage their cash needs during fiscal year 1990. Accordingly, the committee recommends a reduction in customers' budget authority of $113 million as shown below.

[In millions of dollars]

Army O&M	$27
Navy O&M	40
Air Force O&M	46
Total	$113

OFF-SHORE COMMISSARY PROCUREMENT

U.S. military commissaries in Europe purchase a variety of products from European sources. Congressional policy consistently encourages procurement of products from U.S. sources to the maximum extent practicable.

The European Community's ban on U.S. hormone-fed beef prompted an examination of the feasibility of having European commissaries purchase more products from U.S. sources. For example, U.S. beef is of higher quality and can be delivered fresh to

APPENDIX I

CIM MEMORANDUM

This memorandum officially established CIM.

4 OCT 1989

MEMORANDUM FOR   SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR, RESEARCH AND ENGINEERING
ASSISTANT SECRETARIES OF DEFENSE
COMPTROLLER
GENERAL COUNSEL
INSPECTOR GENERAL
DIRECTOR, OPERATIONAL TEST AND EVALUATION
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR, ADMINISTRATION AND MANAGEMENT
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: DoD Corporate Information Management

In order to reduce non-value-added work and costs, as highlighted by the Secretary's Report to the President on Defense Management, there appears to be a need to improve the standardization, quality, and consistency of data from DoD's multiple management information systems. More effective use of information systems must be a high priority.

Along these lines, DoD should not expend resources to develop and maintain multiple systems or software to meet the same functional requirements. To reduce unnecessary redundancy, common data requirements and formats must be developed, especially in those areas of most utility to the sound management of the entire Department. The successes in industry in developing integrated management information systems suggests that much can be done in DoD.

In order to evaluate the depth of this problem and to develop corrective measures as necessary, the following actions will be taken.

— An executive level group of outside experts and DoD officials will be established to:
(1)   recommend an overall approach and action plan to enhance the availability and standardization of information in common areas through a Corporate Information Management program for the DoD;
(2)   review the procedures of functional groups described below and, as needed, the products of the groups, including information requirements and data formats;
3)   review the processes and procedures used for overseeing the development of new information systems and software in DoD; and, where applicable,
4)   recommend corrective actions.

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- The Information Resources Management staff will draft a management plan, including a process guide for developing integrated management information systems.

- Upon completion of the guide, functional groups both in technical areas and in common business areas (e.g., inventory, warehousing, civilian personnel, financial management, civilian payroll, and contract payment) will be established. The groups will be led by OSD officials and should consist of Service and Defense Agency functional experts. The groups will support the executive level group and will:

    (1) review information requirements of the OSD, Services, and Defense Agencies and consider levels of compatibility and redundancy within each area; and
    (2) develop uniform and consistent information requirements and data formats within each functional area.

In the interim:

- Current life-cycle management principles and processes will remain in effect for automated information systems.

- The Major Automated Information System Review Council (MAISRC) will be established as a committee of the Defense Acquisition Board (DAB), with the DoD Comptroller as the chair. The DAB committee will continue to operate under current MAISRC procedures and will review all automated information systems and telecommunications programs prior to DAB meetings.

It is essential that the Department improve its information management to realize savings in both the $9 billion spent annually on information technology and in the DoD business areas these systems support. The total cooperation and commitment of your staffs will be required to achieve this high-priority effort.

Donald J. Atwood

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APPENDIX J

CIM LECTURE SLIDES

This document is a collection of slides which was used by the CIM director during her lecture at the Naval Postgraduate School. It contains the initial structure and purpose of the CIM initiative.

CORPORATE INFORMATION MANAGEMENT

CIM FUNCTIONAL GROUPS

Overview and Status

Belkis Leong-Hong

CORPORATE INFORMATION MANAGEMENT

FUNCTIONAL GROUPS

PROCESS

- Heavily business (functionally) oriented

- Focus on functional requirements based on a vision of the future for the business area

- First week in process, groups sequestered in a hotel, with purpose of:

  - Methodology training ,

  - Team building, and

  - Developing mission, policies and guiding principles and vision for the functional area

- Groups reconvene at a permanent location for duration of project

- Same structured methodology for all functional areas

- Software support to capture modelling results

- Groups produce standard functional requirements and specifications suitable for system design

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CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

PLANS (cont....)

- Develop technical strategies affecting all functional groups:

  - Overall model of DoD functions (Enterprise Model) to address cross-functional integration issues (e.g., linkages between payroll and Personnel, Materiel Management and Warehousing)-- effort has begun

  - Overall technical integration strategies for the functional areas, to include system architecture, ADP and communication -- effort has begun

  - Data standardization and consistent usage-- effort has begun

  - Overall DoD-wide information model and data model

  - Overall transition strategies for both functions and systems, from current to desired environment

CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

PLANS

- Materiel Management started on May 15, 1990

- Plans for two additional groups:

  - ●● Contract Payment   -- start date June 4, 1990

  - ●● Contracting (Procurement)   --TBS

- Identify new functional areas as candidates for CIM functional groups; some suggested areas include Military Pay and Technical Order Manual

- Once functional areas are approved, planning for these functional groups will begin

- Apply lessons learned to improve methodology and administrative process

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CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

LESSONS LEARNED

- Improvements in process guide needed
  - -- Improve consistency and linkages in process guide
- Changes to activities and events during initial week of training
  - -- More emphasis on the "big picture"
- Distribution of types, levels, and skills of participants not as expected
  - -- Augmentation of experts with right kind of experience, as needed
- Need for additional clerical support to functional groups
  - -- Add one clerk per group

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CORPORATE INFORMATION MANAGEMENT

FUNCTIONAL GROUPS

STATUS OF IMPLEMENTATION

- Two narrowly and well-defined functional groups chosen as prototypes: Civilian Payroll and Warehousing (Distribution Centers) Convened on Dec 11, 1989 for one week

  •• Process and methodology used

  •• Group participants were detailed from OSD Functional policy Office, Army, Navy, Air Force, Marine Corps, and Defense Logistics Agency

  •• About 33% of Services and Defense Agencies participants are from out-of-town

- Two groups reconvened at permanent location on January 16, 1990

- Financial Operations convened on March 7, 1990, followed same process, applied some lessons learned; reconvened on April 2, 1990

- Government Furnished Equipment was formed as an ad-hoc group in late January, will become a formal CIM group shortly

- Civilian Personnel convened on April 2, 1990, followed same process, applied some lessons learned; reconvened on April 22, 1990

- Medical Group convened on April 30, 1990

- Still undergoing growing pains: technically, administratively and logistically; we are learning from experience

PHASE I: FUNCTIONAL VISION

PHASE II: FUNCTIONAL BUSINESS PLAN

PHASE III: INFORMATION SYSTEMS STRATEGY

DESIGN

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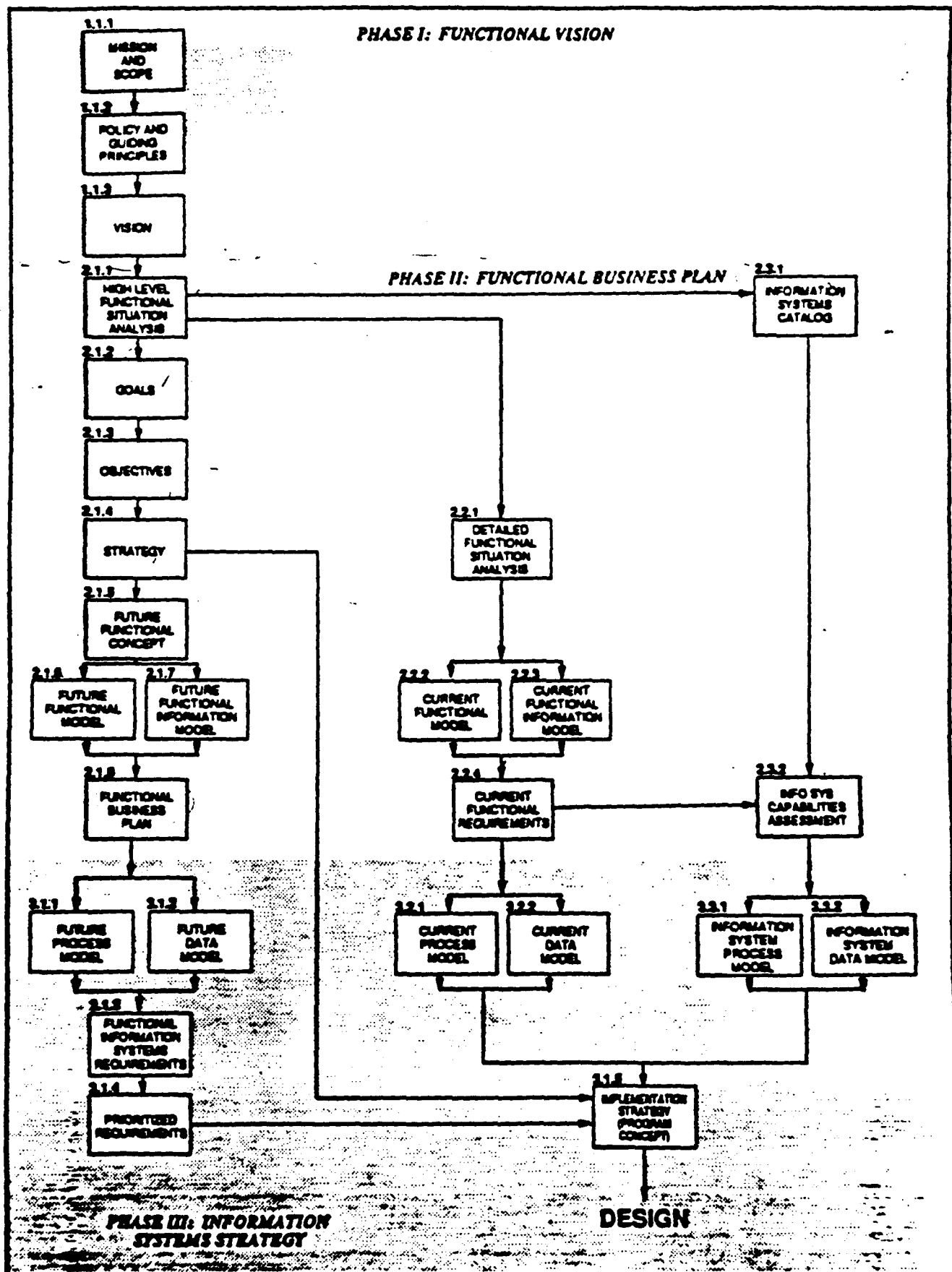
CORPORATE INFORMATION MANAGEMENT

FUNCTIONAL GROUPS

METHODOLOGY

- Specially developed to meet our needs

  - Spans entire process, from high level mission statement definition to detailed data and process modelling

  - No single commercial methodology available to do the entire job

  - Features of strategic planning, information engineering, data modelling, program analysis and evaluation

- Three phases:

  - I. Functional Vision

  - II. Functional Business Plan

  - III. Information System Strategy

- Some concurrent activities possible in phases II and III

- Methodology allows iteration and refinement

- Forces examination of business practices

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CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

FUNCTIONAL GROUP COMPOSITION

- Leader from the Office of the Secretary of Defense functional policy office

- Members from Army, Navy, Air Force, Marine Corps, and Defense Agencies

  - Experts in functional policy, operation, user/client, and systems

  - Participation on a full time basis, for duration of effort

- CIM functional information manager

- Professional facilitator

- Technical and administrative support

CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

OTHER DOD PARTICIPATION

- ## CIM COUNCIL

  - •• Chartered on January 24, 1990 to serve as single focal point within Components for obtaining participants in functional groups, and for discussing process and technical issues

  - •• Chaired by DC(IRM)

  - •• Participants from IRM community in Services and OSD

  - •• Meets bi-weekly

- ## FUNCTIONAL STEERING GROUP

  - •• Draft charter to resolve functional policy issues, to review and approve functional group products

  - •• Chaired by Senior Functional Official, at ASD level

  - •• Members from Components functional community

  - •• Permanent members also include Senior IRM Official, DC(IRM), Director of CIM, and the CIM functional group leader

  - •• Meets at key decision points in functional group's activities, or at least quarterly

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CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

CIM TASK FORCE

- Formulate technical and management concepts and strategies for functional groups

- Provide direction and coordination for the functional groups

- Resolve technical and functional issues affecting all the functional groups

- Provide administrative and logistical coordination and support for establishing all the functional groups

CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

OVERALL APPROACH

- Establish CIM Task Force to develop and implement functional group concept

- Establish functional groups for each identified area

- Emphasis on functional leadership and participation in the entire process

- Consistent process and methodology for all functional areas

- Each group's product: set of standard functional requirements and specifications

- Specifications to be used in developing a single standard information system to support that functional area, DoD-wide.

- Phased implementation approach

CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

COMPOSITION OF CIM (CORE) FUNCTIONAL GROUP

	CIVILIAN PAYROLL	DISTRIB. CENTERS	FINAN. OP'NS	CIVILIAN PERS.	MEDICAL	GFM	MAT'L MGMT	CONT PAY	TOTAL
OSD (Func'l)	3	2	4	2	1	1	1	2	16
OSD (CIM)	1	1	1	1	1	1	2	1	9
OASD				1	7				8
ARMY	3	4	7	4	8	1	8	3	38
NAVY	3	2	8	6	7	1	5	2	34
AIR FORCE	3	3	8	6	6	1	5	3	35
MARINE		1	1	1			2	1	6
JCS					1				1
DLA	3	3	5	5		1	10	5	32
DMA				1					1
WHS			1	1					2
FACILIT.	1	1	1	1	1	1	1	1	8
ADMIN	1		2	1	1		2	1	8
TOTAL (Permanent Members)	18	17	38	30	33	7	36.	19	198

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CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

FUNCTIONAL INFORMATION MANAGEMENT

- **Basic premise:** information systems must be responsive to functional policies and needs.

- **Determine requirements from a _functional perspective_**

- **Focus on individual functional areas. Eight areas initially:**

  - • Civilian Payroll

  - • Civilian Personnel

  - • Contract Payment

  - • Financial Operations

  - • Government Furnished Material

  - • Materiel Management

  - • Medical

  - • Warehousing (Distribution Center)

- **Eventually cover all administrative functional areas in DoD**

CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

IMPLEMENTATION OF CIM INITIATIVE

- Initiative is being implemented through two types of groups:

  ●● Executive level group (ELG) which addresses DoD-wide information management strategy

    -- Consists of 6 industry and 3 DoD executives

    -- Will examine the critical elements of DoD CIM

    -- Will evaluate current oversight practices, and

    -- Will review the procedures of the functional groups .

    -- ELG to be constituted as a Federal Advisory Council, reporting directly to the Deputy Secretary.

  ●● Functional groups will address functional (business) area information management.

    -- Consist of senior level Defense Components representatives

    -- Examine requirements from a functional point of view

    -- Seven groups will be set up initially: warehousing , civilian payroll, civilian personnel, financial management, materiel management, contract payment, and Medical

    -- Eventually will address all administrative functional areas in DoD

CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

BACKGROUND

- Corporate Information Management Initiative established Oct 4, 1989

  -- Initiative established Oct 4, 1989

  -- New CIM directorate established Oct 17, 1989, to implement new initiative

- Objectives of the initiative are:

  - •• To ensure the standardization, quality, and consistency of data from DoD's multiple management information systems.

  - •• To identify and implement management efficiencies in support of business areas throughout the information system life cycle

  - •• To eliminate duplication of efforts in the development of multiple information systems designed to meet a single functional requirement

- Two thrusts:

  - •• DoD-wide information management

  - •• Information management within each business area

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CORPORATE INFORMATION MANAGEMENT
FUNCTIONAL GROUPS

TOPICS

- Background
- Implementation of CIM Initiative
- Functional Information Management
- Overall Approach
- CIM Task Force
- Functional Group Composition
- Process
- Methodology
- Status of Implementation
- Lessons Learned
- Plans

APPENDIX K

DEPUTY SECRETARY OF DEFENSE BIOGRAPHY

This document is a biography of the Deputy Secretary of Defense, Mr. Donald J. Atwood.

Donald J. Atwood
Deputy Secretary of Defense

Donald J. Atwood was nominated by President Bush to be Deputy Secretary of Defense on January 29, 1989, was confirmed on April 19, 1989, and took the oath of office on April 24, 1989.

Before his nomination to be Deputy Secretary of Defense, Mr. Atwood was Vice Chairman of the Board of General Motors and President, Delco Electronics Corporation and GM Hughes Electronics.

Mr. Atwood was born May 25, 1924, in Haverhill, Massachusetts. He attended the Massachusetts Institute of Technology and was awarded Bachelor's and Master's degrees in Electrical Engineering. While at MIT, he was associated with the research work which pioneered the development of inertial guidance systems. In May 1988, Mr. Atwood received an Honorary Doctor of Engineering Degree from Rose-Hulman Institute of Technology. He served in the U.S. Army from 1943 to 1946.

Mr. Atwood joined General Motors in 1959 as an associate director of the Research and Development Laboratory of the AC Spark Plug Division. In 1961 he became director of the facility. In 1962 he was named Director of Engineering of the AC Spark Plug Division in Milwaukee, Wisconsin. In 1970, when the Detroit Diesel Engine and Allison Divisions were consolidated into the Detroit Diesel Allison Division, Mr. Atwood was named manager of the Indianapolis Operations.

