STATUS OF THE DEPARTMENT OF DEFENSE CORPORATE INFORMATION MANAGEMENT (CIM) INITIATIVE

October 1992

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Introduction

The purpose of this report is to update the status of the Department of Defense (DoD) Corporate Information Management (CIM) initiative through the end of FY 1992. This report describes the implementation progress of the initiative, strategies and efforts underway to improve DoD's business processes, and plans for FY 1993 and beyond.

This report, as previous CIM status reports, covers all aspects of the initiative. In addition, this report goes into more depth in the areas of business process improvement, financial information management, and data administration. Subsequent CIM status report will highlight other facets of the initiative.

Principles of Information Management

1. Information will be managed through centralized control and decentralized execution.

2. Simplification by elimination and integration is to be preferred to automation whether developing new or enhancing existing information systems.

3. Proposed and existing business methods will be subject routinely to cost-benefit analysis which includes benchmarking against the best public and private sector achievement.

4. New business methods shall be proven or validated before implementation.

5. Information systems performing the same function must be common unless specific analysis determines they should be unique.

6. Functional management shall be held accountable for all benefits and all directly controllable costs of developing and operating their information systems.

7. Information systems shall be developed and enhanced according to a Department-wide methodology and accomplished in a compressed time-frame in order to minimize the cost of development and achieve early realization of benefits.

8. Information systems shall be developed and enhanced in the context of process models that document business methods.

9. The computing and communications infrastructure shall be transparent to the information systems that rely upon it.

10. Common definitions and standards for data shall exist DoD-wide.

11. Wherever practicable, information services shall be acquired through competitive bidding considering internal and external sources.

12. Data must be entered only once.

13. Access to information shall be facilitated, and/or controlled and limited, as required. Information must also be safeguarded against unintentional or unauthorized alteration, destruction, or disclosure.

14. The presentation between the user and system shall be friendly and consistent.

Figure I-1.

SECTION I.
CORPORATE INFORMATION MANAGEMENT

DoD's Corporate Information Management initiative is the largest information management program ever conceived by any U.S. business organization. The initiative calls for a major re-engineering and restructuring of business methods and administrative processes throughout the DoD. The immediate CIM goals are set by the Defense Management Report (DMR) initiatives. Each of the top three DMR cost reduction targets exceeds the annual information management budgets for the top three U.S. manufacturing companies. CIM succeeds only insofar as it supports the DMR initiatives.

From 1989 to 1992 the CIM initiative expanded from concentrating on improving information management in selected administrative areas, such as contract payment, civilian payroll, distribution centers, and medical applications, to applying CIM methods to all other DoD business areas, including command and control and intelligence.

Timely delivery of cost reductions from DMR initiatives - without impairing effectiveness of the Armed Forces - requires changed work habits. Rapid changes under CIM initiatives require rethinking of each Defense support process. Responsibility for implementing business process improvements resides in DoD's functional leadership. The description of allotted DoD missions and functions, called the DoD Enterprise Model,[1] depicts the scope of each function and the interactions among the functions. This model is a logically integrated view of DoD functions, information flows, and

1. The "Implementation Plan for CIM," approved by the Deputy Secretary of Defense on January 14, 1991, explains the Enterprise Model.

organizations, including processes, data, and systems. It shows the organizational assignments for making changes under the CIM initiative -- within each functional area rather than imposed by outside "experts" . Overall DoD information management responsibility resides with the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) (ASD(C3I)), but program execution responsibilities rests within the functional areas headed by the Office of the Secretary of Defense (OSD) Principal Staff Assistants.

Even the most ambitious initiatives can succeed only by making steady progress, one step at a time. Human factors - not information technology - are the pacesetters for the rate of progress of application of CIM methods. The legacy of procedures and assets, along with organizational motivation to change, determines the rate of these changes.

The CIM Executive Level Group (ELG)[2] recognized the problems imposed by DoD's organizational inertia: "Many aspects of the Department's business functions and activities are cumbersome and inflexible, particularly in light of the pace of changing world events." The ELG did not see this as an unsurmountable issue. Instead, the ELG estimated about a decade to be the time to make a Department-wide change in the approach to examine business processes overall. The ELG placed overall business process improvement, including modeling, in its "Vision of the Future - DoD Management in the Year 2000:"

> "Process models are being used to document and continuously improve business methods. This activity

2. The Executive Level Group, a limited-term (1990-1991) advisory group reporting to the Deputy Secretary of Defense, provided recommendations and guiding principles for the CIM initiative in its Plan for Corporate Information Management for the Department of Defense, September 11, 1990. The Secretary of Defense endorsed the concepts of the plan in November 1990; the Deputy Secretary of Defense approved the Implementation Plan for CIM in January 1991, which incorporated the ELG's concepts. The Guiding Principles of CIM (Figure I-1) are based on the ELG's concepts.

provides the foundation for the development of new and enhancement of existing information systems."

Precipitous "progressive" actions without consideration of human and procedural complexities have resulted in well documented administrative disasters. DoD is taking steps to avoid such risks. DoD is proceeding with a consistent, proven methodology to improve business methods.

Process Improvement

The DoD Business Process Improvement Program examines processes and data through the Integrated Definition (IDEF) methodology[3], which is a government-owned tool originally developed by the Air Force with contractor support. The CIM initiative differs procedurally from other cost-cutting and productivity improvement efforts in the DoD in that selection of a set of consistent, computer-assisted modeling tools is the common denominator in the examination of all business processes. This holds true for applications as wide-ranging as funding transfers and weapons fire support communications. The use of a single business process improvement tool adds the abilities to store and catalog the results of previous improvement efforts so that practitioners don't have to "reinvent the wheel" for each new application.

The Director of Defense Information (DDI) selected the IDEF methodology based on its successful use in both manufacturing and service applications. The Army Corps of Engineering used IDEF to leverage ten-to-one savings to date in its investment in a stable, mission-oriented information management infrastructure (and their savings continue to accrue!). These savings earned them a Gold Nugget Award by the ASD(C3I) and the DDI.[4] The IDEF methodology is designed for user-based process improvement. In FY 1992, over 1300

3. The IDEF methodology is described at Appendix B.

4. Specifics on the Gold Nugget Award are at Appendix A.

Defense personnel received training on use of IDEF process and data modeling method and participated in over 100 demonstration projects. Notable among these projects is the work by the Defense Investigative Service to examine their processes and associated costs -- so much so that their work is being used as a template for other business process improvement efforts.[5] The DDI has set up a Business Process Improvement Program Customer Support Service (1-800-828-BPIP) to give Defense personnel ready access to information about the program, IDEF tools, projects, workshops, and case studies.

A significant aspect of the CIM initiative is the emphasis on sharing of improvement results among functional areas. As activity models and data models are developed and documented to support process improvement and data administration, these "detail models" will also be used to update and refine the DoD Enterprise Model. "Detail models" are to be reviewed and reconciled against the DoD Enterprise Model prior to their approval by the appropriate Principal Staff Assistant. The details will be incorporated into the DoD Enterprise Model after this approval. The models that make up the DoD Enterprise Model will physically reside in a single automated repository system, which is being set up in conjunction with the DoD Data Repository System.[6]

To improve the availability of the standardized IDEF tools to all DoD organizations, IDEF modeling is now included as mandatory requirements for competitors for the Integrated-Computer-Aided Software Engineering (I-CASE) contract.[7]

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5. The sample study at Appendix C is based on The Defense Investigative Service's work. The overall Business Process Improvement Program is covered at Appendix D.

6. The DoD Data Administration Program is featured in Section III.

7. The I-CASE competition is discussed in Section III and Appendix N.

Ready availability of training on business process improvement and the IDEF methodology are two keys to successful implementation of the DoD Business Process Improvement Program. As is the case for all aspects of the CIM initiative, the Information Resources Management College of the National Defense University is instrumental in providing the vanguard of education and training programs on business process improvement.[8]

In July, 1992, DDI emphasized the importance of business process improvement in the CIM initiative by establishing a Deputy DDI position devoted to this area.[9] As with the other functionally-oriented DDI Deputies, the Deputy DDI for Business Process Improvement and associated staff serve as facilitators for implementing change, rather than as the decision-makers on the changes. The DDI staff facilitates process improvements on an outreach basis by serving as catalysts and enablers to determine improvements within each functional area. Functional managers make the decisions on changing processes to effect the improvements.

Institutionalization of the CIM Initiative

The CIM initiative represents a fundamental change in DoD's focus on business process improvement. Thus, it must be formally included in DoD's Directives System. The DoD Directives System already spells out ASD(C3I) responsibilities for information management, including drafting and coordinating follow-on directives and instructions for approval by the Deputy Secretary of Defense.

8. More information on CIM education and training is at Appendix E.

9. A chart showing ASD(C3I) organizations related to the CIM initiative is at Appendix F.

The ASD(C3I) uses a consensus-based approach in developing DoD information management formal policies. According to the ASD(C3I),

> "There are two ways to do directives. You can force it and then meet resistance in implementation. You can also go the route of gaining acceptance first. The second route is the one we've chosen. This is because of the paradigm shift that must take place for the initiative to succeed."