In 1974 he became the first General Manager of GM's new Transportation Systems Division, and later that year was named General Manager of the Delco Electronics Division. In 1978 Mr. Atwood was named Vice President and General Manager of Detroit Diesel Allison Division. Three years later he was named Vice President and group Executive in Charge of the Electrical Components Group, and in November 1981, he was given responsibility for the worldwide Truck and Bus Group. In 1984 he was named Executive Vice President of the Corporation, and was elevated to the position of Vice Chairman of the Board in 1987.

Mr. Atwood has been active in many civic and industry related organizations. These include: Corporation of the Massachusetts Institute of Technology; the Board of Directors of the Charles Stark Draper Laboratory, Inc.; the National Academy of Engineering; the American Institute of Aeronautics and Astronautics; the Board of Directors of the Michigan Opera Theatre; and the National Executive Board of the Boy Scouts of America.

Mr. Atwood is married to the former Sue Harian, and has two children: Susan Atwood Lavoie and Donald J. Atwood III.

APPENDIX L

PROCESS GUIDE

This document is an internal CIM document which provides direction and guidance for the various CIM functional groups. It also discusses the three phases of CIM's process methodology.

PROCESS GUIDE

DECEMBER 1989

PROCESS GUIDE

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SECTION 1. BACKGROUND

On October 4, 1989, the Deputy Secretary of Defense established the Corporate Information Management initiative. The goals are to increase management efficiencies in the functions supporting DoD missions, improve the effective use of information systems in the Department, and reduce duplicative information systems supporting the same functional requirements. Key objectives are the standardization, quality, and consistency of data from DoD's multiple management information systems, the reduction of non-value-added work and costs, and the development of standard functional requirements and systems supporting the requirements.

Senior functional experts have the responsibility for reviewing the business practices of each DoD function and for the development of standard functional requirements to support the function. Therefore, functional groups are being constituted to:

* Develop a vision of the future preferred function.

* Review, evaluate, and, if necessary, revise the business practices and policies of the functional area.

* Develop information requirements for supporting the function.

* Define standard and consistent functional requirements for which standard, integrated information systems can be developed.

The participation and leadership of senior functional experts are key to arriving at a common, feasible and effective vision of the future, and for supporting that vision with consistent policies, practices, and related information systems. Inconsistent policies and procedures will inevitably be manifested by inconsistencies among the supporting information systems, a management inefficiency that cannot be tolerated in an era of shrinking resources.

SECTION 2. PURPOSE AND SCOPE

This Process Guide describes the steps in developing a functional business plan and information systems strategy, which include standard functional requirements; information systems requirements; and an implementation strategy. As presented in Exhibit 2-1, the steps are organized into three phases: The Functional Vision; The Functional Business Plan; and The Information Systems Strategy. The steps are linked by a methodology tailored to particular DoD requirements.

An overview of the process is presented in the following section. Details of the process methodology are contained in Appendix A, and a glossary of terms is included in Appendix B.

In addition to this Process Guide, each functional group will receive training on the methodology that will be employed. The training will include a walk-through of the steps. A facilitator and other support personnel will assist functional groups. The support personnel will have access to a variety of automated and manual tools to aid the groups' activities.

PHASE I: THE FUNCTIONAL VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

PHASE III: THE INFORMATION SYSTEMS STRATEGY
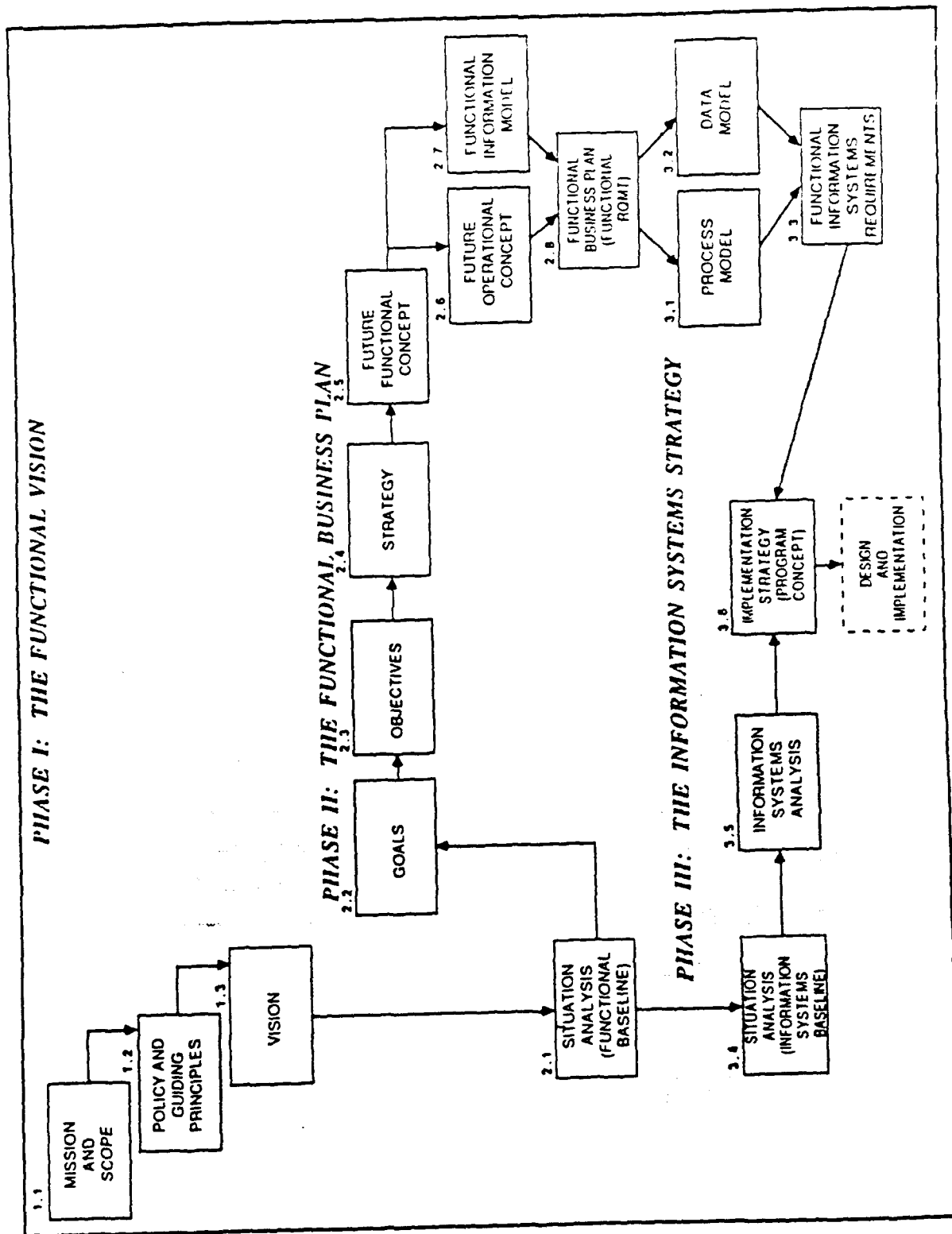
EXHIBIT 2-1. SEQUENCE OF STEPS

NOTE: ——→ Indicates Sequence of Steps

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SECTION 3. PROCESS OVERVIEW

The process can be logically thought of as three major areas of activities: the functional vision, the functional business plan, and the information systems strategy.

The Functional Vision

The functional vision provides the future perspective or 'target' for the function. Specifically it is the vision of what the function will be and what its major characteristics will be 10 years in the future. The vision is expressed as vision elements, or brief statements which clearly communicate the function's identity in the future. The vision is supported through development of policy and guiding principles that will lead the function into the 21st century, as well as the function's mission statement, scope and definition.

The Functional Business Plan

The functional business plan contains the functional business requirements for the future and specifies the actions that must be accomplished to transition the function from its current state to the desired future state. The current state of the function is identified through a baseline analysis of the prevailing processes and business methods and practices. The desired future state is defined in detail by successive refinement of the vision elements through goals, objectives and strategies into specific processes and business methods and practices for the future. The business plan includes the function's information requirements. They provide a basis for developing the strategy for implementing the information system(s) that will be needed to support the function in the future.

The Information Systems Strategy

The information system strategy is the set of actions, milestones and procedures that will be applied to transition from the information

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system(s) that currently support the function to the standard information system(s) that will support the function in the future. The strategy is derived principally from an assessment of the functionality of current systems, and comparison of that functionality to the functional requirements of the future. The selected strategy might range from the extremes of adopting a current system without modification to complete system redesign. The actual implementation of the strategy is beyond the scope of this process.

The following pages provide an overview of each of the seventeen steps that are included in the process from Step 1.1, Mission and Scope, to Step 3.6, Implementation Strategy (Program Concept).

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PHASE II: THE FUNCTIONAL BUSINESS PLAN

PHASE III: THE INFORMATION SYSTEMS STRATEGY

SEQUENCE OF STEPS

NOTE: ——— ▶ Indicates Sequence of Steps

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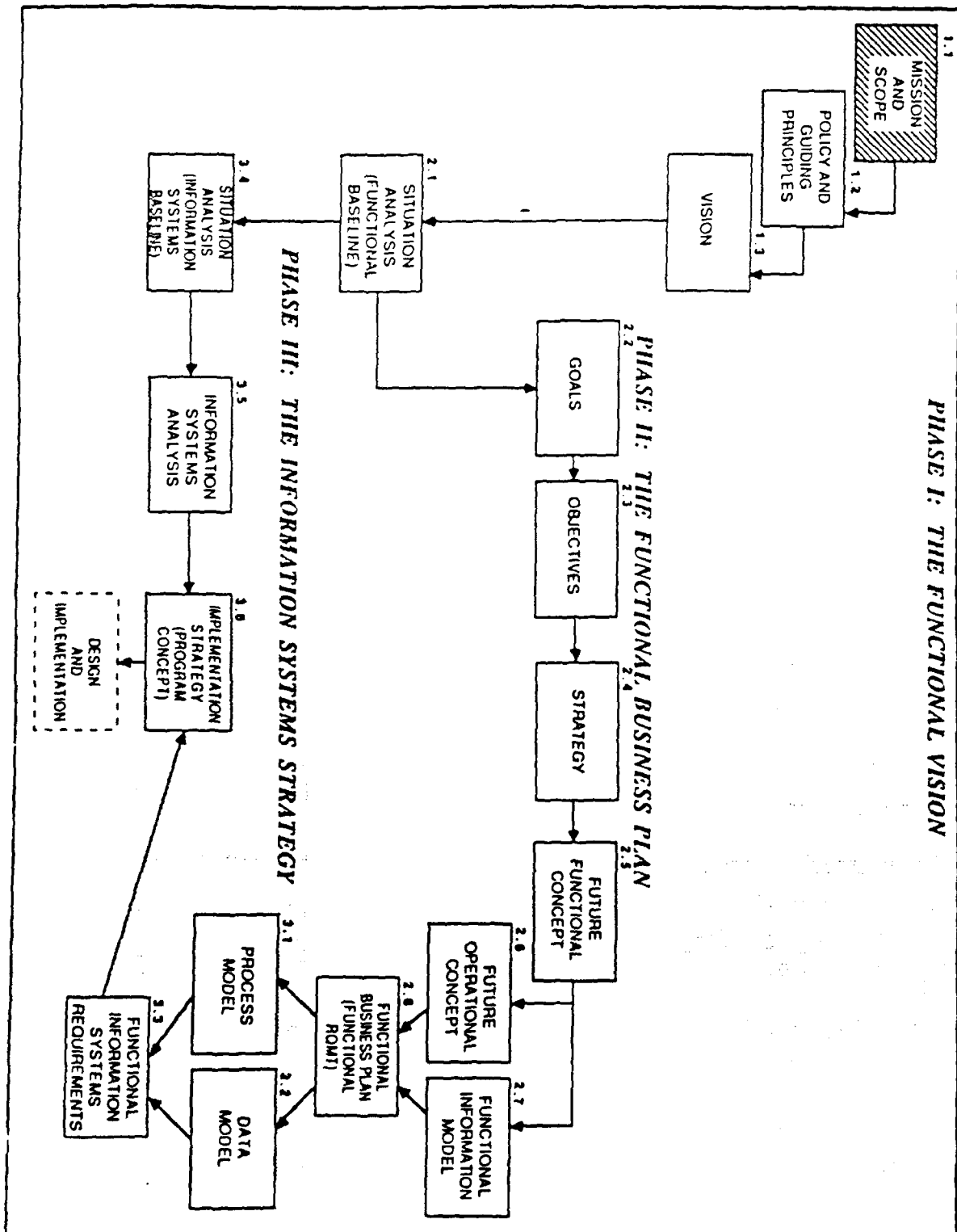
Process Model.

A detailed graphical portrayal of the processes, data stores, and data flows within a function, and the interfaces to other functions.

Strategic Implementation Plan.

The final planning product comprised of alternative models, each of which addresses how to implement a recommendation or cluster of recommendations. The strategic implementation plan can include a set of updated architectures that describe the alternative models, and configuration summaries, which include a system or configuration diagram, a statement of the scope of the proposed implementation, and preliminary equipment and labor cost estimates.

Strategic Planning.

A structured process that produces an integrated plan of action for accomplishing the organization's missions and objectives over a 5-year or longer period. Automated information systems (AIS) strategic planning develops and documents the agency's direction and specifies the AIS programs and resources requirements necessary to support stated missions and objectives.

Vision.

The high level conceptualization of what a function must be in the future and the major characteristics it will possess. The vision is expressed in a series of brief, narrative statements called vision elements.

Information System.

The means of transforming data into information in a business. It can include both automated or manual systems.

Logical Process.

On a data flow diagram, a logical process describes the work performed to transform incoming data flows into outgoing data flows. A logical process is stated to eliminate any physical, or implementation-dependent characteristics, from the model.

Objective.

A statement that explains specifically where DoD must be at various points in time if it is to accomplish its goals. Objectives are designed to permit quantitative measurement of progress in achieving goals.

Object of Interest.

1. Something that must be managed or otherwise considered in order to execute the business activities and processes of a function. Employees, goods and services, and customers are examples.

2. [See also Data Entity]

Process.

1. The organization of people, materials, energy, equipment and procedures into work activities designed to produce a specified end result or work product.

2. [See also Business Activity]

Functional Business Plan.

The collection of time-phased actions that must be accomplished in order to achieve the objectives, goals and vision for the function.

Functional Information Model.

A high-level snap-shot of the organizations, processes and data flows within a function.

Future Functional Concept.

A conceptual model of the function as it will be in the future, expressed through defining the processes it will include.

Future Operational Concept.

The detailed model of the function in the future expressed in terms of the future processes and future business methods and practices.

Goal.

The desired state that must be achieved in order to attain the vision of the future.

Guiding Principle.

A brief, declarative statement that expresses some aspect of the management philosophy.

Information Class.

A logical grouping of information and data that is required to execute a process.

Cardinality.

Cardinality describes the quantitative relationship between data entities. It may be expressed in one of three ways: one-to-one, one-to-many, or many-to-many.

Corporate Information Management.

A coordinated, planned approach to information management that is driven by corporate functional policy and integrated business methods, implemented by consistent functional data models and information systems.

Data Entity.

1. A person, place, thing or concept about which data must be collected and stored.

2. [See also *Object of Interest*]

Data Model.

A graphic depiction of the data entities and the substantive relationships among those entities.

Functional Analysis.

An assessment of the functions, processes, and data flows of a business. Functions are the way that a business entity translates its goals and objectives into business products; processes are those actions and decisions required to manage and execute the function. Functions, processes, and data flows are identified in a functional information model.

APPENDIX B

GLOSSARY OF TERMS

Attribute.

A characteristic of a person, place, thing or concept. For example, an attribute of an employee is that the employee has a Social Security Account Number.

Business Activity.

1. A collection of decisions and actions required to operate or manage some aspect of the business or function.

2. [See also Process]

Business Information Model.

1. The Business Information Model is a high-level snap-shot of the organizational and functional structures within a business. It is a graphical model that depicts the processes, systems, and data within the functions, and the information flow between business functions, systems, and/or organizations.

2. [See also Functional Information Model]

Business Methods.

Business methods are the formal way in which business is conducted. Culture is an informal overlay over them. Business methods and culture together fully describe the way business operates. Redefinition of business methods will result in simpler, integrated business methods that all operating groups and staff can support. (These are also referred to as business practices.)

3.3 THE INFORMATION SYSTEMS STRATEGY PHASE

Purpose:

The purpose of this phase is to develop the strategy for efficiently and effectively providing information systems support for the function.

Description:

The analyses within this phase will proceed on two parallel paths. The functional requirements for information systems, identified in the previous phase, will be modeled in detail using data flow diagramming (process modeling) and entity-relationship diagramming (data modeling). Simultaneously, a systematic analysis of existing information systems will be conducted to identify their functionality and the degree to which existing systems meet the new requirements. Finally, the strategy for implementing supporting information system(s) will be developed to include the transition plan, actions and milestones.

This phase includes six steps. The analytical techniques used in this phase include methods drawn from information engineering, information systems analysis, and information systems strategic planning.

Outputs and Relationships:

- Information systems implementation strategy.

The outputs of this phase will be used as a basis for implementing the necessary information systems.

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3.2 THE FUNCTIONAL BUSINESS PLAN PHASE

Purpose:

The purpose of this phase is to define the collection of actions that must be taken to transition the function from its current state to its desired future state, and to formally document the business requirements for the function.

Description:

The first step of this phase provides for a thorough analysis of the current state of the function in terms of its processes, organizational structures, and business methods and practices. The analysis will proceed through several steps to define the goals, objectives and strategy for the function. Then the future functional concept and future operational concept will be developed to provide definition for the future processes and business methods. Finally, the business plan will be formulated. It will contain specific actions that must be taken to transition the function from its current state to its desired future state.

This phase includes eight steps. The analytic methods applicable to this phase include techniques from strategic business planning, business systems planning, information engineering, and program evaluation and review techniques (PERT).

Outputs and Relationships:

- The functional business plan.

The plan will provide formal documentation of the various business requirements for the function. Those requirements that apply to information systems will be used in the next phase to develop the strategy to implement the information system(s) needed to support the function in the future.

3.   PHASE DESCRIPTIONS

3.1   THE FUNCTIONAL VISION PHASE

Purpose:

The purpose of this phase is to develop and articulate the visionary perspective of the function 10 years in the future.

Description:

This phase provides for first developing the mission statement for the function. Then a clear definition of the function will be developed by specifying the business activities which are included within it. The definition and mission statement prescribe the scope of the function, and the scope for the work effort for all three phases. Governing policy, regulations and statutes will then be identified, and prevailing business trends will be analyzed so the future environment for the function can be predicted and policy can be redirected as necessary. Next, the management philosophy will be formulated and expressed as a series of brief, declarative statements that communicate the essence of the philosophy. Finally, the vision of the future for the function will be developed and expressed as a set of declarative statements called vision elements.

This phase consists of three steps. The analytic techniques used during this phase are customized from proven strategic business planning methods.

Outputs and Relationships:

- The functional vision.

This phase provides the scope and direction for the entire work effort.

The three phases are described in the next section. The balance of this guide describes each step and its tasks and subtasks.

PHASE I: THE FUNCTIONAL VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

PHASE III: THE INFORMATION SYSTEMS STRATEGY
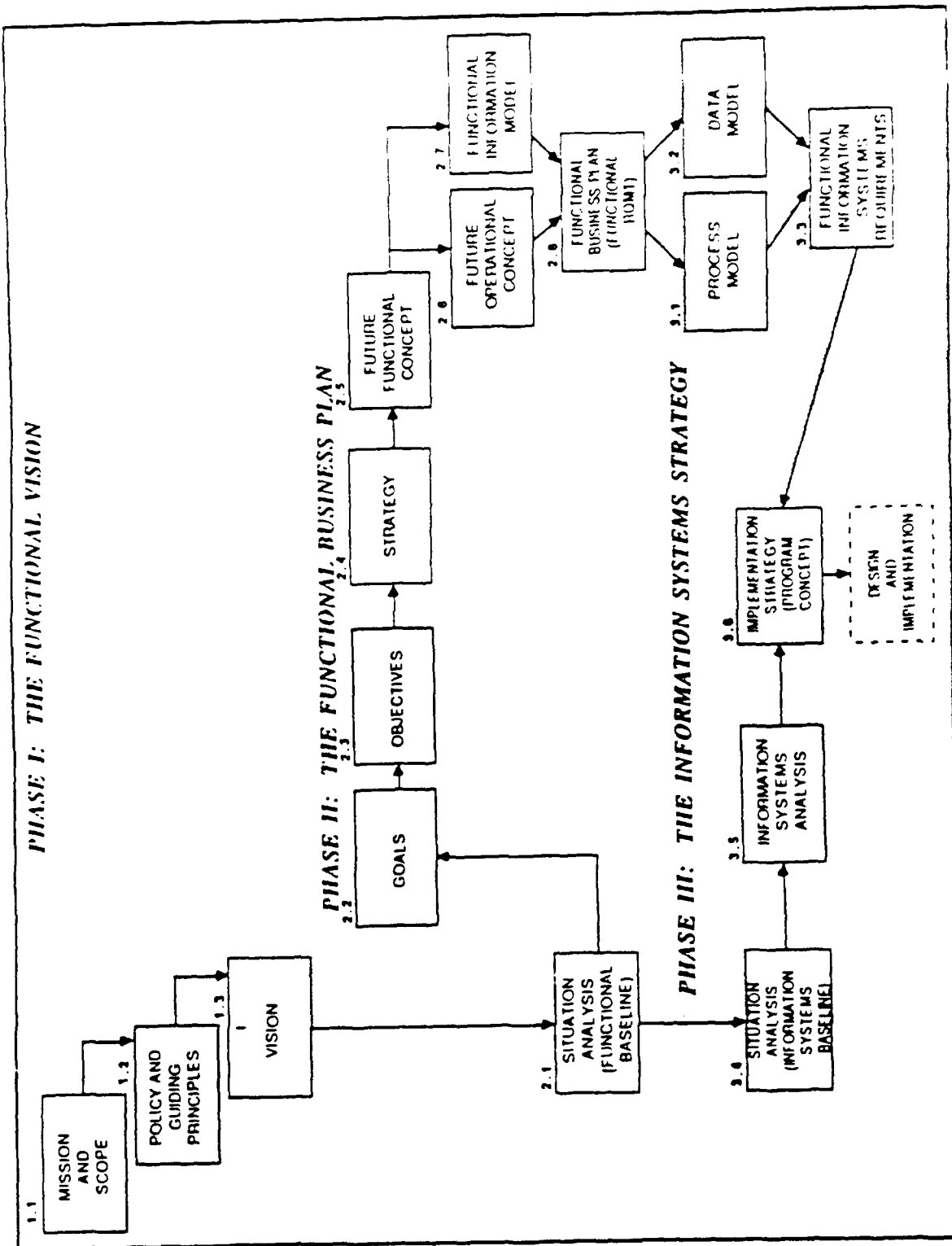
EXHIBIT A-1. SEQUENCE OF STEPS

NOTE: ⟶ Indicates Sequence of Steps

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APPENDIX A

PROCESS METHODOLOGY

1. PURPOSE AND SCOPE

This Appendix describes in detail the methodology for developing the functional vision, functional business plan, and the strategy for implementing the supporting information systems. This is the user guide for those who will implement the methodology. The guide:

- Describes the phases, steps, tasks and subtasks,

- Explains the analytical approach that applies to each; and

- Specifies the required outputs.

Forms, other work aids, and examples of outputs are also included.

This guide is intended for use by senior DOD employees who are experts in the business functions of the Department, and who will be:

- Working in groups with other functional experts, and

- Supported by technical methodology advisors and automated tools.

2. ORGANIZATION

The methodology provides for three phases, each consisting of three or more steps, as illustrated in Exhibit A-1. Each step includes two or more tasks which may in turn include several subtasks. The hierarchial Work Breakdown Structure is:

- Phase.

- Step.

- Task.

- Subtask.

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SEQUENCE OF STEPS

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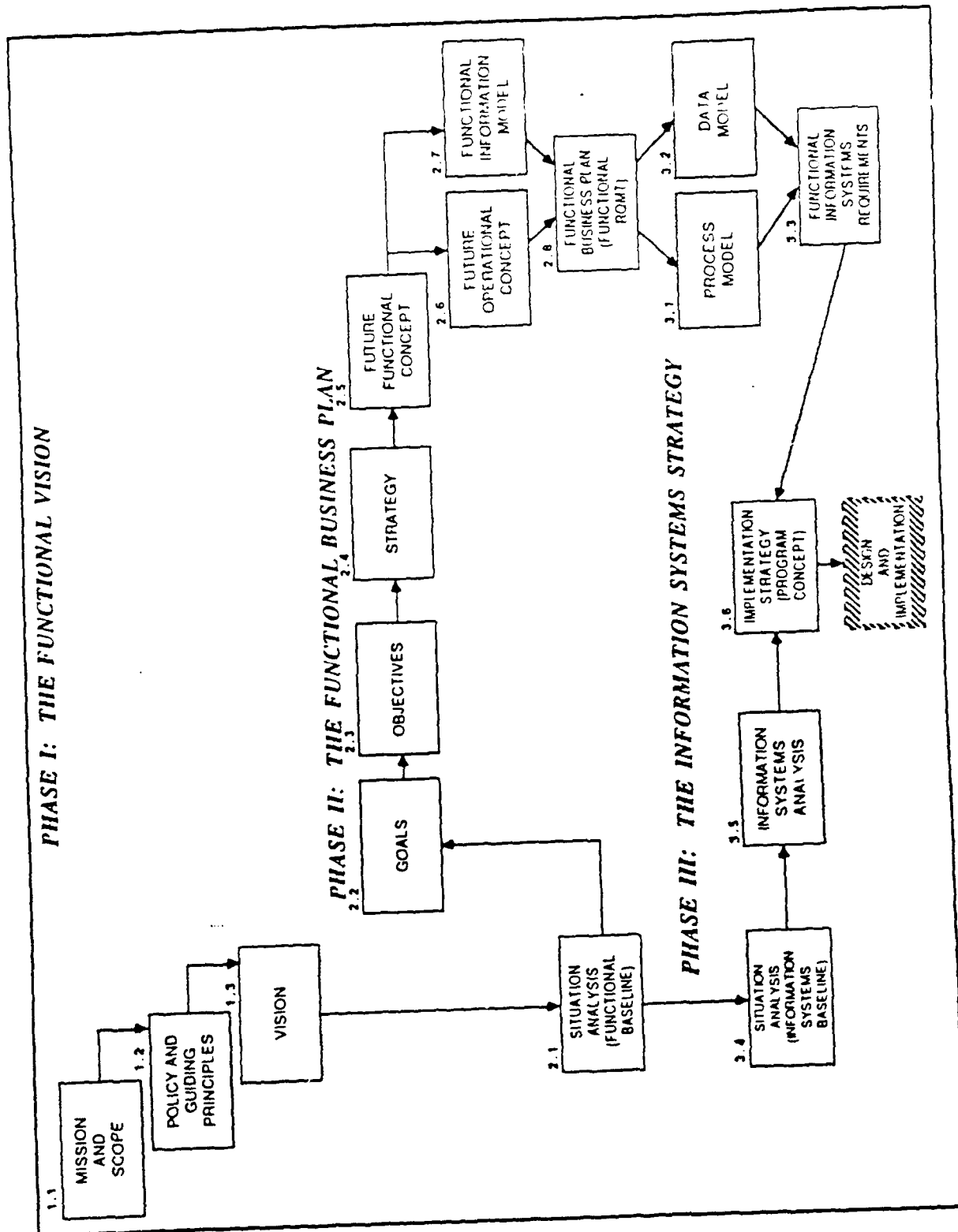
STEP 3.6 IMPLEMENTATION STRATEGY (PROGRAM CONCEPT)

Purpose:

The purpose of this step is to develop an implementation strategy/ program concept that will provide the necessary information systems to meet the vision and satisfy the functional information systems requirements.

Description:

The functional group will determine the adequacy of current and planned information systems to satisfy future information systems requirements. This determination will be accomplished by comparing the "best" current and planned information systems, which were identified in Step 3.5, with the future functional information systems requirements from Step 3.3. The functional group will then develop implementation decisions and priorities for information systems efforts. The group will also develop an implementation transition plan that will designate how the functional area will migrate from today's information systems to those that are required for the future.

Outputs and Relationships:

- Implementation decisions.

- Implementation Transition Plan.

The implementation decisions and transition plan comprise the implementation strategy or program concept.

PHASE I: THE FUNCTIONAL VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

PHASE III: THE INFORMATION SYSTEMS STRATEGY

1.1 MISSION AND SCOPE

1.2 POLICY AND GUIDING PRINCIPLES

1.3 VISION

2.1 SITUATION ANALYSIS (FUNCTIONAL BASELINE)

2.2 GOALS

2.3 OBJECTIVES

2.4 STRATEGY

2.5 FUTURE FUNCTIONAL CONCEPT

2.6 FUTURE OPERATIONAL CONCEPT

2.7 FUNCTIONAL INFORMATION MODEL

2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL RQMT)

3.1 PROCESS MODEL

3.2 DATA MODEL

3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

3.5 INFORMATION SYSTEMS ANALYSIS

3.6 IMPLEMENTATION STRATEGY (PROGRAM CONCEPT)

DESIGN AND IMPLEMENTATION

SEQUENCE OF STEPS

NOTE: ⟶ Indicates Sequence of Steps

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STEP 3.5 INFORMATION SYSTEMS ANALYSIS

Purpose:

The purpose of this step is to evaluate the current or planned DoD information systems in the functional area to identify approximately five systems for which to perform a detailed comparative analysis.

Description:

The functional group will perform a systematic review of the systems identified in the baseline to determine which ones are worthy of further analysis. The review will apply criteria such as technical architecture, last systems modernization, modularity, recent maintenance costs, and portability. Other deficiencies and constraints associated with current systems will also be considered. A detailed analysis of the systems with the highest probability of being able to support the functional information systems requirements will then be completed in the next step.

Outputs and Relationships:

- List of approximately five systems that will be used for comparative analysis in the next step.

The results of the analysis will be documented in a set of tables comparing the systems on the criteria developed by the functional group.

The results of this step will be used in the next step to perform a detailed analysis to help the functional group formulate recommended information systems strategies for the function.

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PHASE I: THE FUNCTIONAL VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

PHASE III: THE INFORMATION SYSTEMS STRATEGY

1.1 MISSION AND SCOPE

1.2 POLICY AND GUIDING PRINCIPLES

1.3 VISION

2.1 SITUATION ANALYSIS (FUNCTIONAL BASELINE)

2.2 GOALS

2.3 OBJECTIVES

2.4 STRATEGY

2.5 FUTURE FUNCTIONAL CONCEPT

2.6 FUTURE OPERATIONAL CONCEPT

2.7 FUNCTIONAL INFORMATION MODEL

2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL RQMT)

3.1 PROCESS MODEL

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3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

3.5 INFORMATION SYSTEMS ANALYSIS

3.6 IMPLEMENTATION STRATEGY (PROGRAM CONCEPT)

DESIGN AND IMPLEMENTATION

SEQUENCE OF STEPS

NOTE: ──────▶ Indicates Sequence of Steps

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STEP 3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

Purpose:

The purpose of this step is to describe the current information systems environment under which the function is executed and to determine the number and general capabilities of the current and planned information systems that are supporting this function.

Description:

The Situation Analysis (Information Systems Baseline) will be a collateral step to the Situation Analysis (Functional Baseline). By using the previously described current business environment, the work group will develop descriptions of the current information systems environment. The functional group will review current business processes that were documented in Step 2.1 and identify the current and planned information systems that are supporting the execution of these processes. The group will then completely describe these current and planned information systems, to include the proponent agency for the system, functionalities, major modules, primary products, technical architecture, sources of data, interfaces, applied standards and costs of operations.

Outputs and Relationships:

- An Information Systems Baseline Catalog

This catalog will be used in the analysis of the current information systems and in developing a cost effective implementation strategy to meet the vision and functional information systems requirements.

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PHASE I: THE FUNCTIONAL VISION

1.1 MISSION AND SCOPE

1.2 POLICY AND GUIDING PRINCIPLES

1.3 VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

2.1 SITUATION ANALYSIS (FUNCTIONAL BASELINE)

2.2 GOALS

2.3 OBJECTIVES

2.4 STRATEGY

2.5 FUTURE FUNCTIONAL CONCEPT

2.6 FUTURE OPERATIONAL CONCEPT

2.7 FUNCTIONAL INFORMATION MODEL

2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL RQMT)

PHASE III: THE INFORMATION SYSTEMS STRATEGY

3.1 PROCESS MODEL

3.2 DATA MODEL

3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

3.5 INFORMATION SYSTEMS ANALYSIS

3.6 IMPLEMENTATION STRATEGY (PROGRAM CONCEPT)

DESIGN AND IMPLEMENTATION

SEQUENCE OF STEPS

NOTE: ———▶ Indicates Sequence of Steps

STEP 3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

Purpose:

The purpose of this step is to develop the future functional information systems requirements that are needed to fulfill the Vision and to support functional users.

Description:

Functional information systems requirements will be developed by executing four tasks, using input from the process model, data model and Functional Business Plan. These four tasks are:

- Describe Improvements Sought.

- Identify Future Applications.

- Describe Future Functional Information Systems Requirements.

- Review and Document.

The information contained in the outputs from these tasks will constitute the functional information systems requirements and will be the means by which the functional managers/users communicate with the technicians who will design the information systems that will satisfy these requirements.

Outputs and Relationships:

- Description of the nature and benefits of the improvements sought in the information systems support of the function.

- Description of the future functional information systems requirements.

The future functional information systems requirements will be used in the next step to determine the implementation strategy (program concept).