The ASD(C3I) recognizes that technological and managerial changes such as the CIM initiative follow a pattern that is replicated in almost all cases. The following chart displays this pattern:

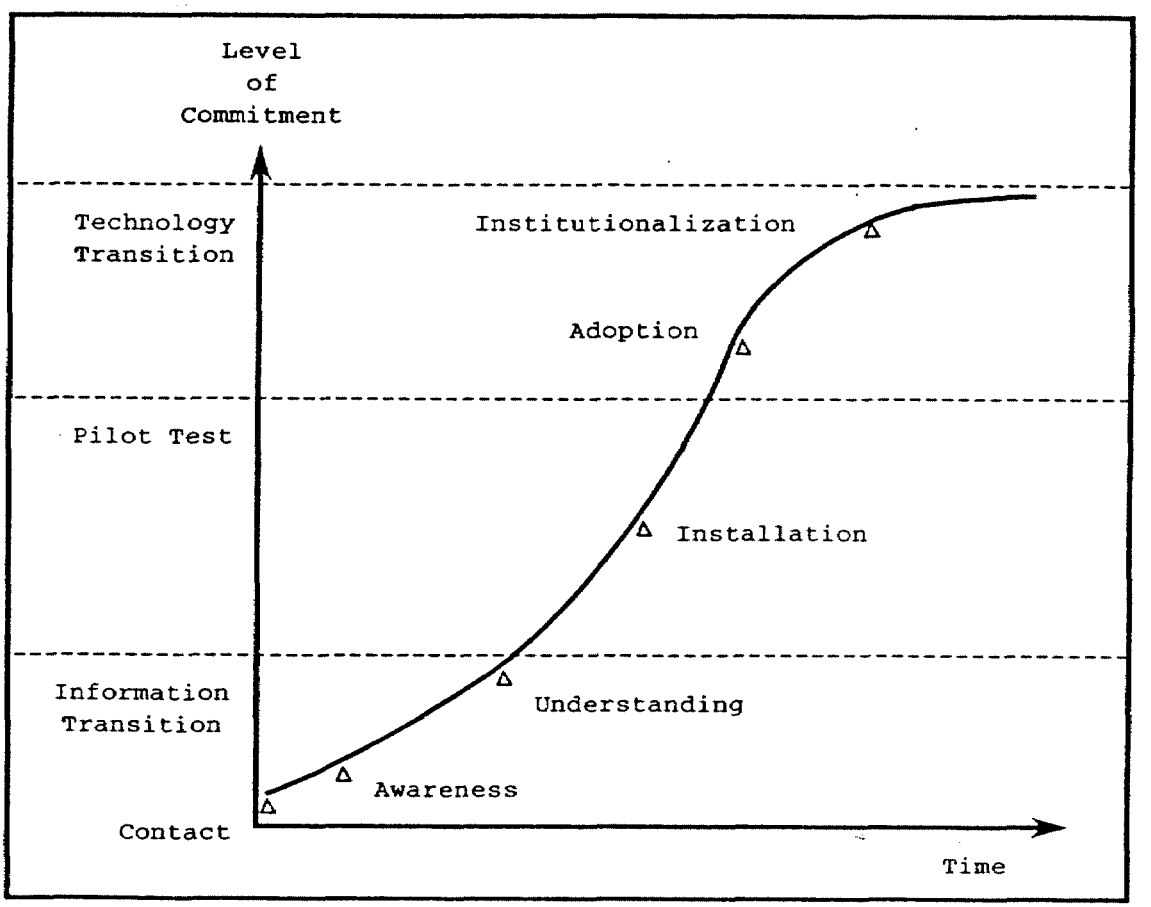


Figure I-2. Organizational Commitment to Change.
Source: DoD Software Engineering Institute, Course materials for "Managing Technological Change"

DoD commitment for the CIM initiative, related to the above illustration, should be measured horizontally rather than vertically. The CIM initiative began in 1989 with the highest level organizations committed to its support. The early functional groups spread interest since they produced results quickly and on a consensus basis. The Executive Level Group reiterated that DoD, the private sector, and academia were in agreement on the CIM initiative. The DDI announced early on that the CIM initiative would move forward through evolutionary migration, minimizing risk and building upon small-scale, frequent successes. The ASD(C3I) subsequently achieved DoD-wide agreement on applying the associated DoD principles of information management[10] across-the-board. These will be formally institutionalized into the Defense policy base upon approval of DoD Directive 8000.1, "Defense Information Management (IM) Program," by the Deputy Secretary of Defense.

The ASD(C3I) and the DDI have already moved through the early stages leading to institutionalization of the details of the CIM initiative.[11] Among these are user interfaces and system interconnection. For these areas, DoD has issued policy memoranda. Already in place is the DoD Directive 8320.1 on DoD Data Administration.

In preparation is another key policy document, the proposed manual DoD 8020.1-M, "Functional Process Improvement (Functional Management Process for Implementing the Information Management Program of the Department of Defense)." It was issued as interim management guidance by the Director of Defense Information on August 5, 1992, with

10. The principles are displayed at Figure I-1.

11. The DoD Office of Administration and Management has approved the establishment of a new series of formal policies on DoD information management. The new series is described at Appendix G.

the interim guidance to be refined and coordinated for issuance in the DoD Directives System.

The ASD(C3I) is also in the process of revising the related automated information system life cycle management policy directive and instruction. These updates will reflect the role of automated information systems within overall information management.

SECTION II.
FUNCTIONAL PERSPECTIVE

CIM requires a commitment from DoD managers to identify and implement business process improvements in their functional areas of responsibility. The CIM initiative and attendant formal policies (Appendix G) reinforce the responsibilities of these managers to apply CIM principles, and provide for information technology initiatives to serve a supportive role to functional requirements. DoD managers have readily accepted their increased functional responsibilities and they also now exercise more control over their IM resources (Appendix V).

Finance, Personnel, and Health

Tremendous progress has been made to date in these areas, and our feature topic, Financial Management, is a prime example of these successes.

FEATURE TOPIC: FINANCIAL MANAGEMENT

The DoD Comptroller, the Department's Chief Financial Officer (CFO) and the OSD Principal Staff Assistant for Financial Management, is making major improvements in Defense finance and accounting business operations -- better supporting the joint and combined forces, reducing overall costs, providing more efficient use of scarce resources. The DoD Comptroller is responsible for the finance area which contains the following functional activities:

(a) Finance, including: Civilian Pay, Military Pay (Active/Reserve/Guard), Military Retiree & Annuitant Pay, Travel Payment, Transportation Payment, Contract Payment, Debt Management, and

(b) Accounting. The DoD Comptroller, through the Financial Management Steering Committee, is following the precepts of the DoD functional management process:[12]

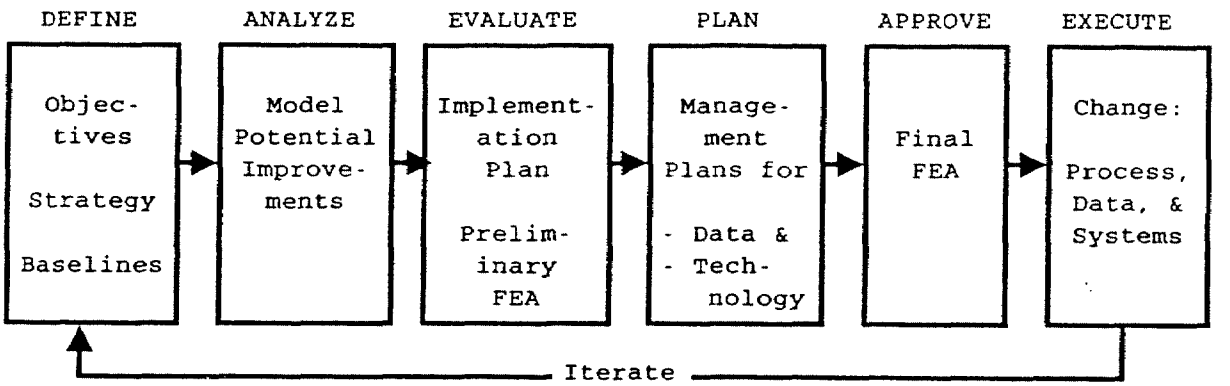


Figure II-1. Functional Management Process

The DoD Comptroller determines finance and accounting requirements; and evaluates and approves the associated processes, data, and supporting information systems. This includes justification and selection of the best available finance and accounting system as a migration system. The Financial Management Steering Committee is a forum for DoD Component planning and review of process improvements in finance and accounting. The Defense Finance and Accounting Service (DFAS) is the implementation arm for DoD financial and accounting processes and the associated improvements. The DFAS Strategic Plan reflects the implementation of overall DoD finance and accounting and the supportive information management programs.[13]

12. This process is explained in detail in "Interim Management Guidance of Functional Process Improvement" (Draft DoD 8020.1-M), August 5, 1992. Functional Economic Analyses -- the FEAs shown in Figure II-1 -- are described at Appendix H.

13. Appendix I provides highlights of the DFAS Strategic Plan.

The DoD Comptroller works through the Information Policy Council and its Corporate Functional Integration Board[14] to keep channels of communication open with the other functional areas, such as logistics, procurement, civilian personnel, distribution center, and medical. Each of these areas is undergoing its own consolidations, and each is mindful of the need for equitable responsibilities for interfaces and interoperability. This harmonizes business process improvements efforts.

The DoD Comptroller must adhere to the CFO Act of 1990 and the supporting Office of Management and Budget (OMB) initiatives. In particular, the Comptroller has worked to remedy known problem areas in DoD accounting, such as control of property, accounting for government furnished property provided to contractors, and identification of total program costs. One significant objective is to provide the means for the DoD to achieve certifiable audited financial statements.

FUNCTIONAL ARCHITECTURE

The financial target architecture defines the functional objectives that will be supported in the "to be" environment that is a common aim of financial business process improvements and migrations. (See figure II-2.)

The finance and accounting community relies on the Defense Information Technology Service Organization (DITSO) for its information technology support.[15] DITSO, as the flagship information technology utility, takes responsibility for

14. The Information Policy Council, chaired by the ASD(C3I) consists of OSD Principal Staff Assistants and assists in shaping Defense IM policies. The DDI chairs the Corporate Functional Integration Board, which addresses cross-functional implementation issues. In addition, the Information Technology Policy Board (ITPB) provides executive-level advice to the DDI on technology matters.

15. DITSO is described at Appendix L.

providing technology services, allowing the DoD Comptroller and DFAS to concentrate on finance and accounting matters.