PHASE I: THE FUNCTIONAL VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

PHASE III: THE INFORMATION SYSTEMS STRATEGY

SEQUENCE OF STEPS

NOTE: ——▶ Indicates Sequence of Steps

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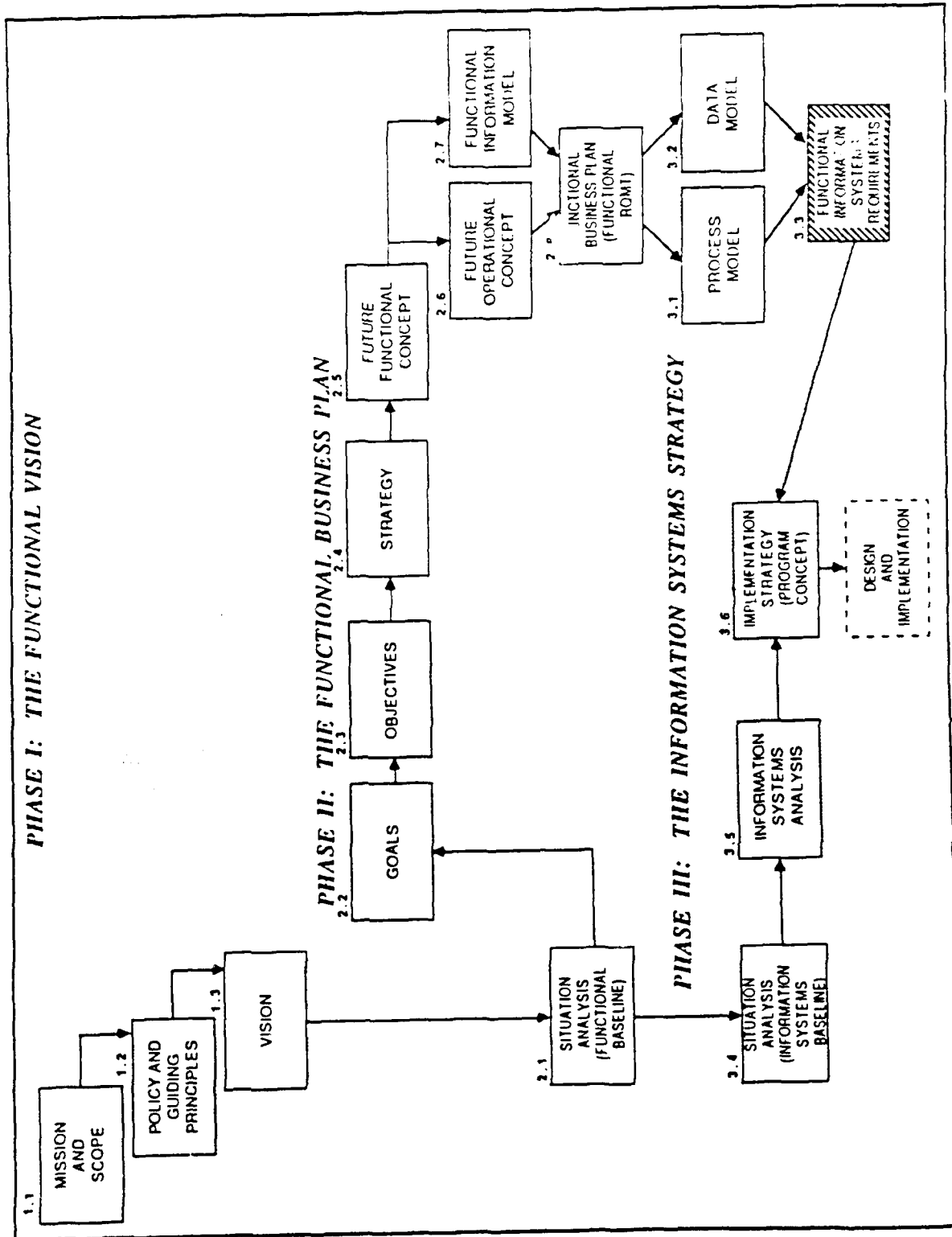
STEP 3.2 DATA MODEL

Purpose:

   The purpose of this step is to analyze and model the data requirements of the function.

Description:

   The functional group will focus on the data necessary for the successful execution of the function. A data model will be produced that reflects the data (in terms of data entities) and the relationships among that data. The data model provides a standard way to communicate and to understand the meaning of the functional data. It captures the types of data used in the function, defines each data entity in detail, identifies relationships, and develops standard definitions.

   The work in this step may be accomplished simultaneously with the step that does a detailed analysis of the functional processes (Process Model). When data are created by a process external to this functional area, assumptions will be made that the external functional area will have arrived at the data in the same consistent manner, that we can label the source of the data as the external process, and that standard definitions and usage will be supplied by the external source.

Outputs and Relationships:

   • Data model

   The graphical representation of the data requirements, their descriptions and a list of logical data elements will be the primary output of this step. The data model will be used in the next step to support the functional information systems requirements and can also be used as a first step in designing supporting databases.

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PHASE III: THE INFORMATION SYSTEMS STRATEGY

SEQUENCE OF STEPS

NOTE: ———▶ *Indicates Sequence of Steps*

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STEP 3.1 PROCESS MODEL

Purpose:

The purpose of this step is to define the logical processes required to support the functional area, and then to decompose the processes to greater levels of detail. Both the details of the processes and the flow of data among the processes are portrayed graphically.

Description:

The logical processes will be analyzed and portrayed graphically in charts presenting the flow and processing of information, the storage of information, and external agents and interfaces. It is important to understand that although the process model and the data model are depicted as two separate steps, they are highly interrelated, and as the processes are defined in greater detail, the data requirements to perform the processes will also be defined in greater detail. Data coming in from other functional areas as input will be specifically identified, and likewise, data that result from the particular process, flowing into other functional areas, will be specifically labeled.

Outputs and Relationships:

- Process model

The detailed descriptions of the logical processes in the form of diagrams are the primary outputs of this step. The logical process model is used to document functional requirements, and can also be used as a first step in designing supporting information systems.

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PHASE I: THE FUNCTIONAL VISION

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PHASE III: THE INFORMATION SYSTEMS STRATEGY

SEQUENCE OF STEPS

NOTE: ——→ Indicates Sequence of Steps

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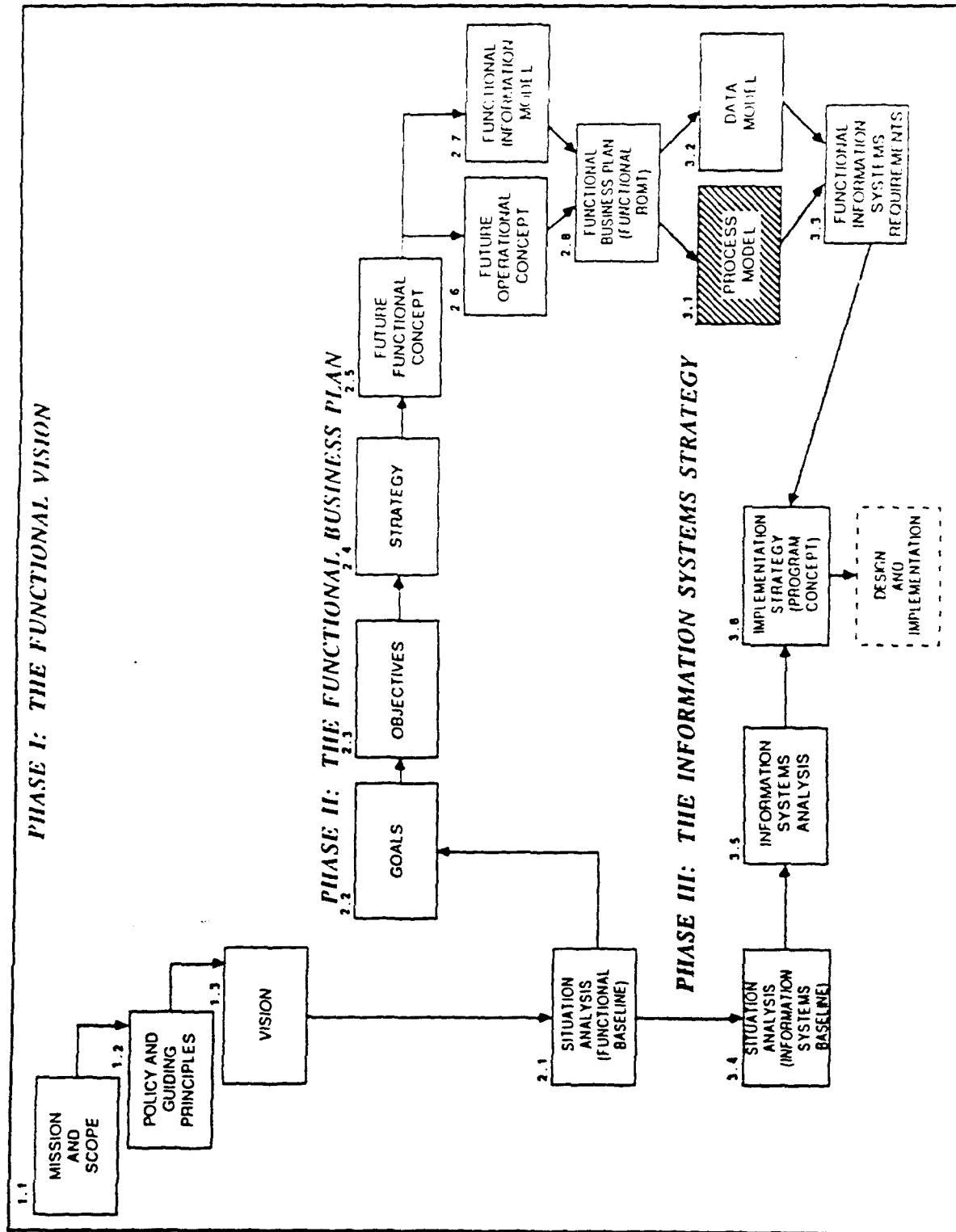
STEP 2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL REQUIREMENTS)

Purpose:

The purpose of this step is to develop a set of time-phased actions required to transition to the future, assign responsibilities for accomplishing the actions and to prepare the Functional Business Plan Report.

Description:

The functional group will first develop the action plan consisting of the time-phased actions, and assign responsible agencies to accomplish each action. The action plan will be developed using program evaluation and review techniques (PERT) supported by automated tools. The Functional Business Plan Report will then be prepared. It will contain the major products of the Functional Vision Phase and the Functional Business Plan Phase as well as the action plan.

Outputs and Relationships:

- PERT chart of actions required.

- Functional business requirements.

- Functional business plan report.

The information requirements contained in the report will be used in the next phase to develop the implementation strategy for the support information system(s).

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PHASE I: THE FUNCTIONAL VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

PHASE III: THE INFORMATION SYSTEMS STRATEGY

SEQUENCE OF STEPS

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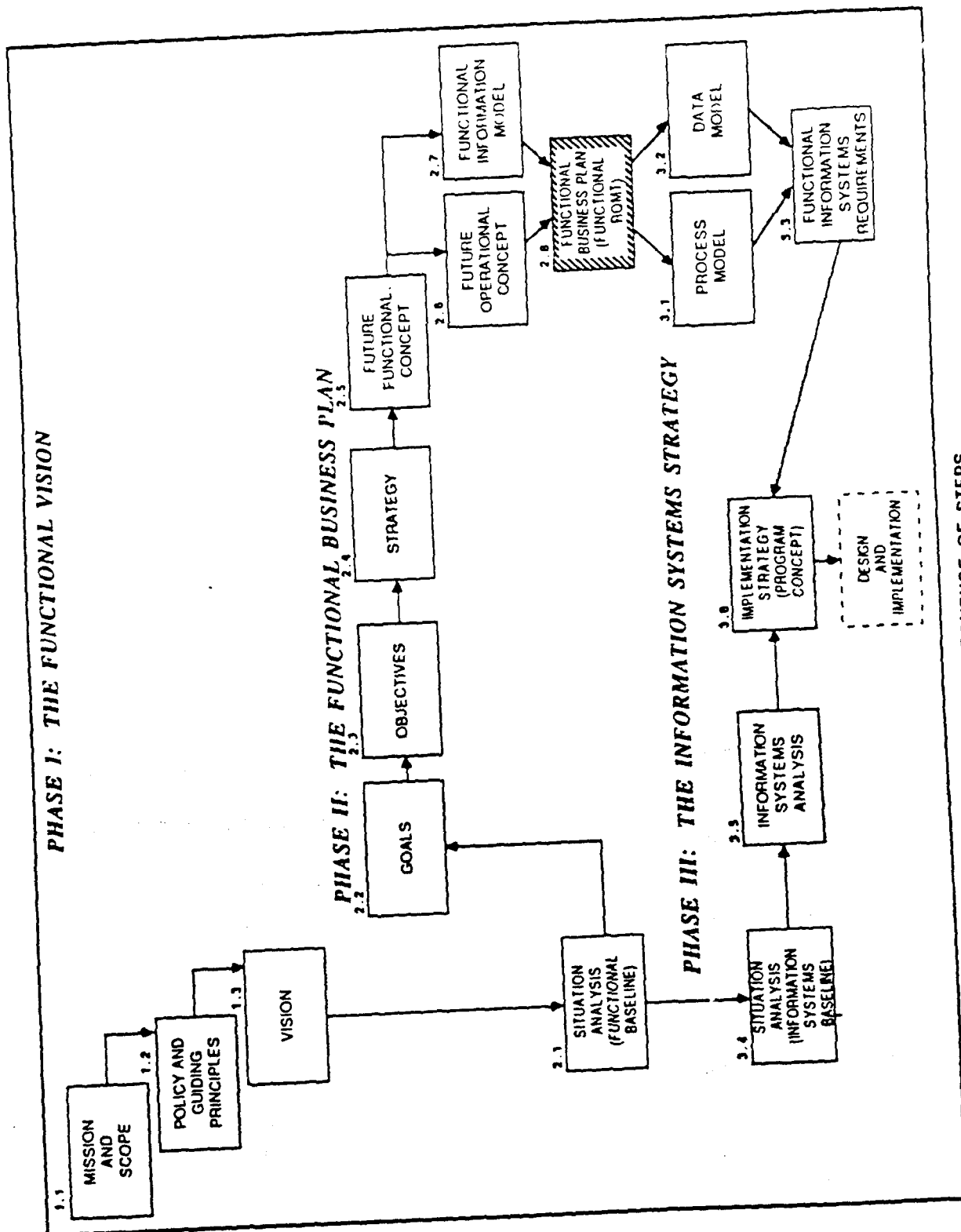
STEP 2.7 FUNCTIONAL INFORMATION MODEL

Purpose:

The purpose of this step is to focus the functional group on the information required to execute the function in the future. The information requirements, i.e., logical groups of data supporting the functions, are identified. This step will employ outputs from the Future Functional Concept step so that a complete picture, both process and information, is analyzed.

Description:

During this step, the functional group will define the information classes that are needed to conduct each process, both what the process needs to receive, and what results from performing the process. The classes of data identified in this way will form a common language across DoD components, and when arrayed against the processes will present a macro-view of the future information environment.

Outputs and Relationships:

- Information Model Matrix.

The primary output of this step is a matrix linking the information classes to the processes.

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PHASE III: THE INFORMATION SYSTEMS STRATEGY

1.1 MISSION AND SCOPE

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2.6 FUTURE OPERATIONAL CONCEPT

2.7 FUNCTIONAL INFORMATION MODEL

2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL ROM?)

3.1 PROCESS MODEL

3.2 DATA MODEL

3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

3.5 INFORMATION SYSTEMS ANALYSIS

3.6 IMPLEMENTATION STRATEGY (PROGRAM CONCEPT)

DESIGN AND IMPLEMENTATION

SEQUENCE OF STEPS

NOTE: ──► Indicates Sequence of Steps

STEP 2.6 FUTURE OPERATIONAL CONCEPT

Purpose:

The purpose of this step is to determine the business methods and
practices that will be applied in the future, by defining and depicting
how the processes will be executed and managed.

Description:

The functional group will analyze each process from the Future
Functional Concept and specify how each will be executed and managed.
Additionally, the group will identify and record actions that must be
accomplished to transition from the current business methods and
practices to those of the future. Information flowing in and out of each
process will be captured in a collateral step, Functional Information
Model.

Outputs and Relationships:

- Business methods and practices.
- Actions required.

PHASE I: THE FUNCTIONAL VISION

1.1 MISSION AND SCOPE

1.2 POLICY AND GUIDING PRINCIPLES

1.3 VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

2.2 GOALS

2.3 OBJECTIVES

2.4 STRATEGY

2.5 FUTURE FUNCTIONAL CONCEPT

2.6 FUTURE OPERATIONAL CONCEPT

2.7 FUNCTIONAL INFORMATION MODEL

2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL ROMT)

2.1 SITUATION ANALYSIS (FUNCTIONAL BASELINE)

PHASE III: THE INFORMATION SYSTEMS STRATEGY

3.1 PROCESS MODEL

3.2 DATA MODEL

3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

3.5 INFORMATION SYSTEMS ANALYSIS

3.6 IMPLEMENTATION STRATEGY (PROGRAM CONCEPT)

DESIGN AND IMPLEMENTATION

SEQUENCE OF STEPS

NOTE: ——▶ Indicates Sequence of Steps

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STEP 2.5 FUTURE FUNCTIONAL CONCEPT

Purpose:

The purpose of this task is to identify those processes that will be included in the function in the future and to describe each of them.

Description.

The functional group will first identify the various objects that must be managed or addressed by the function. Objects that are currently managed were identified in the Situation Analysis, and they will be reviewed for applicability in the future. The vision elements and strategy statements will then be reviewed for other objects that must be managed in the future. The processes that will be included in the function in the future will then be identified by performing a life cycle management analysis of each object. Finally, a brief narrative description of each process will be developed.

Outputs and Relationships:

- Action-oriented statements that identify and describe those processes that will be included in the function in the future.