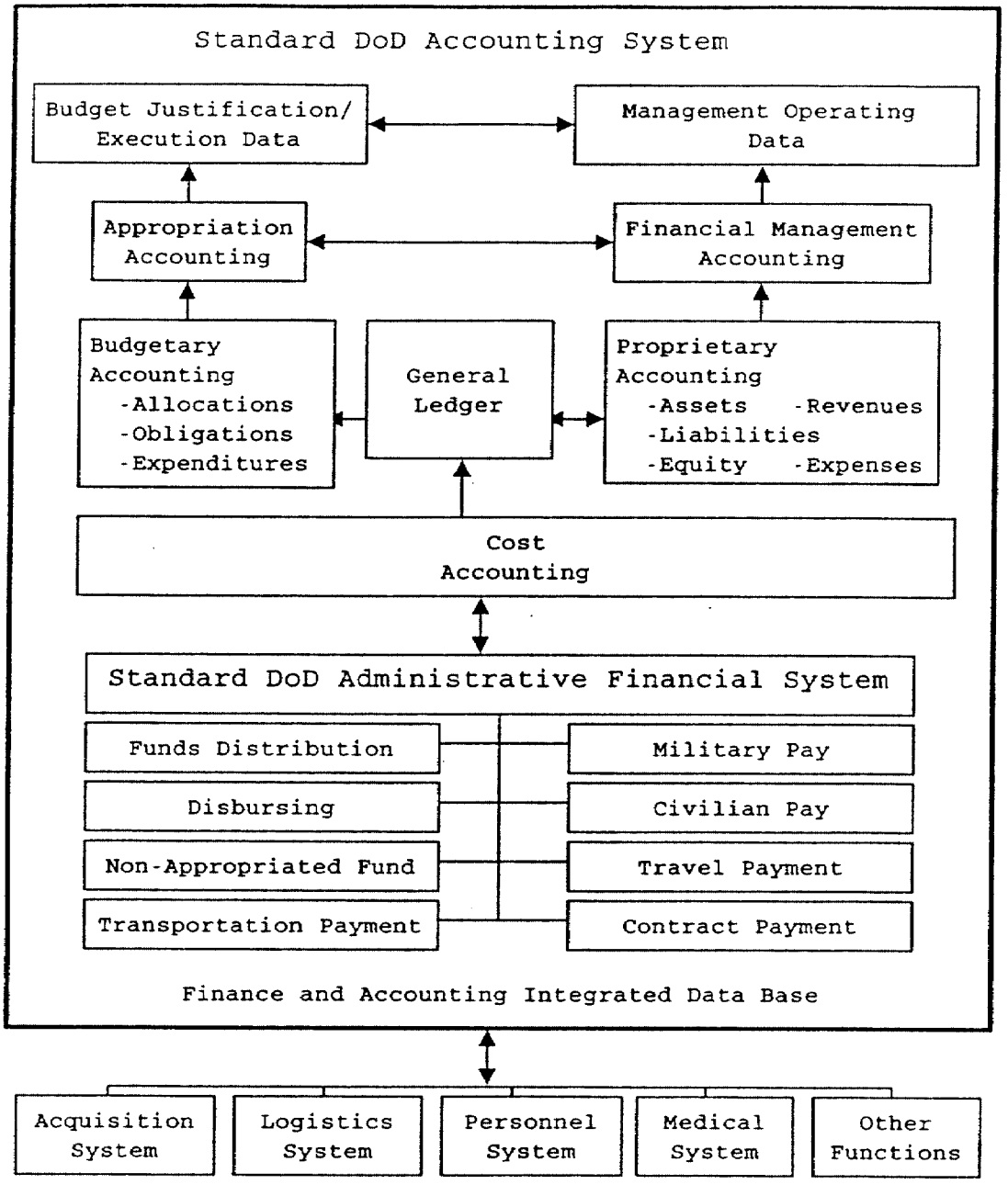


Figure II-2. Financial Target Architecture

With the finance and accounting area defined as a whole, the DoD Comptroller is applying the remainder of the process on component parts of the area, such as military payroll and contract payment, with all being commonly managed by DFAS, and

building towards a single data base. As the process moves through follow-on iterations, additional improvements can be applied.

ACTIVITY AND DATA MODELING

DFAS is moving to define and document the baseline ("as is") and target ("to be") processes and information requirement of the finance and accounting activities. DFAS is continuing the development and documentation of finance and accounting requirements as a successor to prior finance vision-driven modeling initiatives. Model reconciliation has been successfully completed with prior IM efforts in contract pay, government furnished material, civilian payroll, and financial operations and incorporated in current models. DFAS is working with the Office of the Director of Defense Information (DDI) using the Defense IM activity modeling techniques in the following areas:

- Re-engineering support for Military Pay Allotment Management legacy system to include data and process models scheduled for completion by May 1993.

- Migration system data standardization support for Defense Civilian Payroll System (DCPS) scheduled for completion by February 1993.

- Business process improvement initiative to assist in determining if the financial management requirements of the DoD Universities can be incorporated into the DoD standard finance and accounting systems or more cost-effectively met by a system only for the universities.

FUNCTIONAL ECONOMIC ANALYSIS (FEA):

FEAs developed in the finance area are used to support the decision making process and to support analysis of actual costs incurred and benefits achieved against those projected.

Process improvement alternatives and investments are evaluated based on value-added, unit cost measures, risk assessment, and alignment with strategic goals and objectives. Comparison of actual costs and benefits against those projected is a primary basis for decisions on finance and accounting program continuation or redirection. DFAS has completed or is performing economic analyses and cost benefit analyses.

DFAS has completed:

- Civilian Pay
- Military Pay
- Military Retiree & Annuitant Pay
- Debt Management
- Contract Payment

DFAS is working:

- Travel Payments
- Transportation Payment

DATA ADMINISTRATION:

DFAS actively participates in the Data Model Integration and Oversight Subcommittee (DMIOS) of the DoD Data Administration Council.[16] Working through the DMIOS, DFAS is extending the DoD Strategic Data Model into the finance and accounting functional area and insuring cross-functional integration of finance and accounting data in other functional areas. Among DFAS's modeling efforts are:

16. These and other parts of the DoD Data Administration Program are featured in Section III.

- Defense Finance and Accounting Strategic Data Model - Completed
- DoD Pay Strategic Data Model - Completed
- Military Pay Tactical Data Model - Completed
- Allotment Management Operational Data and Process Model - Completed
- Re-engineering the Defense Debt Management System - In process

Mirroring the structure of the overall DoD Data Administration Program, the DFAS Data Administrator has established the DFAS Data Administration Council (DFAS DAC) comprised of the data administration personnel from each DFAS Center. The DFAS DAC develops DFAS's internal data administration procedures, such as for standardization, quality assurance, data analysis, and its data dictionary.

DFAS is responsible for the finance and accounting data management plan and plans for the individual finance activities' process improvements. These are documents used to guide and control implementation of data administration and data architecture changes within the finance activities. DFAS has developed an associated Data Administration Implementation Plan covering five years; this plan is updated annually. The implementation plan goes into detail for individual financial areas and migration systems discusses below. The plan guides the move from legacy data to standard data in the DDRS that can be shared with other DoD functional activities.

INFORMATION SYSTEM STRATEGY:

The DoD Comptroller, through the DFAS, has selected an information system strategy that takes maximum advantage from the legacy of existing information systems, minimizes cost and

technical risk, and addresses DoD-wide technical and functional integration issues. All migration efforts are approved by the Comptroller, acting as Chair of the Financial Management Steering Committee. The strategy is:

- Identify all financial legacy systems.

- Determine the capabilities of each system, including ability to meet government accounting standards, processing characteristics and data requirements.

- Rate each system. DFAS uses a rigorous process to compare information system capabilities to function, process and data criteria that systems must satisfy.

- Apply cost and benefit analyses to potential migrations.

- Select a migration system if one is found that has potential for satisfying functional requirements while improving benefits and reducing costs.

New system developments are limited to areas of functional or technical deficiency where cost analysis shows development to be less expensive and less risky than enhancement of existing systems. Migration systems, upon selection, are to be enhanced with functionality to cover multiple DoD Components, corrections to remedy known deficiencies, and improvements according to data and process model requirements. This incremental approach to system development reduces risk and costs and ensures enhanced systems in the near future that complement the statutory, regulatory, and audit requirements and that contain standard data and data definitions. These migration systems form the basis of a standard DoD system.

This extremely conservative strategy is yielding extraordinary results. By the end of FY 1996, 8 financial areas will be supported by 9 systems, down from 71 systems in

FY 1992, as shown below. These efforts are already being expanded to other areas of coverage.

Financial Systems Summary

Financial Area	FY 1992 Number of Systems	FY 1996 Number of Systems	Year Migration Complete
Civilian Payroll (Appropriated Funds)	18	1	Oct 1995
Civilian Payroll (Non-Appropriated Funds)	6	1*	Oct 1995*
Military Payroll	20	2	Dec 1994
Military Retiree and Annuitant Pay	8	1	Dec 1994
Travel Payment	11	1	Dec 1995
Transportation Payment	3	1	Feb 1994
Contract Payment	2	1	FY 1992**
Debt Management	3	1	Dec 1993
DBOF/Unit Cost Businesses	162	1	***

* Long-range goal - consolidate the two Civilian Payroll systems
** Enhancements planned for FY 1993 *** Details being developed

For areas with selected migration systems the status of each is as follows:

CIVILIAN PAY (Appropriated Funds)

Migration goal: Consolidation and standardization.

Migration system: Defense Civilian Pay System (DCPS)

Status: DFAS has defined personnel/payroll interfaces across all DoD Components, defined accounting and disbursing interface requirements, begun system and hardware modifications, and established the Denver Payroll Office as the first consolidated office in May 1992. Twenty-seven sites

have already been converted, processing over 150,000 personnel with a total of 340 sites to be implemented by October 1995.

CIVILIAN PAY (Non-Appropriated Funds)

Migration goal: Consolidation and standardization.

Migration system: Non-Appropriated Fund Civilian Pay System (NAFCPS)

Status: The standardization strategy has been defined, with system development and a fully operational system planned for October 1995. The long term goal is the consolidation of NAFCPS to DCPS.

MILITARY PAY

Migration goal: Consolidation and standardization.

Migration system: Defense Joint Military Pay System (DJMS)

Status: The standardization strategy has been defined, with system development and operation now planned for December 1994. Air Force and Army active duty are on DJMS and active duty Navy is scheduled to convert to this system in December 1994. The Marine Corps will continue with its military personnel and pay system. Future integration of military personnel and pay will be studied.

MILITARY RETIREE AND ANNUITANT PAY

Migration goal: Consolidation and standardization.

Migration system: Defense Retiree and Annuitant Pay System (DRAS)

Status: The consolidation and standardization strategy has been defined, with a fully operational consolidated standard system planned for December 1994.

TRAVEL PAYMENT

Migration goal: Standardization of travel order preparation, voucher preparation and claims settlement.

Migration system: Defense Travel Pay System (DTPS)

Status: The consolidation and standardization strategy has been defined, with planned implementation scheduled for December 1995. DTPS is now in use by DoD components.

TRANSPORTATION PAYMENT

Migration goal: Standardized transportation payment process.

Migration system: Defense Transportation Payment System (DTRS)

Status: The consolidation and standardization strategy has been defined, with a fully operational system planned for February 1994. The Navy and Marine Corps will be consolidated at a date to be determined.

CONTRACT PAYMENT

Migration goal: Standard contract payment process.

Migration system: Contract Payment System

Status: The consolidation is virtually complete. The system is already operational with potential upgrades in FY 1993 already identified.

DEBT MANAGEMENT

Migration goal: Standardized DoD out-of-service and contractual debt management process.

Migration system: Defense Debt Management System (DDMS)

Status: Functional operations will be located at each DFAS Center with DDMS hosted at the Denver Center. The system is planned to be fully operational in December 1993.

DEFENSE BUSINESS OPERATION FUND (DBOF)

Migration goal: Fully integrated, standard DBOF management system, which will include the cost accounting requirements.

Migration system: Defense Business Management System (DBMS)

Status: The concept development and definition/design are complete. The DoD Comptroller is undertaking an immediate review of accounting systems of existing DBOF and unit cost businesses to see if they should be transitioned to DBMS now, or whether they can remain until the standard cost accounting system for DoD is developed.

GENERAL ACCOUNTING

DFAS, in conjunction with the DoD Comptroller, is currently reviewing candidate systems for selection of a migratory general funds accounting system. A decision is expected to be made by the end of CY 1992.

TARGET SYSTEM STRATEGY: The designated migratory systems will eventually evolve ultimately into a single integrated finance and accounting system for all DoD. The single DoD finance and accounting system may consist of several integrated modules developed under the Defense IM process; the ultimate configuration depends on the evolutionary migration process. Available for use by all DoD managers and operating activities, it will encompass all finance and accounting data and provide all functional users access, as appropriate, to support their decision-making and day-to-day operations.

DFAS is developing comprehensive data and process models for the target DoD finance and accounting system. Detailed transition and implementation plans are being developed.

TECHNICAL MANAGEMENT PLAN: The Technical Management Plan (TMP) is the baseline document describing projects for development, installation, and operation of specific functional area information systems or subsystems. DFAS has developed overall financial systems TMPs that support individual finance activities process improvements and technical enhancements for the designated migration systems.

TECHNICAL INTEGRATION STRATEGY: The technological advances involved internal to financial process improvements must be done in concert with those for other functional areas. DISA's Center for Information Management (DISA/CIM) provides the central integration mechanism for all DoD functional areas. For the finance functional area DISA/CIM has:

- Developed a Technical Information Repository to receive from DFAS comprehensive data on the finance and accounting legacy information systems.

- Compiled and published the Technical Migration and Consolidation Plan for Finance for each activity in the finance functional area. The plan documents the legacy systems currently supporting the function, and maps the consolidation of the legacy systems into the selected migration systems.

- Developed and published the "Finance Near-Term Technical Architecture, Version 1.0," describing the desired near-term computing environment that will support users of finance information systems.

- Developed a set of finance Technical Integration Action Plans which define the products, approach, and schedule

which will permit execution of finance technical integration actions in accordance with finance information system consolidation plans and the DoD Technical Architecture.[17] Subjects of the action plans include workstations, data bases, user interface, and communications.

RELATION TO OTHER FUNCTIONAL AREAS: The financial community has continual crosstalk with non-finance areas to keep apprised of progress, share lessons learned on process improvements, and identify issues and resolutions that affect multiple functional areas. As can be seen in the following discussions of other functional areas, all interrelate to build a cohesive Defense information infrastructure.

Human Resources

Military Personnel

In January 1992, the Assistant Secretary of Defense (Force Management and Personnel) (ASD(FM&P)) initiated a review of military personnel CIM requirements and began examining the potential for process improvements and standardization of military personnel functions and supporting information systems.

The military personnel CIM program is proceeding on two levels: 1) a long term effort following corporate disciplines which will provide a basis for defining, standardizing, and integrating all military personnel functional IM requirements, and 2) rapid execution of key short term initiatives that will improve military personnel business operations.

17. The DoD Architecture is covered at Appendix M.

In July 1992, the ASD(FM&P) began a long term effort to standardize military personnel data elements. ASD(FM&P) plans to complete an enterprise-wide conceptual military personnel data model in the first half of FY 1993. Benefits of this effort include potential reductions in data elements, enhanced interchange of information, and support for single point-of-entry projects.

A military personnel Policy Review Committee (PRC) comprised of senior DoD military personnel executives was formed in August, 1992. The PRC serves as a forum for providing direction and evaluating the progress of the military personnel corporate IM initiative. The PRC members will also ensure that the appropriate, functional personnel resources are made available to staff the joint and service specific work groups which are the key to the corporate information program.

ASD(FM&P) has also begun the development of a enterprise-wide process model which will identify requirements for integration within and outside the military personnel community. This model will provide a framework for current and future projects targeting specific business functions. Key events and target dates in the military personnel area are as follows:

Event	Target Date
DoD-wide Process Model Defined	2nd Qtr/FY 1993
Conceptual Data Model Defined	2nd Qtr/FY 1993
DoD-wide Business Process Improvement Report	4th Qtr/FY 1993

Key short term initiatives to will improve military personnel business operations include the following:

Military Entrance Processing Stations (MEPS). In April 1992, ASD(FM&P) conducted its first business process improvement workshop, focusing on the MEPS requirements. An FEA is being prepared which will provide alternatives to

decision makers for improving military entrance processing. A prototype system will be developed and tested in the first quarter of FY 1993. Full development of the MEPS' information system will be under the Army's Sustaining Base Information System Phase II.

Family Relocation. DoD is determining how best to provide information about and to families being transferred. ASD(FM&P) has completed baseline cost and technical analyses for an associated information system. The system should be implemented before the end of FY 1993.

Source Data Entry. This project will examine the Navy's requirements for source data entry and the potential for one or more existing Service systems to meet the Navy's near-term needs. The estimated completion date is June 1993.

Recruiting. Presently, each Service has, or has planned, distinct recruiting support systems. Process improvements in this area take into account the legacy of Service systems, joint needs, cost reductions, and streamlining of recruiting procedures. The effort began in September 1992, with process and data modeling and functional economic analyses to be completed in the first quarter of FY 1994.

Civilian Personnel

Since its establishment by the ASD(FM&P) in October 1991, the Defense Civilian Personnel Center (DCPC) has made major progress toward a DoD standard civilian personnel automated information system. This effort is under the auspices of the Civilian Personnel Senior Policy Council. The Council reports to the Deputy Assistant Secretary of Defense (Civilian Personnel Policy/Equal Opportunity) and provides leadership and policy direction.

The DCPC oversees the functional review and integration of existing systems, ensures identification of future

requirements from a DoD-wide perspective, and manages the evolution of the Defense Civilian Personnel Data System (DCPDS). DCPC has responsibility for integrating requirements of all DoD Components. DCPC carries out the evolution collegially with the DoD Components, with Component activities under DCPC's oversight.

DCPC's approach is to work to the fullest extent possible through cooperation and active sharing of information, goals, and solutions. To aid this approach DCPC set up a DCPDS Executive Committee, consisting of the Center Director (chair), the Chief of DCPC's Information Systems Division, and executive representatives from the major DCPDS users, including the Air Force, Army, Navy, Defense Logistics Agency, Defense Mapping Agency, and OSD Washington Headquarters Services. This Committee is a decision-making body on issues such as standard functional requirements, developing a functional business plan, integrating Civilian Personnel Efficiency studies[18] and CIM efforts, overseeing Component implementation of standardization and business process improvement efforts, and coordinating with other functional managers.

DCPC is overseeing the following Component efforts to develop standard automated business process improvements:

Staffing and Career Management - Includes Air Force-led projects on Applicant Supply File and In-Service Placement, and an Army-led Acquisition Workforce career referral system;

Position and Performance Management - A Navy-led initiative which establishes a Core Document consisting of a Position Description, Staffing Requirements, and Performance Standards;

18. The Civilian Personnel Efficiency studies target streamlining personnel management, centralizing and unifying policy direction, granting more authority and flexibility to frontline managers, and reducing costs.

Integrated Personnel Action Processing - A Navy-led project based on its Electronic System for Personnel;

Civilian Human Resource Cost Management - Air Force-led efforts to create Position Management Decision Support and Injury/Unemployment Compensation Cost Control Systems);

Retirement Calculator and Claims Processor - Army-developed; and

Training - With the Army leading development of this module.

For each project, a detailed project plan has been developed, appropriate funding requested, inter-service functional requirements teams have been established, and CIM standard process modeling sessions have begun. In all the initiatives, a close working relationship is maintained with the Office of Personnel Management for possible federal government-wide application.

The DCPC asserts its Departmental decision-making role as necessary. The DCPC has directed all DoD Components to cease further development and modernization of any civilian personnel automated system or application, except as authorized and sanctioned by DCPC. This not only officially stopped expenditure of funds on civilian personnel information systems outside the CIM process but also reinforced DCPC as the focal point for future systems development for civilian personnel.

DCPC works closely with the DDI's Functional Information Manager (FIM) and staff; with the staff of the DISA's Center for Information Management, who serve as Technical Integration Manager (TIM) for DCPDS; and with the Air Force Military Personnel Center in San Antonio, TX, which serves as the DCPDS Technical Developer. The development of effective relationships among these staffs provide a structured method

for the flow of CIM funds for authorized projects. It also provides a structured approach for approval of sustainment actions on migratory systems until a single, DoD-wide system is deployed.

The DCPC has developed and forwarded to the FIM an Information Systems Strategy for DCPDS, which covers many technology aspects of the system's evolution.[19] The strategy identifies mid- and long-term actions for achieving CIM goals.