Completion of this step provides the work group with a high-level insight about the function 10 years in the future. Greater specificity will be developed in the following step where the details of the concept are formulated into the future operational concept.

PHASE I: THE FUNCTIONAL VISION

1.1 MISSION AND SCOPE

1.2 POLICY AND GUIDING PRINCIPLES

1.3 VISION

PHASE II: THE FUNCTIONAL BUSINESS PLAN

2.1 SITUATION ANALYSIS (FUNCTIONAL BASELINE)

2.2 GOALS

2.3 OBJECTIVES

2.4 STRATEGY

2.5 FUTURE FUNCTIONAL CONCEPT

2.6 FUTURE OPERATIONAL CONCEPT

2.7 FUNCTIONAL INFORMATION MODEL

2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL ROM?)

PHASE III: THE INFORMATION SYSTEMS STRATEGY

3.1 PROCESS MODEL

3.2 DATA MODEL

3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

3.5 INFORMATION SYSTEMS ANALYSIS

3.6 IMPLEMENTATION STRATEGY (PROGRAM CONCEPT)

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STEP 2.4   STRATEGY

Purpose:

   The purpose of this step is to is to develop a business strategy that states what needs to be accomplished in order to achieve the previously defined objectives.

Description:

   The development of the strategy is dependent upon a review of the objects of interest, environmental factors, business practices and objectives.   Based on this review, the functional group will determine the key success factors associated with each objective.   After analyzing all of the key success factors, strategies will be developed for achieving the objectives.   The functional group will also determine the risks associated in executing these strategies.

Outputs and Relationships:

   • A business strategy expressed as a set of high-level action statements describing what must be done to achieve each of the objectives.

   The business strategy will be used as a basis for developing the future functional concept.

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1.1 MISSION AND SCOPE

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2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL ROMT)

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3.1 PROCESS MODEL

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STEP 2.3 OBJECTIVES

Purpose:

The purpose of this step is to define objectives which measure
progress towards the agreed-upon goals, defined to meet the vision. They
are statements about the future that express specifically where DoD must
be at various points in time and are designed to permit quantitative
measurement of progress. Tangible (quantifiable) objectives are
preferable to qualitative objectives.

Description:

In the step, each goal will be analyzed and specific measurable or
tangible products and milestones will be identified. These products will
be reviewed and restated as objectives to be reached at particular points
in time. The list of objectives will be reviewed, the key objectives
will be documented, and the objectives will be tracked back to the goals
to assure at least one objective per goal.

Outputs and Relationships:

- Objectives stated as declarative statements including
  specific measurement criteria for each.

Objectives provide a basis for designing the processes of the future.

STEP 2.2 GOALS

<u>Purpose</u>:

The purpose of this step is to define a set of goals for achieving the vision elements defined in Step 1.3 for the functional area. Goals are desired states that must be achieved to attain the vision.

<u>Description</u>:

Functional officials must define the goals for their functional area, and must collectively agree that these are the goals to be accomplished for the Department.

The situation analysis, completed in the previous step, and the vision provide the basis for establishing goals for the function. The functional officials will review the vision, determine its key elements, and identify the desired states represented by the elements.

<u>Outputs and Relationships</u>:

• Goals expressed as a set of declarative statements.

Goals are the key elements leading to the vision. They are refined into objectives and strategies in subsequent steps.

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PHASE III: THE INFORMATION SYSTEMS STRATEGY

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2.5 FUTURE FUNCTIONAL CONCEPT

2.6 FUTURE OPERATIONAL CONCEPT

2.7 FUNCTIONAL INFORMATION MODEL

2.8 FUNCTIONAL BUSINESS PLAN (FUNCTIONAL RQMT)

3.1 PROCESS MODEL

3.2 DATA MODEL

3.3 FUNCTIONAL INFORMATION SYSTEMS REQUIREMENTS

3.4 SITUATION ANALYSIS (INFORMATION SYSTEMS BASELINE)

3.5 INFORMATION SYSTEMS ANALYSIS

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- Functional business practices related to the functional area.

- Assessment of vision elements in terms of the current situation.

This step provides parameters for the next steps, the determination of goals and objectives for the function. The results are also used for identifying information systems for review in the Situation Analysis (Information Systems Baseline) step.

STEP 2.1 SITUATION ANALYSIS (FUNCTIONAL BASELINE)

Purpose:

The purpose of this step is to review and analyze the current
business situation and assess the vision elements in terms of the
situation review and analysis. A situation analysis for information
systems will be done in a subsequent step. (see Step 3.4)

Description:

First, the current or baseline functional processes will be
identified. This will include a description of current business
procedures, practices, capabilities, and policies. Care will be taken to
identify what functions are actually executed, rather than how they
should be executed. Processes that are common to all Military
Departments and DoD Agencies will be distinguished from those that are
unique to some subset of DoD.

In addition to the baseline functional processes, legislative and
regulatory business practices will be identified. This analysis will
document common and unique business practices among the Military
Departments and DoD Agencies.

Finally, with a business understanding of the current situation, each
vision element will be analyzed in terms of the current situation. This
analysis will address how and how well business is conducted today
relative to each vision element.

Outputs and Relationships:

The analysis of the current situation results in:

- A description of the current capabilities of DoD in the
  functional area.

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STEP 1.3 VISION

Purpose:

The purpose of this step is to develop and articulate the vision for doing business in the functional area 10 years in the future. The vision may or may not be similar to current practices.

Description:

In developing the vision, the functional group will make fundamental decisions about alternative ways to address the key factors, identified in the previous steps, that will shape the function in the future. The decisions are expressed as a set of vision elements that communicate the decisions to other senior experts in the functional area. The group will outline several future scenarios as a basis for confirming the feasibility of each vision element. The set of vision elements collectively identify the future target for the function to which all the *remaining work effort will focus.*

Outputs and Relationships:

- Concise, declarative statements that constitute vision elements.

The vision will be used as guidance throughout the remaining steps, and will directly shape the goals for the function and the future functional concept.

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Completion of this step provides the foundation for articulating the vision for the function.

STEP 1.2 POLICY AND GUIDING PRINCIPLES

Purpose:

The purpose of this step is to define the DoD-wide overarching policy
for the functional area and the guiding principles that will lead the
function to the year 2000. The guiding principles will express the
management philosophy for the function.

Description:

The functional group will first analyze the policies, statutes and
regulations that govern the function and identify significant trends
based on them. Similarly, general business trends affecting the
functions will be identified. The group will then define and develop
policies to improve the way the Department does business in the
functional area as it guides the Department in this functional area into
the 21st Century.

Finally, based on these policies, the group will develop overall
guiding principles (the management philosophy), that will define the
operating fundamentals for performing the function the way it should be
performed.

The future direction that DoD will take in conducting its business in
the functional area will be shaped by these policies and the management
philosophy.

Outputs and Relationships:

The outputs for this step are:

• General policy trends affecting the function.

• Overarching policies that will govern the functional area.

• Guiding principles expressed as declarative statements.

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PHASE II: THE FUNCTIONAL BUSINESS PLAN

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1.1 MISSION AND SCOPE

1.2 POLICY AND GUIDING PRINCIPLES

1.3 VISION

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STEP 1.1 MISSION AND SCOPE (FUNCTIONAL)

Purpose:

The purpose of this step is to develop a mission statement unique to the function being analyzed and to describe the scope of the function. The mission statement describes the purpose and reason for the function. The scope of the function will be described in a manner that identifies what the function will include as well as what it will not include.

Description:

The development of the mission and scope will be based on identification and analysis of the activities that should be considered as part of the function. The types of activities that directly support the mission, and the identification and documentation of the boundaries of the function will be noted.

Outputs and Relationships:

- Mission statement.

- Scope of function (defined in terms of the activities).

The mission statement will provide a guide for all subsequent activities by stating the unique purpose and reason for the function. The scope of the function must be clear and precise. The scope of the function will be defined in terms of the activities that make up the function. Both it and the mission statement must be documented formally and have uniform applicability across the Military Departments and DoD Agencies. This step defines the scope of the entire work effort of the function and provides the basis for conducting the policy area analysis and developing the guiding principles or management philosophy for the functional area.

APPENDIX M

DEPUTY DIRECTOR OF NAVY IRM INTERVIEW

This document contains the notes taken during an interview with the Deputy Director of Navy IRM.

He stressed the manpower drain the functional groups were having on navy IRM. The services are undermanned as it is, and CIM took away some of their best people.

He's worried about "Who's minding the store". In other words, while all this great CIM stuff is happening, who is going to take care of the daily business. Will the current systems fall apart due to lack of personnel, lack of funding, lack of priority, etc.

He thinks it is too much too soon. Why not pick one area, form a functional group, devise standard requirements, implement the system and then learn from their mistakes. Should it work out, then advertise this success as a precursor of what's to come. This will strengthen the support for the new CIM devised systems. If it doesn't work out, then lessons have been learned. Either they can fix the problems, or else scrap the idea without wasting Billions of dollars. Maybe the experience will lead to other avenues in which to pursue.

He mentioned that it takes 6-8 years for major systems to come online. Is the government and DoD going to wait that long? He doesn't think so.

He's worried about lack of funding. Citing $E^3=D^3$. Which means "Events in Eastern Europe = Declining Defense Dollars.

He believes support is there for CIM. The idea is sound and people admit that something needs to be done. People are shell shocked at the size of this effort and the time frame in which to implement it. No figured a system would be ram rodded down their throat.

Many people in the trenches are worried about moving. Basic needs that are of concern to anyone faced with forced change.

He feels CIM will collapse under its own weight.

The functional groups were manned via interviews, record scans, and interviews with coworkers.

APPENDIX N

DEFENSE MANAGMENT REPORT DECISION

This document is a Defense Management Report Decision which estimates the cost of funding CIM.

DEFENSE MANAGEMENT REPORT DECISION

SUBJECT: Develop Standard ADP Systems

DOD COMPONENTS: Army, Navy, Air Force, Defense Agencies

ISSUE: DoD must not expend resources to develop and maintain multiple systems or software to meet the same functional requirements.

	(TOA, Dollars in Millions)	
	FY 1990	FY 1991
Service Estimate	8,946.8	9,246.8
Alternative Estimate	-.6	-265.1

SUMMARY OF EVALUATION: The DoD currently has multiple management information systems in functional areas such as financial management and inventory management. Many of these ADP systems are in various stages of development and modernization, and some are operational. These ADP systems are rarely designed using standard functional and common data requirements. The Deputy Secretary, as part of the Defense Management Review, announced a major initiative which sets as a priority the more effective use of information systems. Corporate Information Management (CIM) will enhance the availability and standardization of information in common areas and provide for the development of integrated management information systems. Under CIM tasking, levels of compatibility and redundancy will be addressed and uniform and consistent information requirements will be developed. The results of these CIM activities will provide the Department with a unique opportunity to capture savings while at the same time dramatically improving efficiency and effectiveness of operations. The Department should be taking aggressive management action to hold to a minimum those expenditures for systems that are candidates for CIM.

ALTERNATIVE ESTIMATE: The alternative estimate reflects reductions of $.6M for FY 1990 and $265.1M for FY 1991, and a total of $3.5 Billion in FY 1992 through FY 1995. The alternative estimate provides funding for the CIM initiative (FY 1990, $1.7 million; FY 1991, $50.0 million) to include contract support, travel, office space and other support for the Executive Level Group and the functional working groups, and initial work on the design and development of standard systems. CIM funding of $1.2B in the outyears is proposed to permit the design and development of standard systems.

OUTYEAR IMPACT:

	(TOA, Dollars in Millions)			
	FY 1992	FY 1993	FY 1994	PY 1995
DoD ADP	-631.0	-931.0	-949.0	-968.0
CIM	+220.0	+320.0	+323.0	+329.0

THE DEPUTY SECRETARY APPROVED
THE ALTERNATIVE ESTIMATE

DECISION _____ Date NOV 10 1989

FOR OFFICIAL USE ONLY

DETAIL OF EVALUATION:

MAJOR AUTOMATED INFORMATION SYSTEMS (AISs):

NAVY:
The Navy Integrated Disbursing and Accounting Financial Information
Processing System (IDAFIPS) development is an example of an AIS
that might have benefited from the CIM approach. However, IDAFIPS
has critical functional deficiencies, including non-compliance with
DoD accounting standards, and continued investments would be
inconsistent with DoD determinations to pursue functional system
standardization and CIM. Deletion of all funds for IDAFIPS,
effective in FY 1990, is addressed by PBD No. 045.

The Navy Personnel/Pay (PERSPAY) Follow-on program should be able
to implement the new standard systems being created as a part of
the CIM Management Plan. These new systems should allow for
limited Navy unique extensions, and therefore only 20 percent of
the non-investment funding should be required to complete
implementation of the program.

AIR FORCE:
The Air Force Automated Technical Order Management System (AFTOMS)
is a significant initiative and provides DoD the opportunity to
develop a standard system. Consistent with the current direction
of the AFTOMS program and the CIM concept, the Navy and Army are to
participate in the development of functional requirements and take
advantage of AFTOMS capabilities to meet their similar needs. No
funds will be programmed or budgeted for Army or Navy for this same
function other than those funds required to implement AFTOMS.

SUMMARY OF SPECIFIC REDUCTIONS:

	(TOA, Dollars in millions)	
AIS Program	FY 1990	FY 1991
IDAFIPS (covered in PBD 045)	(-26.7)	(-25.9)
PERSPAY	-.6	-.1
Total	-.6	-.1

CORPORATE INFORMATION MANAGEMENT:
The Department is expending over $4 billion annually on development
and modernization of automated information systems. The
Alternative is based on the premise that the Department can and
should defer approximately a quarter of the amounts planned for new
development, modernization or enhancement while planning for
transition to the Corporate Information Management concept.
Furthermore, as these systems are deployed, savings would result
from reduced operation and maintenance costs. The reduction is
phased over the first few years.

DMRD Continuation Sheet

As part of the CIM initiative to eliminate multiple systems or software that meet the same functional requirements, an effort has been established to develop uniform and consistent information requirements and data formats within each functional area. These standard functional and information requirements will be used to develop standard integrated management information systems. Funds will be required for developing these standard systems or for adopting an existing system that may meet the standard information requirements for Departmentwide use. About a third of the potential savings in the outyears should be held in a centrally controlled fund for this purpose.

The alternative estimate also provides minimal funding in FY 1990 for start up activities of the CIM initiative. These activities include contract support, travel, office space and other support for the Executive Level Group and the functional working groups (FY 1990, $1.7 million; FY 1991, $50.0 million). CIM funding of $1.2B in the outyears is proposed to permit the design and development of standard systems.

SUMMARY (excludes reductions to major systems):

| Service/Agency | (TOA, Dollars in millions) | | | | | |
	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Army	-.5	-100.0	-200.0	-300.0	-306.0	-312.0
Navy	-.5	-100.0	-200.0	-300.0	-306.0	-312.0
Air Force	-.5	-100.0	-200.0	-300.0	-306.0	-312.0
Defense Agencies	-.2	- 15.0	- 31.0	- 31.0	- 31.0	- 32.0
Total	-1.7	-315.0	-631.0	-931.0	-949.0	-968.0
CIM (WHS)	+1.7	+50.0	+220.0	+320.0	+323.0	+329.0

APPENDIX O

CIM FUNDING ARTICLE

This article discusses the increase of CIM funding for FY 1991 resulting in CIM establishing greater control over DoD ADP.

Bill Bolsters CIM Control Of DOD ADP

By BOB BREWIN

The Senate's 1991 Defense appropriations bill gives sweeping power over new ADP systems — and $1 billion to back it up — to the Defense Department's Corporate Information Management program to consolidate Defense administrative systems.

The Senate Armed Services Committee's report on the bill said it strongly supports consolidation of Defense ADP functions and considers CIM — headed by DOD deputy comptroller for information management resources Cynthia Kendall — "an appropriate effort for central management."

The committee directed the services and Defense agencies to "submit future budget requests for CIM-related systems or new-start programs through the CIM coordinator." The order would encompass all new ADP systems except the Computer-Aided Acquisition and Logistics Support (CALS) program.

Beefing Up Central Management

The action, which was not actively sought by the CIM office, was one of several steps taken by Congress to extend or strengthen central management of key Defense ADP programs.

The Senate bill called for moving all oversight of CALS programs from the four uniformed services to the Office of the Assistant Secretary of Defense's CALS program office. And the House version of the appropriations bill requires use of the Ada programming language in all DOD ADP systems, extending the original mandate
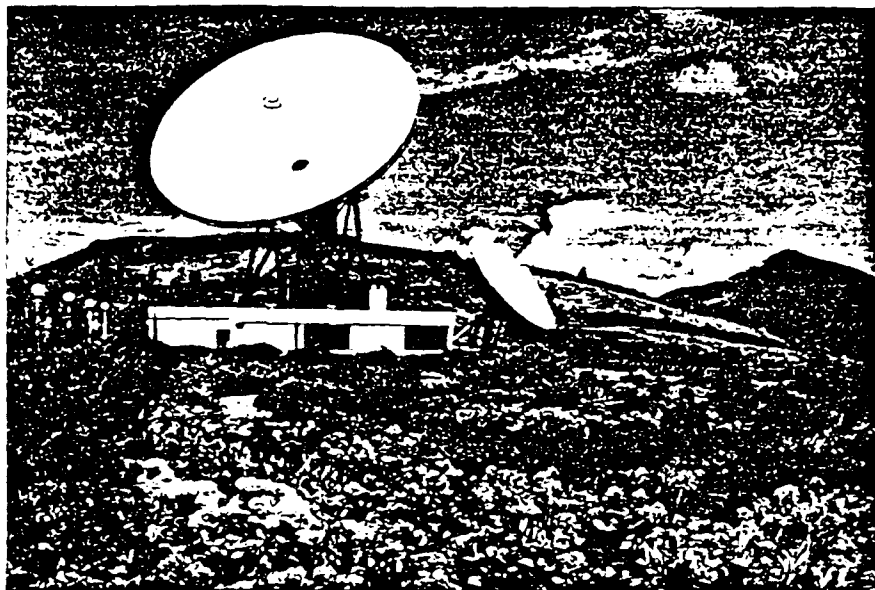
On Hold
The Department of State Telecommunications Network is designed to connect 275 State and 50 other foreign-affairs offices in the United States and abroad.