Priorities set by the OASD(FM&P) for FY 1993 are (1) continued development of process improvements begun in FY 1992; (2) standardize system support for policy decisions arising out of the Civilian Personnel Efficiencies studies and for initiatives on DoD downsizing efforts; (3) further the standardization and modernization of the interim system, especially those leading to use of the standard system by non-users and those leading to full integration of personnel and payroll data bases; and (4) support for new process improvement initiatives identified by the DCPDS Executive Committee.

Medical

The Assistant Secretary of Defense (Health Affairs) has directed numerous actions to strengthen the medical functions of the Department of Defense. The Medical Functional Steering Committee is developing functional management strategies and business process improvement plans, to include a supporting Functional Economic Analyses, in the areas of blood management, medical logistics, dental services, theater management, occupational health, and Coordinated Care.

19. Many of the technical aspects are covered at Appendix J.

Blood Management

This DoD-wide program provides quality blood products and services to military personnel, their families, and other beneficiaries. This is an element of national policy in both peace and war. The Defense Blood Standard System (DBSS) must ensure a safe and continuous blood supply to 8.9 million beneficiaries throughout the treatment spectrum. The Functional Economic Analysis, approved by the Medical Functional Steering Committee in March 1992, shows an expected 104% return on investment. Data modeling is now complete. Initial software development and testing should continue through the first quarter of FY 1993, with deployment set to begin in the second quarter. Benefits include efficiencies in transfusion service, lowered treatment costs, and reduced incidence of transfusion-acquired disease.

Medical Logistics

Medical Logistics includes hospital materiel management, wholesale integrated contracting, inventory control, assembly management, property accountability, technology and equipment planning, medical maintenance, medical treatment facility management, medical contracting, customer supply management, and the nation's medical logistic support infrastructure. An initial FEA was approved in June 1992, but required revision, given unforeseen budget constraints; the revision is expected in early FY 1993. The revised FEA covers medical cataloging, pharmaceutical cost containment, and medical supply distribution; it shows an expected return on investment of 980%. Data and process modeling are scheduled to begin in the first quarter of FY 1993 to support early prototyping for the Defense Medical Logistics Standard System (DMLSS) interim operating capability and final integrated development.

Dental Services

The military dental health care delivery system provides diagnostic, preventive, therapeutic, and maintenance health care services. The military dental health care organizations manage resources to maintain the highest degree of personal dental health, combat readiness, mission sustainability and personnel effectiveness. Major FY 1992 milestones include the completion of the Dental Functional Business Plan and preparation of the Dental FEA. Upon approval of the FEA, data and process modeling and functional requirements definition will begin.

Theater Management

This area supports the theater commander by providing a full spectrum of health care to conserve the fighting strength of combat forces. Clinical and other medical managers are analyzing medical business processes in a theater environment. The ASD(C3I) staff has assisted in the conversion of previously prepared analyses into CIM standard modeling products. A FEA will be developed and a preferred alternative identified. Concurrently, an effort is underway to develop an information systems migration plan, given the myriad of Service-specific and DoD systems currently supporting the medical theater environment, as well as an effort to test clinical automation in a field environment.

Occupational Health

Occupational Health focuses on the prevention and treatment of work-related sickness and injury. Activities include monitoring the work environment for potentially harmful chemical, biological, and physical agents and identifying individuals for medical surveillance who have been unduly exposed according to established standards. Medical services include the care and rehabilitation of occupationally

ill and injured workers. The Occupational Health subgroup has partially completed its work, briefed preliminary results to the Medical Functional Steering Committee, and received approval to proceed in FY 1993 with the business process improvement analysis, leading to completion of a FEA.

Coordinated Care

The Coordinated Care Program (CCP) will fundamentally change the way DoD health care is delivered, managed and financed. The CCP work group has completed the initial set of functional requirements and examination of needs for automation support. The efforts continue into FY 1993 to include a comprehensive business process improvement analysis, development of supporting FEA and Business Process Improvement Plan, and revision to the Tactical Information Systems Plan, completed in October 1991.

Also, three more business process improvement efforts begun in FY 1992 are in early stages of analysis -- Ambulatory Care, CHAMPUS Claims Processing, and Drug Testing. Other areas slated for coverage beginning in FY 1993 include dietetics, pathology, DoD/VA sharing, electronic medical records (documentation), order entry (order patient care), nursing, cardiology, and pharmacy.

With the approval of the Deputy Secretary of Defense, DoD is performing an in-depth study of medical performance factors. This will cross-validate proposed top level performance factors against

- the mission, goals, and objectives of the DoD health care program;
- the existing functional decomposition of the DoD health care mission and functions;
- planned improvements in business practices;

- existing business process and data modeling; and
- performance factors being developed for medical treatment facilities.

This effort will identify categories of performance measures and ensure the selected performance factors appropriately relate to and are supported by current and planned medical business processes, data and systems of record.

Medical Identification Card Test. DoD is planning a Medical ID Card test of automated personnel identification media. This single location (Oahu, Hawaii) covers the full range of DoD Components supported by the DoD Health care program.

Strategic Business Planning and Management. This effort integrates disparate planning and evaluation activities, medical performance measures and evaluation programs, and extant strategic planning activities within the Office of the ASD(Health Affairs) and the Military Medical Departments. The project will specify of on-going strategic management process for all the Military Health Support System (MHSS). Technical issues affecting the medical strategic planning process are at Appendix K.

Reserve Component

The Reserve Components support all OSD-level and Component-level business process improvements related to the Reserve. The Reserve Components are activity participating in business process improvement efforts described in detail under Military Personnel, Finance, and Material and Logistics to make sure the special needs of the Reservists are covered.

Readiness Assessment

There is an ongoing systems development effort by the Assistant Secretary of Defense (Reserve Affairs) (ASD(RA)) that organizes data from all of the Services for the Reserve Components to assess readiness in the area of equipment. This system, the Readiness Unit Priority System - Equipment Module, is being evaluated as a potential migration system for the active components as well.

Reserve Command and Management

The Army Reserve and Air National Guard have been performing basic business process analysis throughout the year and will continue the effort to improve overall performance and service of the United States Army Reserve and Air National Guard.

The National Guard Bureau has established a work plan to assess the business processes at the U.S. Property and Fiscal Offices, beginning in the second quarter of FY 1993.

The most significant impact of the CIM initiative in the Reserve Component will likely be realized in the business process improvement of mobilization and demobilization. This effort began in the Army under the direction of the Assistant Secretary of the Army for Manpower and Reserve Affairs during the third quarter of FY 1992, with a detailed action plan and use of the DoD standard methodology to perform the analysis, set goals, and determine schedules and participants.

Reserve Retirement Data Management

In conjunction with the ongoing CIM initiative for military personnel, the ASD(RA) has designated Reserve Retirement Data Management as a Reserve CIM initiative. The project began in September 1992. Involving functional experts

from all the Services and Components, it will examine current business procedures in the collection, management, and transfer of retirement data. It will establish improved and standardized business processes for the Services and recommend a standard migration system.

In 1986, DoD was given authority legislatively to calculate payments into the Military Retirement Fund based on separate determinations for full-time and part-time military members. The data available to make such calculations for part-time members of the Reserve components was inadequate, so DoD began a major effort to improve the availability and accuracy of Reserve data. Significant improvement was made, but much remains to be done. The DoD Retirement Board of Actuaries has informed the DoD Comptroller that they continue to have the same reservations concerning the information necessary to make determinations with respect to part-time participants which they first expressed to the Secretary of Defense in 1984. The ASD(RA) determined that CIM methodologies will be used to determine a coherent Department-wide approach to business process improvements and provide a baseline for cost determination.

The initial phase of this project involves functional and policy experts at the supervisory level from the Active and Reserve components of each Service. This work group convened September 21, 1992 to develop a high level description of the business processes and define the scope of work. The one-week group session used IDEF techniques[20] to model the business processes used by the various Components.

The second phase of the analysis will involve individuals with detailed functional expertise in specific aspects of the crediting of service for and the management of information associated with Reserve retirement. This phase will take

20. Activity modeling techniques are described in Appendices B and C .

about one week for each Service. With the help of facilitators, these functional experts will develop a baseline of each Service's current Reserve retirement crediting and information management process and identify alternatives.

After the results of these initial work group sessions have been analyzed, a third work group will be convened to conduct a functional economic analysis. The participants in this group will gather data on cost and performance attributes of alternative business process improvements and perform comparative analysis of the alternatives. Time lines for this group have yet to be determined.

The end result will be positive changes in crediting service for Reserve retirement and the collection, management, and transfer of information from both the Active and Reserve Forces.

Materiel and Logistics

DoD Acquisition Mission

A DoD Acquisition Strategic Business Plan will be developed setting forth corporate level objectives and operational goals. It will ensure that an integrated CIM business process improvement approach is pursed by the spectrum of functional organizations and business activities within the DoD acquisition mission. The Office of the Under Secretary of Defense (Acquisition) will be assisted by a contractor with work beginning in early FY 1993 involving two phases preparing an effective task approach followed by the development of the Plan. The task approach will be identified from alternatives, establishing the methodology and task sequence, organizing a task team, and defining the scope of the effort. The initial task phase will include apprising DoD senior acquisition principals on the project and organizing

them as a corporate board panel. The second phase, developing the Plan, will involve the use of standard DoD modeling tools to identify at a top level the acquisition long range objectives (10+ years) and operational goals for the six-year planning period. The Plan will be the major business guidance document governing CIM business process improvement for the DoD Acquisition mission.

Materiel Management and Distribution

The ASD(P&L) serves as the functional lead for the area of logistics management. The ASD(P&L) established the Joint Logistics Systems Center (JLSC) in March 1992 with the responsibility for identifying the requirements of a standard DoD materiel management system. The JLSC has identified eighteen systems in the materiel management area that will serve as near-term initiatives to move the DoD toward a standard set of migration systems. The fielding of these systems will begin in the first quarter of FY 1993.

In addition to the selection of near-term systems, the JLSC published in May 1992 the first in a series of three plans to guide the development of Standard Logistics Systems. The first plan is the DoD CIM Functional Logistics Plan. This plan provides a comprehensive, integrated logistics business and information systems plan to guide the JLSC and the Defense Distribution System Center. The business process improvements to implement this plan are being identified and documented using the standard CIM techniques[21]. The model includes Materiel Management, Depot Maintenance and Distribution functions "to-be" implemented under the Department's information management principles.

The second plan is the Logistics Business Strategic Plan. This plan is in draft form and is being coordinated with the

21. Standard modeling techniques are described in Appendices B and C.

Military Services and the Defense Logistics Agency (DLA). It is expected to be published by the end of October 1992.

The third plan will lay out, in detail, the migration from the current legacy systems of the Services and DLA to the migration system(s) to the objective Standard Logistics System. This plan will be released in draft form in the first quarter of FY 1993.

The selection, design, development and implementation of the distribution function is the responsibility of the DLA, since they are responsible for all of the Department of Defense supply depots. The DLA has selected the Army Area Oriented Depot Modernization (AOD-MOD) as the distribution support migration system for the Department of Defense. DLA is in the process of implementing AOD-MOD at two locations as part of the initial transition to this system.

Depot Maintenance

The Depot Maintenance area has adopted an approach consistent with the CIM guidance and have established a two tiered set of activities:

(1) Establishment of corporate baseline systems with subsequent re-engineering and:

(2) The pursuit of Near Term Initiatives. Two near term initiatives are the Programmed Depot Maintenance Scheduling System (PDMSS) and the Hazardous Material Management System (HMMS).

Procurement

The CIM Procurement Council has initiated a business process review of all Procurement-related activities. This includes not only high-level activities, but base and installation level also. An "as is" baseline has been

developed which identifies an initial set of non-value added activities which are presently being reviewed to determine corrective actions. Development of a Procurement Strategic Business Plan is underway.

Preparation of a high level Functional Economic Analysis (FEA) document has been initiated. The objective is to achieve a full FEA by June 1993.

Additionally, a review and evaluation of all Procurement-related systems is being conducted, with initial inputs received from Components. These inputs are being reviewed and "on-site" evaluations will be accomplished where necessary to obtain validated information, especially for the systems requiring larger investments. This information will be an input into the preparation of the FY 1993 baseline.

The Procurement CIM Council is also reviewing, for subsequent approval, a concept paper outlining a strategic plan to implement an overall information systems migration strategy within DoD Procurement. This paper is being coordinated with the Technical Integration Management Organization of DISA to insure consistency with the CIM Technical Reference Model.[22]

In parallel with the above, the Procurement Council has approved an Air Force initiative for base-level procurement designed as a lead I-CASE project to improve the way installation-level contracting does business. This will modernize the current Base Contracting Automated System (BCAS) that supports not only the Air Force but other Components, and move to a CIM-compliant open systems environment.

22. The Technical Reference Model is part of the DoD Information System Architecture, described at Appendix M.

Environment

A Charter providing for the establishment of a Functional Activity Program Manager (FAPM) under the leadership of the Army has been coordinated and is awaiting ASD(P&L) signature. The FAPM office site has been secured in the Washington metropolitan area and an office automation system installed. A core staff recently reported, and the Services and DLA are identifying additional personnel resources that will be needed upon full determination of the scope of the Environment CIM effort. A recently concluded strategy planning session conducted via an Electronic Meeting System facility identified the major business activities for individual process modeling and a time phase plan for its accomplishment. Concurrently, a data call has been drafted soliciting systems inventory data for establishing a systems baseline so that the process of identifying migration systems candidates can proceed in parallel.

Computer-Aided Acquisition & Logistics Support (CALS)

The Joint CALS (JCALS) program has prepared the joint requirements to design and implement a standard system for the preparation, management and publication of Technical Manuals and Technical Orders. This is intended to be the first application under the JCALS program.

The DoD CALS Executive Office has identified a number of CALS programs where the management and oversight of the program will be transferred to the Joint Logistics Systems Center. These systems will be reviewed for integration into the standard logistics processes.

The development, coordination and testing of CALS Standards will be transferred to the DISA Center for Standards within the next sixty days. The DoD CALS Executive will

retain the responsibility for identifying the requirements for the CALS standards.

The next major effort in the CALS program will be to establish a fully coordinated policy to assure the use of CALS standards and methods in existing and future weapon system procurements. The establishment of policy, development and testing of data standards, and the assurances that the defense industry can provide the required data will enable DoD to "reconstitute" an industrial capability and assure quick response in times of emergency.

The emphasis of the CALS program is to establish a DoD policy that would permit weapon system contractors to have ready the necessary technical data in time of emergency, enabling the U.S. to reconstitute its industrial manufacturing capability. The use of the CALS standards in conjunction with the research and development process will enable the rapid conversion to production of needed weapon systems if required. The establishment of standards, testing of those standard and the development of manufacturers' capability are all needed in this time of "downsizing" and reduced DoD budgets.

Electronic Data Interchange

One DoD-wide project being tested is a gateway to all single interfaces with multiple commercial Value-Added Networks (VANS). The initial test of the gateway is to permit the access and exchange of data related to DoD solicitations for goods and services by a number of DoD procurement activities.

One issue facing the EDI area is the evaluation of a switch from the U.S. Standard X.12 for data exchange to the United Nations EDIFACT standard used by other countries in the EDI environment. The ability to use EDIFACT standard for EDI will place the United States in a competitive environment as

well as permit the exchange of data with United Nations countries.

Real Estate and Facilities

The Assistant Secretary of the Army (Installation, Logistics & Environment) has recommended the CIM process be applied to the management of DoD real estate and facilities. The Assistant Director for Real Property will hold a meeting of the interested organizations to decide on the establishment of a CIM group, appoint an executive agent, and identify needed resources.

Command, Control, Communications and Intelligence (C3I)

Simultaneously with the conception of CIM plans, the ASD(C3I) asked the Chairman of the Joint Chiefs of Staff to specify the kind of information infrastructure DoD will need in the twenty-first century. It was already understood -- prior to the fall of the Berlin Wall and the dissolution of the USSR -- that smaller, more flexible forces would be needed to cope with rapid, unexpected threats. In October 1991, the Chairman issued the "Command, Control, Functional Analysis and Consolidation Review Panel Report" (C2 FACRP).

The C2 FACRP stated that the needs for information technology will be driven by the requirements of small, mobile, rapidly deployed and locally managed joint forces. These small forces must have the same information management capabilities as are currently available to large, higher echelon commands. The C2 FACRP also established the principle that the local commander must have easy access, from the same display device, not only to military, positioning, and intelligence information, but also have access to all relevant

data such as manpower, logistics, medical and transportation support.

In June 1992, the Chairman of the Joint Chiefs of Staff issued the related "C4I for the Warrior" report. According to the report, the roadmap to completing an information network that is "seamless, secure, interoperable, global" includes:

> "(1) a Quick Fix Phase that will achieve interoperability between existing C4I systems by use of translators, adherence to a common set of joint standards, rigorous testing for conformance, and configuration management enforcement;
>
> (2) a Mid-Term Phase that achieves total interoperability for new C4I systems during development, testing, acquisition, and implementation and establishes a joint wide-area network based on digital commonality; and
>
> (3) an enduring Objective Phase during which evolving technologies and techniques are continuously identified and assimilated and a fully developed C4I network of fused information, updated automatically, is available from which the joint warfighter can pull information to provide the "picture" required on a single display, anyplace, anytime, in the performance of any mission."[23]

Accordingly, the Deputy DDI for C3I Functional Information Management (C3I FIM) is working with the DISA Joint Information Engineering Office (JIEO) to assist with the "quick fix" phase. This project will implement the initial "quick fix" interoperability actions to design and prototype a C4I interoperability translator that will provide interoperability between the Standard Theater Army Command and Control System (STACCS), the Joint Operational Tactical System (JOTS) and the Air Situation Display System (ASDS). Also, the C3I FIM and the JIEO are assisting the Joint Staff to conduct a functional improvement analysis on C4 architectures. The Joint Staff (J6) is modeling the operational information requirements of the deployed warfighting forces (the Joint

23. Copies of "C4I for the Warrior" can be obtained from the C4I Architecture & Integration Division (J6I), J-6, The Joint Staff, The Pentagon, Washington, DC 20318-6000.

Tactical Force (JTF) and tactical user). They completed their initial session in September 1992 and will continue the project in FY 1993.

Other C3I business process improvement projects include:

Background Investigations. The efforts with DIS have become somewhat of a "flagship product" for the C3I FIM and the DDI. These efforts will expedite the background investigation process, giving DoD faster access to appropriate private sector and academic talent. The initial FEA shows a projected cost savings in the hundreds of millions of dollars.

Defense Transportation. USTRANSCOM, under it's new charter, is the single manager of the Defense Transportation System. In August 1992, USTRANSCOM, together with other DoD transportation experts from MCS, JLSC, Joint Staff, MTMC, Air Mobility Command, Army Deputy Chief of Staff-Logistics, and the U.S. Army Strategic Logistic Agency, held a two week preliminary IDEF workshop to depict the entire spectrum of defense transportation in an IDEF model. Due to time constraints the scope of this workshop was limited to producing the top two "as-is" levels of the model. Follow on projects will be undertaken to complete this initial modeling effort. Additional actions will include the establishment and operation of a migration system for the Joint Transportation CIM center and the development of a target system.

High Performance Parallel Interface (HPPI). Working with the National Security Agency, this project involves the development of a parallel-to-serial interface to be used with Asynchronous Transmission Mode/Synchronous Optical Network connectivity to DoD's high capacity processing centers. Advanced technology demonstrations will be conducted using the HPPI device over a Washington, DC fiber network being installed this year. These demonstrations will lay the foundation for the DoD information infrastructure long-term

goal to provide secure information transfer among DoD repositories in a standard, economical manner.

Space and Warning System Center. This is a two part project. In the first, IDEF will be used to document the current "as-is" systems engineering model and define interfaces between the various organizations involved with definition or integration of the Cheyenne Mountain Complex. The second, develop space mission information models is the activity to use the information engineering process to develop process and data models for the specification of the databases needed for the development of the Space Mission.

Joint Military Weather Support. The Air Force has the lead in a joint working group (DISA, Joint Staff, and the Services) to recommend and initiate actions to improve interoperability of weather support for joint operations.

The Defense Modeling and Simulation Organization is starting activity and data modeling to assist in making recommendations to improve the interoperability of modeling and simulation with C3I operations.

Other efforts slated to begin in FY 1993 include IDEF analysis of secure voice requirements and data modeling for legacy C2 system.