SENATE TRIMS NETWORK'S FUNDS, AWAITS REPORT

Intelligence Community Bucks DOSTN

By JENNIFER RICHARDSON

A fight over who should use the $364 million Department of State Telecommunications Network (DOSTN) has led a Senate committee to pare back funding until State completes a report justifying its plans for the network.

Due for award in February, DOSTN will upgrade State's communications worldwide. The prime contractor will design an X.25 packet-switched network that will connect 275 State and 50 other foreign-affairs offices in the United States and abroad.

Sen. Frank Lautenberg (D-N.J.), a member of the Senate Appropriations Committee, advocated expanding use of the network to users in the intelligence community, according to

a spokesman for Lautenberg. The senator pushed for mandatory use of the network by intelligence agencies for the sake of efficiency, the spokesman said.

Intelligence Says 'No Thanks'

Members of the intelligence community, in turn, contended that DOSTN would duplicate existing resources, according to a spokesman for the Appropriations Committee's Subcommittee on Commerce, State and Judiciary.

In a series of briefings between the Senate Appropriations and Intelligence committees, "there were enough questions raised that we agreed we should hold up funding until we get a report from State," the spokesman said.

In the report, State will be required to address "the proper mix of government-owned and leased communications services at diplomatic facilities abroad and the degree to which such systems should be interoperable," according to the

report, it will be budgeted for no more than $15 million of the $46 million it requested for DOSTN in fiscal 1991. State officials said the report is unnecessary but nonetheless will prove the need for DOSTN.

States Debate Of U.S. Child S

By LEIGH RIVENBARK

The Department of Health and Human Service's plans to launch a nationwide child support enforcement network have left state officials guessing whether the project duplicates their existing systems and fearing it may bleed their already-scarce system funding.

HHS' Family Support Administration has solicited ven-

SENET,

FROM PAGE 1

network (EPLN) a 10-state
southeastern regional child sup-
port network said EPLN is
upped with electronic mail
it may be able to transmit the
so data that CSEnet would
nire for example

Pending EPLN

Thomas said he questioned
why FSA apparently did not
consider extending EPLN to
the 40 states not now partici-
 using FSA would not comment
whether it had studied such
an option.

EPLN is a locator network
signed to search records of
the last addresses of fast-
moving parents who fail to pay
child support.
The network, which is based
in South Carolina, provides user
states with on-line access to
such others' records, such as
the Department of Motor Vehicles
records and state employment
records.
As such, it is fundamentally
erent from CSEnet, which
essentially an information
exchange network and does not
such agency records.
The federal government runs
a separate, national locator
system called the Federal
Parent Locator System, which
officials said would continue to
exist once CSEnet is opera-
tional.
FSA spokesman David Siegel
referred questions about
Thomas' concerns to the
Enet contracting officer, who
did not reply to written ques-
tions by press time.
"We cannot respond to your
questions because we don't
want to disturb whatsoever the
Enet procurement process,"
Siegel said.

Impact on Funding

EPLN began with a federal
grant in 1985 and now operates
with both state and federal funds.
Some user states said they
welcome CSEnet but worry
about its potential impact on
their federal funding. According
to EPLN documents, states pay
60 percent of their EPLN costs,
the federal government
is up the remaining 68
percent.
With the presence of CSEnet
meaning federal funds for EPLN
cut back, some states may
have to leave EPLN.
A recent *Federal Register*
report on the impact of a fiscal
federal budget sequester
"federal matching rates for
these administrative expenses"
child support enforcement
would be reduced.
Among other cuts, the "rate
computer-related and labor-
ratory expenditures would be
reduced from 90 percent to 47
cent" the notice said.
FSA's Siegel said he could
address what the notice

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might mean for CSEnet or
EPLN users.
David Popovich, MIS chief
for the Florida child support
enforcement office, said he
backs CSEnet as a complement
to EPLN but added that he
needs more information from
Washington.
"We've heard several differ-
ent versions" of how much
CSEnet funding would be
state-provided and how much
would be federal, he said. "I
think that as soon as a decision
on funding is made it needs to
be transmitted to the states for
inclusion in state budgets."
Bruce Kaspan, assistant man-
ager of California Parent Loca-
tor Services, said California
wants CSEnet, opting not to
participate in EPLN because of
its Southeastern regional con-
centration.
"Maybe what EPLN should
focus on is an interface with
CSEnet rather than on being a
replacement for CSEnet," Kas-
pan said.
Joanne Cunningham, who su-
pervises North Carolina's
parent locator service, said the
two networks would not be
duplicates. "I'm concerned if
people are saving our network
here in the Southeast will be
duplicated by CSEnet because
it won't," she said. "We just
don't want to lose EPLN be-
cause it is a highly valuable
locator, worth its weight in
gold."
Betty Murphy, executive di-
rector of the National Child
Support Advocacy Coalition,
which is tracking the CSEnet
procurement, said her group is
concerned that the statistics
given potential bidders in the
CSEnet RFP may be too old to
paint a realistic picture of
expected CSEnet traffic.
NCSAC has "major problems
with the quality of data and the
estimates supplied... in the
request for proposals," Murphy
said.
She added, "This lengthy,
10-year contract, if based on
unsound data, will probably
result in unnecessary, extended
negotiations or rebidding, fur-
ther delaying a much-needed
enforcement tool." ◄

SOLBOURNE,

FROM PAGE 38

end servers, midrange servers
and systems and now low-end
systems," Warner said. "There
have been procurements in the
past that we haven't bid because
we could not bid the low end."
Solbourne sells its products
to the federal government
through a host of resellers and
integrators. Alexandria, Va.-
based *Computer Systems and
Resources Inc.* holds the com-
pany's *General Services Ad-
ministration* multiple award
schedule contract. ◄

CIM,

FROM PAGE 1

for using the language in
weapons systems to using it in
administrative systems as well.
Some Defense executives
criticized the language.
"There's been a lot of grum-
bling about the CIM provision
because it comes out of our
budgets," a senior service ADP
official said. "This is an undisci-
plined approach. How are they
going to manage that much
money?"
The official said his service
interpreted the bill to mean
that the majority of new DOD
ADP programs would have to
flow through the CIM office to
receive funding and approval.
He estimated that CIM fund-
ing — which amounts to cuts
in the ADP budgets of the
individual services — would hit
the Army hardest, with that
service losing about $500 mil-
lion. The Navy would lose about
$200 million and the Air Force
and Defense agencies about
$200 million, he said.
"DOD has a 1991 ADP budget
of about $9 billion," the official
said. "That $1 billion for CIM
has to come from somewhere,
and that's the services. It means
that the ADP budget is now $8
billion for the services and $1
billion for [CIM]."
The Senate committee's bill
would give similar sweeping
powers over CALS procure-
ments to Michael McGrath,
director of the Office of the
Secretary of Defense's CALS
policy office. Besides removing
oversight and responsibility for
CALS from the services to
central DOD management, the
committee report "directs the
services to submit future budget
requests for CALS-related sys-
tems or new-start CALS pro-
grams through the OSD/CALS
coordinator."
The report also directs OSD
to review Army, Navy, Air
Force and Defense agency
CALS programs "to determine
which projects and systems will
be selected as CALS stan-
dards."
Bob Dornan, vice president
of the research firm Federal
Sources Inc., said he views the
creation of CIM and CALS czars
as a positive step toward
bringing strong, central organi-
zation to the services' disorgan-
ized computing systems.
"I think this is the only way
they can get the consolidation
job done," he said. "I'm pleased
Congress has decided to cen-
tralize control of both the
management and the money. It
gives Kendall and the CALS
office the kind of backing they
need. This is an idea whose
time has come." Dornan did
question the amount of money
the Senate committee gave
CIM. "It boggles the mind how
that group can manage so much
money," he said.

The service ADP source said
the large amount of funding put
into CIM by the Senate Armed
Services Committee has raised
concerns at the House Appro-
priations Committee, which is
pushing for lower initial funding
for CIM. The House committee
bill backs a program that Ken-
dall has tried to keep out of
CIM, the Air Force-managed
Joint Uniformed Service Tech-
nical Information System. The

> *"This is an undisci-
> plined approach.
> How are they going
> to manage that much
> money?"*

bill directs CIM to fund that
program to the tune of $6.5
million, "assuming that the
system can be made to conform
to the CIM process."
The House bill also gives a
strong boost to Ada, mandating
that "after June 1, 1991, all
Department of Defense soft-
ware shall be written in the
programming language Ada, in
the absence of a special exemp-
tion by an official designated
by the secretary of Defense."
The committee report said
this language "will remove any
doubt of full DOD transition to
Ada, particularly in other-
than-weapons-systems appli-

---

cations. It will stimulate DOD
to move forward quickly with
Ada-based software engineer-
ing education and cataloging
reuse systems." The language
codifies policies the services
announced over the past year
requiring the use of Ada in all
new software starts.
The House committee bill
also delivered what could be the
knockout punch to AT&T Co.'s
Standard Multiuser Small Com-
puter Requirements Contract,
denying $29.1 million in funding
to Air Force Personnel Concept
III, a system AT&T once
estimated would use up to 3,000
of the 3B2 computers sold on
that contract.
The report said the commit-
tee "does not support further
deployment" of that system
because "it is only partially
developed and tested and has
not passed significant elements
of required operational tests."
Federal Sources' Dornan said
this development "does not
look very promising for
AT&T.... One wonders
whether it is lack of marketing
savvy on their part or the
technology does not turn any-
body on."
Differences between the
House and Senate bills were
being resolved in conference
at press time, but Defense
officials said the policy guidance
likely would remain intact.
"There might be some rebel
on the money, but the mark on
the policy probably will stand
in conference," said one senior
service ADP official. ◄

DIGITAL,

FROM PAGE 38

seriously in the Unix market, I
think," said Judith Hurwitz,
editor of *Unix in the Office.*
Using existing technology
makes this a low-investment
proposition for Digital and may
reduce some of the problems
the company has had offering
its own brand of Unix, she said.
Though the target market is
small- to medium-sized busi-
nesses, the new computers may
appeal to smaller government
agencies. "particularly as gov-
ernment gets more budget-
conscious," IDC's Shannon said.
"I think it's good news to
federal buyers," Hurwitz said.
Using commodity products will
make the computers relatively
inexpensive.
Multiprocessing with micro-
processors is the technology of
the future because, "it makes a
lot more sense to take two of
what you've got" rather than
develop a single microproces-
sor that is twice as powerful,
she said.
"You can use two 486s
instead of coming out with the
886," she said.
In addition, "Multiprocessing
is the first step toward parallel

processing" with smaller, less
expensive machines, she said.
DEC's basic model, with a
single processor, 209M hard
disk, 8M of memory and SCO
Unix System V operating
system, will be available early
next year for $18,400. The
processors and memory run on
Corollary's high-speed C-
bus.
"Corollary's done a really
nice job" in developing a
software implementation of
multiprocessing Unix, Hurwitz
said. The company's first prod-
ucts used both hardware and
software to achieve the same
results, she said. But potential
customers wanted to use their
own hardware, "so Corollary
separated the software," she
said.
Corollary's symmetrical
multiprocessing kernel extends
SCO Unix while providing com-
patibility for the many applica-
tions using that version of Unix,
Corollary officials said. Using
Corollary's extensions, SCO
sells the kernel as SCO MPX.
"With the arrival of 386-and
486-based multiprocessor
PCs, at a fraction of the cost of
a minicomputer, the PC now
rises head and shoulders above
the traditional mini," said a
Corollary executive ◄

APPENDIX P

CIM AGENCY SHIFT ARTICLE

This article discusses the transfer of CIM from DoD IRM to DoD C^3I.

S

New Development

HIIPS is designed to consolidate HUD's ADP operations agencywide and will collapse two teleprocessing networks into one.

PHOTO.

DOD Sends CIM to C³I, Andrews Named Czar

By BOB BREWIN

Defense Secretary Dick Cheney made sweeping changes in the management of DoD information technology, shifting responsibility for the DOD Corporate Information Management (CIM) program to Duane Andrews, assistant secretary of Defense for command, control, communications and intelligence (ASD C³I).

Cheney directed Andrews to set up an organization to establish CIM throughout DOD and to submit a detailed plan within 30 days on how that will be accomplished. Under CIM, DOD will choose existing Defense administrative systems to be standard throughout the military.

A memo identifying what programs have been selected as part of the CIM initiative has been prepared and may be released as early as today, Pentagon sources said.

Deputy secretary of Defense Donald Atwood further strengthened the role of the ASD C³I. Atwood removed DOD undersecretary for acquisition John Betti from Andrews' chain of command on CIM, directing Andrews to report directly to Atwood and Cheney.

Atwood also said Andrews would "exercise authority, direction and control over the Defense Communications Agency (DCA), the Defense Mapping Agency, the Defense Intelligence Agency and the General Defense Intelligence Program Staff."

Industry and service sources said the new policies indicate DCA will play a key role in centralizing management of the Pentagon's information technology. "Cheney's memo directs Andrews to set up an organization to establish CIM, while the Atwood memo gives him direct control of the logical organiza-

Martin Marietta Wins HIIPS

Company to Drive Computer Programs From Own Center

By ANN M. MERCIER

The Department of Housing and Urban Development last week awarded Martin Marietta Corp. a $525.9 million contract to run the HUD Integrated Information Processing System (HIIPS), a grand-design project to consolidate the agency's data processing systems.

HIIPS is designed to improve housing and financial programs at HUD headquarters and its 81 field offices by outsourcing the agency's entire data processing and network management to Martin Marietta, which will drive the programs from its own computer center.

"HIIPS should allow us to keep up with technology changes over the long haul and provide modern computer services to HUD users through the '90s," said Donald Demitros, director of HUD's information policies and systems office. Although planning for HIIPS predated the agency's recent financial management scandals, the system should improve the agency's internal controls, Demitros said.

By midweek, HUD is expected to meet with the winner and the losers: Boeing Computer Services Co. and Electronic Data Systems Corp. "We believe we conducted a fair procurement," Demitros said, adding that Martin Marietta scored highest on technical merit and lowest on cost.

Boeing and EDS would not comment on the likelihood of a protest until after the debriefing. But analysts said they expect a losing bidder to contest the award. "I think a protest is virtually assured because of [HIIPS'] size," said Jim Kerrigan, vice president of market research firm Input Inc.

Netrix's Integrated Switching Gives HUD Net Versatility

By LEIGH RIVENBARK

The HIIPS award gives a boost to Netrix Corp., a small, Herndon, Va., firm hired by Martin Marietta to provide integrated switching — combining packet switching and circuit switching in a single device.

Netrix will provide a nationwide #1-ISS Integrated Switching System network under the HIIPS contract, at a value of $2 million to $3 million in initial installations, Netrix president and chief executive officer Charles Stein said.

The switching system will use the mandatory FTS 2000 data network, with US Sprint providing data pipes up to what FTS 2000 calls the service delivery points.

Just beyond that point sits the Netrix system, providing the bridge between the FTS 2000 service points and HUD's computers.

RC I Protests

with two companies that protested ,e Air Force's Standard Software The General Services Administra- ppeals withdrew its suspension of week after R.R. Donnelly and Sons ,c. withdrew their protests. "This er' status, and we expect an actual ;pokesman said. ◄

— Bob Brewin

ief New PRC Prexy

·sident of Oracle Systems Corp.'s s surfaced as the new president of ean, Va.-based systems integrator ning Research Corp. and Advanced eplaces Scott Thompson, who has

more than eight years with Oracle, e U.S. sales effort and served as ;e maker's systems integration (Systems Corp. In fact, Kennedy acle's executives and shareholders its first quarterly loss this fall. ◄

— Carolyn Duffy Marsan

Top IRM Slot

will establish a deputy assistant ıtion resources management, a post ticism of the agency's information t filled early next year, said assistant ;tration Harry Flickinger. he job follows repeated General of DOJ's information systems. DOJ ng on Capitol Hill, where the House nvestigating Project Eagle, the ıutomation contract ever. ıt attorney general for IRM would ment's data centers, systems policy ems staff, telecommunications staff L ◄

— Leigh Rivenbark

islaw Controversy

out of the Justice Department, the ? will conduct a hearing this week ıs by software developer Inslaw Irive the company out of business. first time the committee has gone ıgs, although it has been studying .han a year. But sources said the o publicize what they called DOJ's tion than to reveal new informa-

— Leigh Rivenbark

90 Protest Denied

/ Andersen Consulting against the tem 90 contract award to Computer 3 million. System 90 is an integrated :m that will streamline accounting 'ernment. CSC won the award in nged Treasury's negotiations, price and enforcement of benchmark

— Jennifer Richardson

Conyers characterized Navy ADP acquisition as "a process rife with bias and favoritism" caused by "questionable ethical practices by both the Navy and IBM." But "IBM appears, for the most part, not to be responsible for the bizarre Navy ADP acquisition system but merely its willing beneficiary."

"I applaud House Government Operations for releasing this report," one source said. "The Navy seems to have cleaned up its act a good bit since the investigation began.

Operations Committee staff member said Conyers is not finished probing the way the government buys computers. "The committee will hold more hearings in the 102nd Congress, which begins in January."

Carl Urie, assistant director of the General Accounting Office's Information Technology Division, who was on loan to the committee for 13 months to work on the investigation, also said Conyers has asked GAO to look at the process by which GSA delegates procure-

DOD Dornan, vice president of Federal Sources Inc., a Vienna, Va., consulting firm, expressed surprise at the language the subcommittee used to describe the Navy ADP procurement process. "It doesn't appear that there's an investigation going on here but a headline-grabbing attempt."

Dornan said he agreed with the report's conclusion that the fault lay primarily with the Navy, not IBM. "It would be like me being mad at my cat for killing mice — good ones do that," Dornan said. ◄

CIM,
FROM PAGE 1

tion for the job, DCA," said one industry source.

DCA officials will not comment on what role — if any — the agency will play in taking CIM from plan to reality.

But a source close to that agency said DCA is "in the midst of reorganizing to handle CIM."

One industry source speculated that the Pentagon may go as far as to rename DCA the Defense Systems Management Agency.

The Pentagon declined to answer any questions about the structure and mission of the new DOD CIM organization. But, when asked if DCA would assume a central role — including running procurements — a DOD spokeswoman said that because the communications agency is now under Andrews' control, "it is entirely feasible that certain responsibilities could go to that organization."

The disposition of the current CIM office, headed by deputy DOD comptroller Cynthia Kendall, is unclear, industry and service sources said.

Some speculated that Kendall will continue to develop standard information systems for Andrews, while others said that may be a task Andrews wants to assign to his new organization, which would build on the spade work done by Kendall.

One service information resources management official said, "Kendall may already be out of the loop. Andrews already has an information systems director, Diane Fountain, and she would be the logical choice

to handle CIM.

"It's possible that Andrews' office will now handle the selection of interim standard information systems," one of the key goals of Kendall's year-long effort on CIM, the official said.

In an interview with FCW Nov. 22, Kendall said she planned to decide within one month how to allocate the $1 billion Congress took out of the services' ADP budgets because the services and Defense agencies "have a number of programs that cannot be suspended for more than a month."

Service sources said Kendall already has tapped several systems as interim standards. They include the Air Force's Requirements Data Bank contract held by BDM International and its Depot Maintenance Management Information

System and the Navy's Stock Control Point and Distribution System.

Cheney also named Andrews chairman of the Major Automated Information Systems Review Committee and appointed him DOD's chief information management official.

The CIM reorganization makes it difficult to ascertain how DOD will grapple with several important and pending issues, including the disposition of $1 billion in funds transferred to CIM by Congress from the armed services, said Jim Kerrigan, vice president of market research firm Input Inc.

"The situation is murky right now. All that money dropped into CIM made them power brokers. Obviously someone is rethinking where the authority and power should lie," Kerrigan said. ◄

Round 2

In a Nov. 5 article, "Fed PC Prices Leave Buyers Bewildered," General Services Administration schedule prices for the Compaq Deskpro 386/25 Personal Computer were based on out-of-date GSA prices. Compaq Computer Corp. revised its schedule prices Oct. 15; FCW's report relied on the latest GSA price list available to us — an Aug. 1, 1990, price list that was valid through Oct. 31.

Accordingly, the current price of the Deskpro 386/25 Model 84, configured with an 84M hard disk, 4M of random-access memory, a color VGA card, a color monitor, MS-DOS and a

1.44M 3½-inch drive, would be $6,420, not $7,482, as we reported.

Further, Compaq is no longer producing the 386/25. The replacement, Compaq's 386/25e, was introduced last January. When configured as described above — but with a 120M hard disk — the 386/25e Model 120 costs government buyers $4.875 on the GSA schedule.

As a result, the 25 MHz PC Compaq offers on the schedule is priced in line with the AST Research Inc. 386/25, which sells for $4,940 when similarly configured, and the IBM Corp. Model 70 with 60M, which costs $4,598. ◄

APPENDIX Q

CIM TERMINATES ADP PROGRAMS ARTICLE

This article discusses which ADP programs will be terminated by CIM.

nterior's DIS II
'rocurement Still On
ongressional Grill /3

ongress to Keep Tabs
)n ADP Budgets /4

.DS Begins Filling SMC
)rders /4

3M Unveils
ligh-Performance
?ISC Workstation /6

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FEDERAL COMPUTER WEEK

THE NEWS WEEKLY FOR THE GOVERNMENT SYSTEMS COMMUNITY

NINA CORNETT of the Navy
nshes for information resources
management solutions. /38

ANALYSIS
▼
'ed PC Prices .eave Buyers 3ewildered

. RICHARD A. DANCA

How much does the
-deral government pay for a PC?
-he simplest answer is no one
-nows. Buyers face too many
-noices and too many variables
-)r them to compare prices from
- e available sources.

That means federal buyers can
3y anywhere from about $1,500
more than $7,000 to buy
;sentially the same PC, accord-
3 to price lists FCW examined,
-nich include prices in catalogs
- several large procurements
-d General Services Administra-
-on schedule contracts.

For this analysis, prices for a
) or 25 MHz 80386 PC with
-vboard, 4M of memory, a 1.4M
->opy drive, an 80M hard drive,
-olor VGA monitor with required
-)apters and cables and an
-S-DOS operating system were
->mpared.

That benchmark definition
based on the Unisys Corp.
-V2 Advanced Workstation avai-
-)le to military buyers through
e Air Force's Desktop III con-
-ict. This machine also has the
-west price of all the machines
-amined. Price reviews by
-ners. including Wohl Assoc-
-es Inc. of Bala Cynwyd, Pa.,
-enerally include similar ma-
-nines, often also adding 16 and
3 MHz 386 computers.

What makes the comparison
-fficult is that the price for a
-omputer sometimes includes
-S-DOS. Microsoft Windows,
-ner utility or application soft-
-are. a mouse or other peripher-
-s and added services such as
SEE **PC PRICES**, PAGE 57

How Much for a PC in FY 91?

•20 or 25 MHz 386
•4M of Memory
-Color VGA
•1.4M Floppy Drive
•80M Hard Drive
•MS-DOS

The Federal PC FY 91 Model

$7,482
$6,513
$5,781
$4,940
$4,598
$3,920
$3,504
$1,535
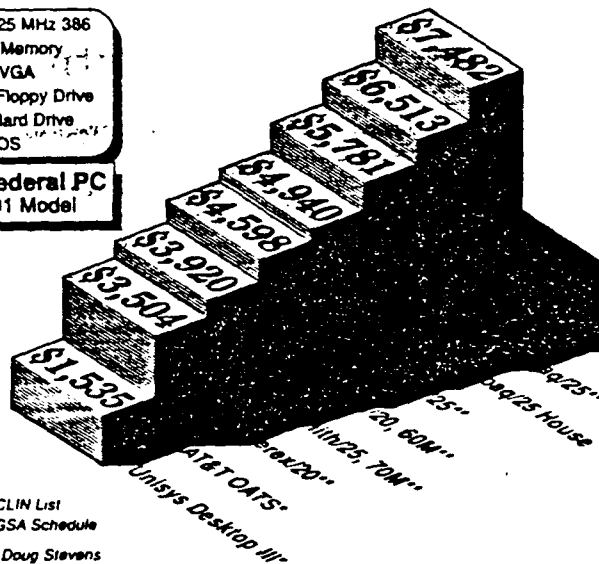
Source: • CLIN List
         •• GSA Schedule

Graphics by Doug Stevens

Pentagon to Axe ADP Programs
CIM office examines which Defense systems to keep or kill

By BOB BREWIN

The Defense Department will
decide a month from now which
of the services' ADP programs
it will keep or kill in the wake
of Congress' transfer of $1
billion from the services' budg-
ets to its Corporate Information
Management (CIM) streamlin-
ing initiative.

Budget negotiators gave the
CIM program — designed to
install common administrative
systems throughout DOD —
wide latitude to choose which
among the four services' ADP
programs it will expand across
the military.

Cynthia Kendall, the CIM
program chief and DOD comp-
troller for information re-
sources management, said in
an interview that the net effect
of the budget action will trans-
late to fewer ADP programs,
although Congress said "no
specific service information
system program has been ter-
minated" by the transfer of
funds.

30 Percent Funding Cut

"We planned for $1.4 billion
development and moderniza-
tion funding, and this [$1 billion]
represents a 30 percent cut,"
she said. "I expect some pro-
grams will have to be termi-
nated." Kendall said the $400
million shortfall came in opera-
tions and maintenance.

The CIM staff must act
swiftly to dispose of the $1
billion now under its control
because the four services and
Defense agencies "have a

number of programs that cannot
be suspended for more than a
month," Kendall said. "We have
to continue to perform our
missions."

SEE **CIM**, PAGE 57

DOD Takes Budget Lead In Drug War

By JENNIFER RICHARDSON

The Defense Department won
the battle of the budget in the
drug war, receiving slightly
more than $1 billion to distrib-
ute to various agencies and
commands. But DOD, the lead
agency for the administration's
drug detection and interdiction
efforts, was scolded by Con-
gress for not spending money
fast enough.

Congress made major com-
mitments to increased use of
aerostats radar, improved com-
munications networks, a new
center to process and combine
drug intelligence reports and a
program to develop prototype
applications of advanced detec-
tion technology.

However, the House Appro-
priations Committee expressed
deep concern about the low
spending rate by DOD of
previously appropriated funds.
In particular, the committee is
concerned that none of the $27
million budgeted for the com-
mand, control, communications
and intelligence network had
been spent.

In its new budget, Congress
attached intermediate spending
deadlines. For example, of the
$28 million for land-based
aerostats, $14 million must be
SEE **DRUG WAR**, PAGE 57

Navy Calls for Second Round Of Companion Final Offers

By BOB BREWIN

The Navy will try one more
time to award the Standard
Desktop Companion contract
for upgrades to the 400,000-
plus PCs in the Defense
Department. The Navy called
for a second round of final
offers, due in January, from all
bidders on the original con-
tract.

The Navy said. "Declining

price trends in the ADP
industry would indicate a
significant dollar savings to
the government" over the
original $534 million value of
the contract, which has been
deadlocked by protests ever
since it was awarded to Zenith
Data Systems last November.
Also, some items in the
original Companion bids are
no longer available, the
SEE **COMPANION**, PAGE 5'

DRUG WAR,
FROM PAGE 1

ent by the end of November, also asked for a report from DOD on the expenditures from counterdrug budget in six months

Much of the confusion over spending surrounds the use law-enforcement support money, said Frank Kalder, ector of budget and legislative review at the Office of tional Drug Control Policy (NDCP) Last year DOD was en $4U million to spend on activities that support law-orcement agencies.

"We're working with Defense to put together a table to see if they spent the money. I n't want to say categorically at they didn't spend it," Kalder said.

Because the budget language so tightly written, DOD unable to use the funds to support agencies and instead went much of it on general erdiction activities. This year DOD got $50 million for support, and the language allows re leeway, Kalder said.

Broad Responsibility

Congress also is concerned ether Stephen Duncan, assistant secretary of Defense for serve affairs, who has been med coordinator for drug inforcement policy and support, can handle both jobs. "The concern is command and control whether Mr. Duncan's responsibility is already too broad him to be the drug coordinator," said a Senate Armed Services Committee spokesman. "He is the senior individual in DOD responsible for bringing together military action in the drug war."

The creation of the National Drug Intelligence Center, which received $10 million in initial funding, was requested by the President as a way to set priorities for intelligence gathering, to coordinate agencywide stem development and to provide links for information from different sources.

Surrounded by controversy from the start, NDIC sparked action from other agencies that claimed the center would duplicate facilities and efforts already in place, such as the Drug Enforcement Administration's El Paso Intelligence Center and the Federal Bureau Investigation's National Crime Information Center.

NDIC also aroused civil liberties issues. "We have concerns about aggregating data used for law-enforcement purposes, particularly data which is compiled for a new entity without a clearly defined mission or purpose," said Marc Rotenberg, director of the Washington, D.C., office of Computer Professionals for Social Responsi-

Early attempts to fund the center in Treasury or Justice appropriations bills failed. Instead, the House Defense Appropriations Committee disagreed and funded NDIC in the DOD bill. "A lot of the information and intelligence will come from agencies within DOD, so it seemed likely to place it there," a committee spokesman said.

As envisioned by DOD, NDIC differs from the center that Justice proposed last year. It will be lodged in DOD as a "separate federal agency outside of the military and outside of the intelligence community," much like the Defense Advanced Research Projects Agency and the Defense Mapping Agency, the committee spokesman said.

To cut the cost of running the center, the funding bill stipulates that NDIC should be located outside of Washington, D.C. — specifically, in the Pennsylvania district of Defense Subcommittee chairman Rep. John Murtha (D-Pa.). Murtha has chosen Johnstown, Pa.

"We would never propose it in Johnstown; that's pork-barrel politics from Murtha. It's an intelligence-gathering center. We're not going to employ a bunch of out-of-work steel workers to do that," an ONDCP spokeswoman said.

However, the Defense Appropriations Committee would "like to see the debate move away from the pork-barrel issue and focus more on the project itself. After all, the idea [for the center] came from the administration," the committee spokesman said. "It's going to be in somebody's district.

Evaluating Technologies

Congress' faith in high-tech solutions for drug interdiction also is represented in the creation of a center to evaluate and select technologies to fund or test in the drug war.

The Counter-Drug Technology Assessment Center (CDTAC) will perform work now handled by the ONDCP Science and Technology Committee, said George Heim, executive director of the committee.

A chief scientist will head the center, which will consist of 10 scientists and engineers. CDTAC will be responsible for ranking the government's technological needs for the counter-drug initiative and for overseeing and monitoring their development.

Congress authorized a total of $47 million for research, development, test and evaluation of new technology to be used in the drug war. Some $6.5 million extra went to DARPA for unspecified counternarcotics research.

— Leigh Rivenbark contrib-

CIM,
FROM PAGE 1

The CIM office "will not be running ADP programs per se," she said. "We will be funding programs the services submitted in their budget requests The services will be carrying them out. I'm not running procurements."

Nevertheless, the 1991 Defense appropriations bill makes Kendall, through the CIM office, a dominant authority over future Defense administrative systems and planning.

The bill directes "the services and Defense agencies to submit future budget requests for medical, material management, logistics and other CIM-related systems through the CIM program director for coordination and review."

The clear-cut language, and the authority over $1 billion in program funding, "gives Kendall a lot of power," said Jim Kerrigan, an analyst with market research firm Input Inc. "She has become the driving force behind DOD ADP policy."

Bob Doman, vice president of market research firm Federal Sources Inc., said Congress' action "puts Kendall into the ADP driver's seat. She will

decided who thrives and who withers."

Doman added that Kendall's decisions on cuts will be a test of how she can handle pressure from the services and pressure to reduce ADP spending. Asked if the $400 million cut was too much, Doman said, "CIM says it can save money. Congress said, 'Start saving it now.'"

Congress gave CIM flexibility in determining which programs to fund. "This is not an easy exercise," Kendall said. "It's very taxing because of the (overall) $400 million cut.

"The services will get some portion of their budgets back but not likely all that was taken from them," Kendall said.

Systems that Kendall said she wants to fund are those that can serve as interim standard DOD systems — programs that can solve all the services' ADP needs in particular functional areas, such as payroll. CIM has been identifying such interim systems for the past several months, "and we speeded that process up in August," Kendall said.

CIM functional groups, which are working in such areas as payroll and medical information systems, should select some interim standard systems in the next month, she said. ◄

PC PRICES,
FROM PAGE 1

installation or a warranty. Also, a 25 MHz machine generally costs more than a 20 MHz one, but both versions are not available from all vendors under contracts or GSA schedules.

The Desktop III machine, known as contract line-item number (CLIN) 0002AA, has a base price of $905 for a 20 MHz machine with no monitor or hard disk. The price includes a mouse, one parallel and two serial ports and a SCSI adapter as well as setup and diagnostic software for MS-DOS, Unix and Posix — and a box of 10 diskettes. MS-DOS with Windows 2.11 adds $43.

Order a 14-inch VGA color monitor ($197), a VGA video board ($97) and an 80M SCSI hard disk ($293), and the total cost for the Desktop III system comes to $1,535.

By contrast, the base price for a 25 MHz D2 workstation is $2,256.16 under the Federal Aviation Administration's Office Automation Technology and Services (OATS) contract with AT&T Co. And that price does not include a keyboard ($51.42 extra). Add the 1.4M floppy drive ($92), 80M hard drive and SCSI controller ($614), VGA monitor ($294) and DOS ($43), and the a la carte price rises to $3,504.