Section III. TECHNICAL PERSPECTIVE

Improvements in DoD's information infrastructure are essential for achieving CIM cost reduction targets while improving effectiveness of defense support operations. The pressing need for improving the infrastructure is readily apparent when its current $15 billion-per-annum environment is catalogued:

Infrastructure Item	DoD Inventory	Characteristics
Data Processing Installations	1,700	Average age over 11 years. Labor-intensive. Security measures need improvement. Do not share workloads or act as back-up.
Central Design Activities	38	Excessive maintenance. Long development cycles. Non-standard development. Low maturity levels.
Workstations and Terminals	650,000+	Growth chaotic, costly. Security exposures. Insufficient interoperability. Improvised applications. Incompatible data bases. High training, support costs.
Long Distance Networks	102	Constructed to support traffic for specific organizations or applications. Costly lack of interoperability. Labor-intensive. Poor capacity utilization.
Local Area Networks	10,000+	Support local preferences only. Insufficient interoperability. High support and maintenance costs. Major security exposures.
Lines of code	1,400,000,000	Performs tasks necessary to pass, interpret, and process data. Must perform non-value-added functions due to differences between system makes, models, and versions. Much ad hoc development. Excessive maintenance. Labor-intensive.

Current DoD Information Infrastructure

Clearly, a new paradigm is required to respond to the combat information and support needs spelled out by the Chairman of the Joint Chiefs of Staff. The information structure supporting the defense mission must provide an end-to-end information support capability encompassing collection, generation, storage, display, and dissemination of information, Department-wide.

In September 1992 the Deputy Secretary of Defense approved designation of DISA as the central manager of DoD's information infrastructure. As with all DISA information management activities, policy, direction, and oversight will come from the ASD(C3I) through the Director of Defense Information. At the request of the Deputy Secretary of Defense, the ASD(C3I) has established a Defense Information Infrastructure Coordinating Group to assist in the development of a plan for implementing a Defense information infrastructure. This work will be done in coordination with the the DoD Comptroller, the Secretaries of the Military Departments, the Chairman of the Joint Chiefs of Staff, and other Department officials.

The DDI directs actions necessary to form the technology building blocks for the information infrastructure.[24] This is done primarily through the Deputy DDI for Information Technology. Some of the building blocks are readily available commercially, and some require research and development, to include cooperative work with non-DoD agencies.

The DISA Center for Information Management (DISA/CIM) is the primary organization for acquisition, development and integration of the building blocks. DISA/CIM is responsible for establishing the technical integration strategy for DoD, and managing the technical integration and standardization of

24. The April 1992 CIM Status Report describes the technical objectives of the Defense information technology infrastructure.

information management in the DoD. DISA/CIM is accomplishing this responsibility by integrating technical solutions and ensuring they comply with the information management functional priorities of the DoD, primarily in integration boundaries between the Enterprise and Mission and between the Mission and Function Levels of DoD's CIM Architecture, depicted in Figure III-2.

ARCHITECTURAL COMPONENTS												LEVELS
Graphic Information Window, Personal Tools, Inquiry Languages, Customized Applications, Prototyping Tools, Private Applications and Files												Personal
Application Development & Maintenance												Application
Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Intelligence				Command & Control				Support				Mission
DoD Policy, Doctrine, Standards, Reference Models, Data Management and Tools, Shared Computing and Telecommunications.												Enterprise

Figure III-2. Organization of CIM Architecture

Although all aspects of the architecture are interrelated, they can be addressed independently to some extent. Much has been shown in DoD's functional areas. Many technical architectural building blocks are being addressed simultaneously, but with emphasis on sharing results across the technologies.

At the Enterprise level, it is DoD's goal to remove barriers imposed by proprietary hardware and software, unique data, and narrowly-applied operational characteristics of information systems. DoD is moving toward open systems that implement sufficient non-proprietary specifications for interfaces, services, and supporting formats to enhance the portability, interoperability, and scalability of properly engineered applications software. The DoD open systems architecture describes the structure of its components, their interrelationships, and the principles and guidelines governing their design and evolution over time.[25]

The Department has moved aggressively to define an open systems architecture that meets its needs to protect assets and that is based on a tailoring of the National Institute for Standards and Technology (NIST) Application Portability Profile. In consultation with NIST and participants across the Department of Defense, the DDI and DISA/CIM have undertaken the development of a technical architecture that will provide guidance to system engineers and developers for the next decade; completion date is scheduled for the third quarter of FY 1993. Guidance in the selection of specific technical standards are being published in a series of iterative versions of the DoD Technical Reference Model.[26]

In addition, the Department is specifying a methodology by which DoD-wide information system architectures (application level) will be developed. The methodology and its associated implementation strategy will establish the process to ensure the transition of the Department to an open systems environment. The methodology will be incorporated into the

25. Specifics on the strategy, deliverables, and progress on initiatives for the DoD open systems architecture are at Appendix M.

26. A description of the Technical Reference Model is found at Appendix M

Implementation Manual of the Technical Architecture Framework, a companion document to the Technical Reference Model.

The Graphical User Interface (GUI) -- a Personal Level CIM architecture component -- and the GUI Style Guide will be incorporated into the Framework. Improvement of the standard user interface continues to receive special near term attention. A consistent GUI based on open system standards is expected to improve user productivity and reduce training costs over the long term. Based on a DoD style guide to system developers, the user interface will present a consistent look and feel to users Department-wide, yet satisfy the particular needs of users accessing vastly different computer applications.

The DDI has several initiatives to address software at the Application, Function, Mission and Enterprise Levels: "One of the primary technical purposes of the CIM initiative is to bring order into the pervasive software chaos."[27] Following on the heels of Ada designation as the DoD standard computer programming language, DoD is seeking to standardize a set of associated software development tools. DoD is now in the process of acquiring that tool set through an Integrated Computer-Aided Software Engineering (I-CASE) contract.[28] The I-CASE solicitation, released in August 1992 after considerable cooperative efforts by DoD and industry, specifies off-the-shelf components to provide a standard software environment. The contract will include training, technical services for developing and maintaining systems, IDEF process and data modeling tools, a full range of software life-cycle development tools, and an information repository for integrating data used among the tools.

27. From the address by the DDI at the Automated Planning System Integration Symposium, May 12, 1992.

28. Steps leading to contract award are listed at Appendix N.

Software developed using I-CASE tools will go into the DoD software repository, where it will be available for reuse in other applications. The software repository is already in business, with its grand opening under DISA/CIM in July 1992. The repository is based largely on the Army's Reusable Ada Products for Information Systems Development (RAPID) system. For this, the Army received the Gold Nugget Award[29] because

> "This forward-thinking information resource strategy fully exploited the advantages offered by use of common software components via [an] automated catalog and retrieval system...Benefits attained include lower development costs, accelerated production schedules, improved life-cycle maintenance, and elimination of software project redundancies."

The IDEF activity modeling tool set to be included in the reusable software environment is a candidate for government-wide standardization through NIST.[30]

DoD is also looking into better software nurturing. DoD is moving evaluation of the software environments out of the research stage into the operational stage. The Software Engineering Institute developed a Capability Maturity Model that indicates how well an organization can be expected to produce effective and efficient software. DoD will apply this model to its central design activities (CDAs) to determine the scope of improvements in the software production environment at each. Augmentation of the maturity model to develop a set of software management metrics [31]recently began.

The reason for the emphasis on software is to reduce the time and effort required to rapidly respond to changing

29. The Gold Nugget Award is described at Appendix A. The software repository is an element of the DoD software reuse initiative, detailed at Appendix O.

30. These and other standardization efforts are covered at Appendix P.

31. Appendix Q covers the software process improvement initiative; Appendix R the software management metrics program.

defense needs. Rapid response also requires that DoD make innovations in procurement vehicles to streamline the technology acquisition process and provide information technology assets to users faster than is possible today. The Information Technology Reuse (ITRUS) program will seek innovative methods and techniques to operate its customer service, acquisition and asset management functions. DISA, through its Defense Commercial Communications Office, has set a target to reduce contract award time to as few as 21 days for acquisitions under ITRUS. In May 1992, the ASD(C3I) announced plans for an ITRUS demonstration project in the fall of 1992. The demonstration on October 1, 1992 successfully used an electronic bulletin board system[32] to focus on the information technology commodities acquisition process. It allows industry to view requirements, submit quotations, and receive notification of contract awards electronically.

Fee-For-Service

Since the electronic industry delivers annual cost/performance improvements in the 30 to 40 percent range, adoption of fee-for-service is a prerequisite for an economically sound approach to the expected modernization of computer centers that the CIM initiative requires. Fee-for-service makes it possible to establish a measure of actual computer center productivity gains. Fee-for-service for design centers will make it possible to establish a measure of competitive excellence for software efforts.

The DoD Comptroller orchestrates the complex transition to fee-for-service[33] funding for DoD's data processing installations (DPIs) and CDAs. During FY 1992 DoD Fee-For-Service Task Group developed unit cost goals at 37 selected regional DPIs and standard system CDAs. Fifty-seven more

32. The demonstration project is detailed at Appendix S.

33. Fee-for-service strategies are listed at Appendix T.

sites are to be placed on unit cost during FY 1993. The DoD Comptroller has established long-range strategies to implement Fee-For-Service at DPIs and CDAs.

FEATURE TOPIC: DATA ADMINISTRATION

A vigorous data standardization effort is one of the keys to assuring that DoD's systems interoperability and cost reduction objectives are met. Without data standardization, gains made through improvements in software production would be lost in having to use them to translate and verify data. For CIM to succeed, DoD must eliminate unnecessary labor in transcribing, translating and reinterpreting the same data.

Poor data management practices show up as costly errors in the conduct of business affairs, as excessive transaction costs, and as added management layers to monitor and control work. When the business is defense, the effects can be more far-reaching -- and deadly. The "fog of war" is not necessarily created by the enemy. Therefore, DoD is proceeding with standardization as the highest systems architecture priority. The data standardization policy[34] includes the intelligence community, command and control and weapon systems.

The DoD Information Management Principles (Figure I-1) state, "Data will be entered only once,", so it can be reused as the information passes from its origin to its final use.