But OATS offers a better bargain from what the contract calls a master CLIN. Under that

Professional Workstation (CLIN 010-0350) has a $3,654.12 price Buyers get those components plus a 1.2M floppy drive, a serial mouse, a 2,400 bit/sec modem, cables and power conditioner. This master CLIN also includes a full suite of office automation software: Microsoft's Word for Windows, the Microsoft Excel spreadsheet and the Superbase 4 data base manager, which includes business graphics.

Adding that software to a 20 MHz Desktop III machine would cost an additional $371, for a total cost of $1,906.

In addition to cost savings, an added advantage to OATS' master CLINs is AT&T's assurance that all the parts work properly together, said Robert F. Koenig, OATS program director at AT&T's Federal Data Systems. Of course, the contract offers many other options.

The U.S. Postal Service has a PC contract with Sysorex Information Systems Inc. in Falls Church, Va. Under that contract, a 20 MHz Everex Step computer with a 70M hard disk costs $3,628; no 80M drive is available. Sysorex recently announced a plan that will let some USPS employees buy the Everex machine for similar prices.

Federal buyers who cannot buy from large procurements can rely on GSA schedule prices. Based on last year's figures, sales leaders included Zenith Data Systems. Compaq Computer Corp. and Government Technol-

COMPANION,
FROM PAGE 1

Navy said. Federal Computer Corp., Government Technology Services Inc., SMS Data Products Group Inc. and Zenith all competed for the contract.

Capt. Thomas McQueen, commander of the Navy's Automatic Data Processing Selection Office, said, "If the vendors get their technicians back in the trenches and mail their lawyers back home, we could have an award as early as April." ◄

BUDGETS,
FROM PAGE 4

The Hill has been under pressure from vendors of CD-ROM data bases who see Fedlog as competing with the private sector. Reflecting the apparent success of that pressure, the DOD conference report singles out Fedlog. "Committee members and industry have stated concerns that the DLA has 'overspec'ed' the system beyond the government's stated needs, thus limiting the opportunity for industry to respond," the report said. ◄

ogy exclusive contract to sell IBM Corp. PS/2s.

Zenith sells a 25 MHz 386 for $4,598 under its GSA schedule. Zenith also holds a similar contract with the Senate, as does Compaq, which also sells to the House of Representatives.

The Senate price for a 25 MHz Zenith 386 is $3,399, said Glenn Dallaire, the Senate's contract administrator. In addition, Senate buyers can purchase a Compaq 386/25 for $5,600, he said. Both computers have color VGA monitors and DOS, the Zenith machine includes Windows 3.0 and a mouse. In addition, making price comparisons even more difficult, the Senate's computers come with free installation and a year's maintenance, he said.

On the other side of the Capitol, a similarly equipped Compaq costs $6,513, according to a price list for that schedule. However, a major portion of that cost is for bringing the computer's memory up to 4M, and memory prices have been falling precipitously FCW was unable to contact anyone in the House computer office to provide more current figures.

Compaq's GSA price would total as much as $7,482, again depending on memory costs However, Compaq's base price of $4,959 expired Oct 31

With GTSI's GSA price, an IBM PS/2 Model 70 with a 60M hard disk would cost $4,598, including the VGA monitor. GTSI's catalog does not list an 80M drive for that

APPENDIX R

AIR DEFENSE GUN CONTRACT TERMINATION ARTICLE

This article discusses the termination of the Army's air defense gun contract.

Divad, first weapon canceled by Reagan administration, was faulted for its inability to defend against Soviet helicopters.

Weinberger Kills Antiaircraft Gun

By George C. Wilson

Defense Secretary Caspar W. Weinberger, in the first weapon cancellation of the Reagan administration, spiked the Army's big new antiaircraft gun, the Divad, yesterday.

Weinberger told a crowded Pentagon news conference that the system "didn't work well enough" to justify adding $3 billion to the $1.8 billion already spent for 618 Divad units that the Army had wanted to protect troops against bombers and helicopters. The 65 Divads already produced by Ford Aerospace & Communications Corp. of Newport Beach, Calif., will be used for experimental purposes, the Pentagon said.

According to defense officials, the fatal flaw of Divad, an acronym for Division Air Defense, was that new Soviet attack helicopters such as the Havoc could outreach it with long-range air-to-ground missiles.

CASPAR W. WEINBERGER
search is on for gun's successor

Weinberger said a search is on for a successor that can handle the helicopter threat. European as well as domestic designs will be consid-

ered, he said. Weinberger has been under intense congressional pressure to cut marginal military programs to ease the budget crunch. Until now, he has been unbending, declaring that the Soviet threat prevents him from living up to his nickname of "Cap the Knife."

Sen. David H. Pryor (D-Ark.), who earlier this year told The Washington Post that if he were White House chief of staff, he would replace Weinberger this fall to restore the Pentagon's credibility with Congress, was among those who hailed Divad's cancellation. "This decision will help increase Weinberger's credibility on Capitol Hill," he said.

Sen. Dan Quayle (R-Ind.), a member of the Senate Armed Services Committee, said "there are certain political benefits" from the cancellation of Divad. "Weinberger's criticism... he's never met a weapon system he didn't like, but now he's shown that, given the right circum-

See DIVAD, A11, Col. 1

Weinberger Orders Cancellation of Army's New Divad Antiaircraft Cannon

Central section of Divad looks more like a jet cockpit than ground-bound tank.

DIVAD, from A1

Rep. Denny Smith (R-Ore.), co-chairman of the House Military Reform Caucus and an outspoken critic of Divad, said "it took a lot of guts to terminate Divad because weapons like this far along develop a life of their own."

Divad, also called the Sgt. York, after World War I hero Alvin York, has been in technical and political trouble practically since Ford won the contract in 1981. The Army tried for some time by developing, testing and producing the weapon concurrently.

Also, the Divad was not built for the ground up but was a combination of systems. The Army used an antiaircraft gun that can down Soviet helicopters capable of standing 3½ to 4 miles off and firing missiles into ground troops. Wade said Divad's effective reach against helicopters was about 2½ miles, depending on such variables as the altitude of the attacker.

For years critics have contended that the longer reach of Soviet missile helicopters made Divad obsolete before the Army backed by Weinberger, kept striving for improvements, saying it was the best antiaircraft weapon in reach.

The Army conducted make-or-break tests on the system this spring, using its troops rather than factory technicians in the typical Red versus Blue teams of attacker and defender.

John E. Krings, director of the Pentagon's new Operational Test and Evaluation Office, set up at the direction of Congress in hopes of establishing a review office independent from the armed service purchasing a specific weapon, said in an interview yesterday that the key question hanging over Divad was: Would it significantly improve the survivability of Blue [defensive] forces—does it make life better for troops on the ground?

The answer from the tests was no, he said, confronting Weinberger with the question of whether Divad's ability to knock out aircraft at some ranges as well as its other capabilities made it worth buying. Krings said the Army, on the basis of the Red versus Blue tests, no longer wanted all 618 Divads.

The experience, Krings said, "is a vote for reasonable, early testing." He indicated that Divad should have been canceled before now, saying, "A stronger insight should have been available earlier."

Congress directed the Pentagon to set up the independent testing office by November 1983. But Weinberger did not fill the directorship until this year. Krings reported to the job in April and now has a staff of 15.

Cancellation of a weapon program, particularly in mid-production, is rare. In 1977 Carter scrapped the B1, but the bomber was not in production. Reagan later reversed that controversial decision.

Weinberger decided to concede that Divad was the first big weapon he has canceled in his 4½ years as defense secretary, citing President Reagan's abandonment of the mobile basing mode recommended by President Jimmy Carter for the MX missile. However, Congress had never approved that basing mode.

Weinberger said the Army needs an antiaircraft gun that can down Soviet helicopters...

Pentagon's new procurement director, said yesterday about combining dissimilar hardware to make Divad in a hurry.

"Integration is where we got in trouble," James P. Wade Jr., the Pentagon's new procurement director for fast-firing guns from Sweden to put on the tank turret, adapted the radar for search and fire control from the Air Force's F16 fighter and added a laser to determine the range of targets.

APPENDIX 8

CIM STAFF GROUP INTERVIEW NOTES

This document contains the notes taken during a group interview at the CIM office in the Pentagon.

The members of this group included the CIM Director, and three of her senior staff members.

This interview was important so we could capture the history and current issues affecting the CIM initiative in a real-time manner.

The interviewers were Professor William J. Haga and James P. Steele, III of the Naval Postgraduate School.

25 June 90
Washington DC

CIM is not about consolidation, it is about standardization. Standardization of IS organizations, purpose, principles and missions at the DOD level across uniformed services.

Consolidation is being handled by another directorate under DOD Deputy Comptroller Kendall.

Atwood imported the CIM standardization process from General Motors where he was an executive.

The origin of the CIM effort was Congressional criticism of the management of information resources and technology in DOD.

The vertical dimension of the CIM process is to assemble -- for each of eight functional areas such as medical, financial operations, payroll, etc. -- representatives from the uniformed services and DOD agencies. These representatives form a working group for their functional area. That group is to devise the ultimate vision of IS for their functional area. And to devise an interim program to make the transition from the agency-specific I 5 programs and systems that now exist to the DOD-oriented ultimate vision system of the future.

The horizontal dimension of the CIM process will integrate across functional areas. It will integrate organizations, systems, hardware and data structures. This is compelled by the existing and necessary linkages between functional areas. Personnel generates the inputs to the payroll system. That requires an integration of data structures and systems between personnel and payroll.

While not explicit, the implicit CIM approach to dealing with resistance and turf defense by the agencies is to present them with a fait-accompli that involves the loss of IS budget beyond the threshold of organizational pain. GM officials acknowledge the virtue of a fait accompli approach which sweeps aside the arguments, justifications and politicking by the agencies being forced into IS standardization. These same officials would not disown a characterization of their approach as "railroading" the agencies and services into CIM.

The service most given to resisting standardization is the Air Force.

A major organizational issue is that CAM as visible, powerful, threatening is subject to major external influences. These create a rather dynamic climate in the CIM office. This dynamism leads to a stream of changes in policy, goals and understandings that are the basis of the work if the functional area working groups. CIM

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officials attempt to buffer the working groups from the whirl of events around CAM. Given the frequency and strength of external influences and events, these officials cannot shield the working groups from a working environment that is unstable.

This dynamic environment, internal buffering merits further development int he case.

Each functional area working group is headed by a leader who is a representative of OSD. Each group also has a deputy leader who is also from OSD. A third member of the group leadership is a facilitator who is from the CIM office.

Another major organizational issue is the tension between a working group being a congress of agency delegates, advocating and defending their employer/s home turf and the need to draw the members of each group into a commitment to the DOD goal of a standardized, integrated IS system portrayed in an ultimate vision.

A part of that issue is the time factor in the work of a group. The father away is the planning horizon, the greater is the willingness of the group to set parochial interests aside and work creatively to develop a DOD corporate vision of IS. The closer is the planning horizon in time, the greater is the tendency for working group members to withdraw into turf defense. The future is an abstraction, the near future has a greater reality and threatens each individual group member in terms of their career interests.

Another part of the delegate meshing issue is the difference among functional area groups. The payroll group is observed to have a tendency to create DOD oriented corporate visions of its work. The group working on personnel systems have a tendency to stay in their parochial agency interests claiming that the nature of personnel records (training, performance evaluation, schooling, recruitment, etc) are more culture-specific to each organization and thus less appropriate and more difficult to standardize across services. Payroll by contrast produces a standard green paycheck that is instrumental and neutral.

The facilitator job in the leadership of each working group is tasked to deal with the issue of delegation. CIM orients each new working group member to the corporate view of IS and Information resources.

CIM was not a top-down effort nor a bottom-up effort. Rather, CIM has started in the middle of the organization, that is, at the SES level below the political appointees. This is another interesting organizational issue: an initiative for a major overhaul of the structure of the organization and its workings in the realm of IS did not emanate from the top. It was not a matter of leadership from the top.

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Part of this middle level initiative is that the average
tenure of military bosses or political appointees is 18 months. They
are too transient to originate bold initiatives.

Three extremes show up in approaches suggested for responding to
Congressional clamor for efficiency and payoff from IS:

1. Go straight for the ultimate vision without any notion
   of interim systems.

2. Develop interim systems on the way to the ultimate
   vision.

3. Do nothing, leave the agencies alone in regard to
   developing IS.

GO STRAIGHT TO ULTIMATE VISION

PROS:

1. It takes the long strategic view, it develops the possibility
   of a strategic advantage from IS.

2. Going to an ultimate, strategic vision will enable a sound
   and prudent and efficient investment of DOD IT resources
   which will benefit the national economy to the extent that
   DOD is the biggest spender of Federal spending.

3. A long strategic view compels a corporate view of data and
   an information engineering view of the uses of information
   in the work of the organization.

4. Going straight to the ultimate strategic vision compels
   the consideration of a wide range of solutions and
   alternatives rather than seizing upon the expedient but
   narrow either/or fix. It does this because the vision
   provides a basis for evaluating alternatives.

5. A strategic view communicates to industrial contractors
   and to our allies that we know where we are going. This
   fosters a willingness on the part of contractors to risk
   an investment in providing elements of what is a stable
   plan.

6. Going straight for the ultimate vision avoids bogging down
   in an interim system that precludes ever realizing the
   strategic view.

7. A strategic plan in place allows organization to relate
   its IS budget requests to a Congressionally endorses plan.

8. A strategic plan compels allocation of dollars in a way
   that supports the plan instead of piecemeal.

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9. The implementation of a strategic vision communicates that this organization has a measure of competence in the realm of IS.

10. A strategic vision allows an organization to resist transient influences.

11. Without a strategic plan we don't get money from Congress for IS because we communicate that we don't know where we are going in the realm of IS.

12. DOD managers can contribute good ideas rather than being in the mode of constantly and exhaustingly reacting to transient events and influences.

CONS:

1. Past attempts at grand visions have failed. We have no DOD track record of. implementing visions or even of formulating them. Example: AF Advanced Logistics system in the late 1960's which was awarded to CDC in the early 1970,s.

2. The implementation of an ultimate vision will take a long time.

3. The very length of the time it will take for the working groups to develop ultimate visions (18 months to 2 years) means a group of experts working in isolation from their organizations. They will be developing an ideal system while out of touch with reality.

4. The average 18-month tenure of military officers and political appointees means that the ultimate vision will lose steam and support with a change in administration or the normal turnover of leaders in the DOD system.

5. When you try to implement a total system across the services, the implementation of that system will be a function of the implementation by the slowest user.

6. Savings from an ultimate system are far in the future; there are no immediate, visible quick hitter results. DOD is an organization that prizes quick hitters.

7. DOD is functionally oriented in structure. It is inherently vertical. That is the structure that supports command. It does not support horizontal, corporate approaches to IS.

INTERIM:

PROS:

1. An interim solution is like a prototype: you can test what you're going to do by building something later.

2. Immediate needs of system are met without violating long run objectives.

3. Keep some contractors alive now that you will need later.

4. Interim solution is the vehicle for the cultural transition to standardized approaches to IS.

5. Keeps services from becoming so upset that they will kill the CIM program outright.

6. User have an opportunity to adjust to what will be their future IS environment. Going right to the full vision system might be too big a step for many users.

7. Users learning to work with interim system is likely to provide valuable modifications to the formulation of the ultimate vision, modifications that will be denied by going directly to the strategic vision.

8. The interim solution might be good enough to become the ultimate solution.

CONS:

1. CIM will bog down in an interim system that is oriented to expediency rather than achieving a final system that fully realizes what could be.

2. The existing system is so bad that no interim system can ever be a bridge to an ultimate system. Any detour to an interim system will prevent the realization of the ultimate vision.

3. An interim system is bound to develop a constituency that could not be turned to an ultimate system.

DO NOTHING:

PROS:

1. It is comfortable. Its where we are now. W- know how to handle that.

2. Services retain control over IS that fits their unique requirements.

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3. System complexity defies simple analysis by the CIM working groups.   Unrealized,   un   appreciated,   unforeseen interdependencies in IS systems will be overlooked.

4. Centralized large systems will stifle innovate efforts by
    - decentralized small groups that are essentially in competition for resources.

5. We have a lot of new systems about to come on line. There is a lot of automation just around the corner. CIM will kill all of that in the name of a distant future ideal.

6. If the Soviets turn nasty again, we have a proven IS support system infrastructure in place. This is not the time to upset the whole system while we are trying to figure if Gorbachev will last and perestroika is for real.

7. Bad as we are alleged to be the fact is that DOD is no worse than that at any other organization.

8. At decentralized facilities, technical and functional people work closely. Under a centralized approach, they are likely to be driven apart to the detriment of the development of systems.

CON:

1. It doesn't work now.

Alternative to interim solution:

Have users play with off shelf systems and new technology while they await implementation of ultimate vision. Better to do this than make a heavy commitment to a single interim solution.

This approach keeps users open-minded until ultimate vision arrives.

This approach also prevents premature commitment to a massive interim solution that becomes the default substitute for a strategic vision down the road.

Criterion for judging which systems under development will be allowed to be completed: some percentage of the way to completion (sunk cost rationalization). CIM still thinking about this.

Interservice agreed upon systems already in place:

1. JUSTIS tech manual system from Air Force.

2. CALS.

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3. ADCARS technical data system and retrieval of engineering
    data.

4. DWASP warehousing system.

As soon as budget and CIM pressure for integration and
consolidation is off, these systems will dissolve and
revert to agency-specific system. Services are getting
together on systems as an expression of their good faith
for CIM objectives in hopes that CIM will leave them alone
on everything else.

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