The CALS program, described in Section II, is an example of the vital role of data standardization. CALS addresses timely and efficient handling of information that supports weapons and commercial products acquired by the DoD. The purpose is to improve productivity within DoD as well as reduce the paperwork required of DoD suppliers. Of special

34. DoD Directive 8320.1, "DoD Data Administration," September 26, 1991.

interest are methods and standards for electronic transmission of engineering drawings, technical manuals, and manufacturing documentation.

Under the CIM initiative, DoD issued formal DoD policy, DoDD 8320.1, on DoD Data Administration in September 1991. This replaced data element and data code policy that was issued in 1964. (This is not a typographical error. The policy was that old.)

Data Administration Program

The best way to ensure accurate and timely data is to make certain that everyone is using the same data and has a clear understanding of its meaning. Some things which support this data sharing are: standard names and definitions, controlled redundancy, minimized data handling, and improved data security. These are all aspects of the DoD Data Administration Program.

The Data Administration Program provides comprehensive, long-term direction to improve the planning and management of Defense data resources. This direction takes advantage of technological advances which make it possible to manage data as a shared resource, separate from the programs and applications which use it.

As a corporate resource, DoD data is not owned by any person or organization. Rather, each data element has a data steward which is the organization with the functional expertise on that element of information and has responsibility for defining and describing it. It must also have a designated single point-of-entry for values of that data element to be collected for storage and distribution in the DoD "corporate" database. All DoD standard data information will be stored in a central dictionary or

repository and the names for every data element will be based on a single DoD data model.

In October 1991, the ASD(C3I) designated DISA as the Department's executive agent for data administration. In turn, the Director of the Center for Information Management (DISA/CIM) was designated the DoD Data Administrator. DISA/CIM's Data Administration Strategic Plan (DASP) of August 1992 describes six goals for the Data Administration Program:

Operational Central Repository

Standard Data

Common Procedures

Quality Data

Education, Training, and Consultation Services

Effective Infrastructure

Each of the goals is supported by specific objectives and timeframes. The DoD Components and Principal Staff Assistants have prepared Data Administration Implementation Plans (DAIPs) to outline actions for achieving the goals and objectives in their areas of responsibility.

The Data Administration Program's overall focus is to facilitate interoperability among operational forces, and the organizations and systems that support those forces. In order to do that we must give those forces the data resources that they need to make good decisions, and that information must be timely and accurate! An analogy could be used for any of the resources that commanders need in combat; for example, giving a commander a broken tank or delivering it after the fight is over does not help win the battle. The same is true of incorrect or late data.

The six goals identified in the DASP contribute to getting accurate data to the people that need it in a timely manner and making sure that it can be understood when it gets there. The data can then be put together to form vital information that enhances knowledge and good decision-making.

Strategy

The Data Administration Program represents a dramatic change to the way business has been conducted in the Department of Defense with respect to data management. It requires that the entire program has to be built -- from infrastructure to policy to standards to procedures to tools. Each phase of the program must, out of necessity, include extensive education and training. While some things can be done simultaneously, others must be done sequentially, if for no reason other than the need to bring individuals up to the level of understanding necessary to implement the program.

The initial steps in the program were taken last year with the publication of the DoD Data Administration policy, DoD Directive 8320.1. Infrastructure was developed in the form of the assignment of the DoD Data Administrator, the designation of Functional Data Administrators in the Office of the Secretary of Defense and Component Data Administrators in the Services and Defense Agencies, the establishment of the Data Administration Council (DAC), and the creation of the Center for Data Administration Operations. Additionally, an Interim Data Dictionary was put in place.

In the past six months a great deal of effort went into the development of procedures to implement data administration policy. The procedures evolved as people broadened their knowledge and wanted to expand the scope of the manual. Additionally, the "line" between describing specific procedures and educating and philosophizing about various

aspects of data administration became difficult to distinguish. For these reasons, it was decided to write modular procedures. This permitted acceleration in developing data element standardization procedures which are critical to the entire DoD Information Management program.

It was agreed that a data element naming convention was needed similar to the taxonomic classification system used for naming plants and animals. A naming convention based on the results of data modeling was adopted with the results to be stored in a central repository. Work began both on the repository, the Defense Data Repository System (DDRS); and on the DoD Data Model.

Progress

Strategic Planning. In August 1992 the DASP was distributed. DAIPs based on it are being analyzed. FY 1993 planning guidance is being prepared. The Navy survey on data dictionaries was completed in the summer 1992 and is also being used as input in developing the planning guidance.

Central Repository. The DDRS became operational in an open system environment in August 1992. Over 70,000 migration data elements have been identified and more than 39,000 collected. Several thousand of these have been loaded into the DDRS with the rest soon to follow. Over 300 developmental prime words have been put into the DDRS for consideration as candidate standard prime words. (These are the result of data modeling efforts and are the basis for data element names.) Thirty-four candidate standard data elements have been identified and have begun to go through the prime word approval process which has just been developed. This is a non-automated process at the moment but will be automated as soon as possible.

Procedures Development. The draft Data Administration Procedures manual, DoD 8320.1-M, was significantly modified and was distributed in September 1992 for informal comment.

The draft Data Element Standardization Procedures manual, DoD 8320.1-M-1, was revised to accommodate comments received and distributed for formal coordination. It is anticipated that it will be published in November 1992.

DoD Data Model. A draft high-level cross-functional DoD Data Model was completed in April 1992. The Component view has just been added and is undergoing validation. At the same time, a subcommittee of the DAC, called the Data Model Integration Oversight Subcommittee (DMIOS) has been looking at existing data models in the Department of Defense in an effort to accelerate the development of the DoD Data Model. This work has led to the identification of thirty-four candidate standard prime words. Additionally, the data modeling effort has joined with work being done to develop a DoD Enterprise Model and other work which shows promise of evolving into a full DoD Process Model. This means that all the key modeling pieces necessary for data administration should be in concert.

Infrastructure. Although there are still data administration personnel shortages within DISA, the situation is improving. Of greater concern is the staffing in the functional areas to support data administration. The role of the functionals in data administration is a new requirement and there has been difficulty in identifying resources to perform the required tasks.

Training. Data administration training was conducted initially by outside experts to key personnel to get an initial impetus to the program while in-house classes could be developed. A curriculum was developed, classes prepared, and pilot classes conducted over the summer of 1992. Over ten

classes have been conducted with about 200 people receiving training on data standardization and DDRS operations.

Migration Prototype. A cross-functional migration prototype has been started which involves eight migration systems from the personnel, finance, and medical areas. Migration procedures have been developed and the analysis and reverse engineering of the data in those systems has begun.

Shared Database Prototype. This effort to identify how to collect and distribute DoD data has just begun. This project will help determine what subject area databases need to be established and perhaps even where they should be located.

Summary

While to some there is frustration about the speed with which the DoD Data Administration Program is moving, others are afraid it is moving too quickly to accommodate the major cultural change which is required. Certainly, business will be conducted differently than it is today -- there will be much greater functional responsibility for data; DoD will think more in terms of data vice files and systems; data will be shared and readily available; and system design and development will be rapid, small, and specific and take data accuracy for granted.

The basic building blocks are coming together, but the most difficult work is yet to come. DoD must find the best way to transition the data in its legacy and migration systems, which today are interconnected in a gigantic Gordian knot. DoD also has a difficult task in ensuring security in an integrated database environment, particularly with the aggregation of data and security inference problems it presents. Additionally, up to this point DoD has not begun to address other types of data -- audio, visual, imagery, and business rule, to name just a few. This data is important and

will become more so with the development of multimedia and artificial intelligence capabilities and the use of fiber optics and satellite communications.

Over the last six months DoD has taken some significant steps in moving this vital program forward and the pace should continue its acceleration as the individual building blocks form a broad foundation for this monumental program. In the end it will lead to more accurate data -- current, synchronized, and consistent -- being available to users throughout the Department who will be able to access the data they want, when they need it, and in a way they can use it.

Section IV.
Budget Status and Plans

DoD's information technology budget stands at $9.5 billion. This amount remains almost constant for FY 1991 to FY 1993. At the start of the CIM initiative, in FY 1989, the DoD information technology budget for 1989 was $9.0 billion. Given the inflation rate of 14.2% from FY 1990 to FY 1993, the spending level for FY 1993 is $780 million less than at the the start of the CIM initiative.

Automation is the preferred means for increasing office productivity in U.S. businesses. DoD reduced funding in several areas for duplicative and unnecessarily redundant programs. Throughout, mission accomplishment is being maintained or improved. The performance measure focus by which the progress of the CIM initiative must be judged is achievement of the Defense Management Report savings. The present estimate of CIM-enabled DMR savings is $36 billion through FY 1997.[35]

CIM Central Fund

The CIM Central Fund, budgeted by Washington Headquarters Services in support of the Office of the Secretary of Defense, extends business process improvements and establishes an integrated, interoperable infrastructure. The DDI provides overall guidance for the use of these funds, nominating infrastructure programs which should be adopted Department-wide, identifying problem areas and, if necessary, initiating research to fix the deficiencies. The funds support education programs, tools for and assistance in business process

35. The Defense Management Report savings enabled by the CIM initiative are listed at Appendix U.

analysis, and efforts to extend the CIM initiative into new business or infrastructure areas.

FY 1992 Funds Allocation

The FY 1992 Appropriations Act established a CIM Transfer Account of $710 million[36], derived from reductions to the Military Departments' and Defense Agencies' information technology budgets. The account was allocated to the Components in three increments in February, March and June of 1992. All of the allocations from the Transfer Fund and the release of approximately $800 million in Departmental apportionment withholds were closely scrutinized by the Department's Functional Managers and the DDI Functional Information Managers.

Funding Implications

The information technology budget for fiscal year 1993 has remained virtually unchanged. DoD is requesting $9.5 billion of information technology resources in fiscal year 1993. Additional opportunities to influence the expenditure of funds and exercise funds control occur during the outyear planning and programming process, and the internal review process in preparation of the Department's FY 1994-1999 Program Objective Memorandum and the FY 1994/1995 President's Budget request. The FY 1994/1995 Information Technology (IT) Budget Exhibits have been restructured to require Components to report IT resources by functional area. This will give needed visibility to total IT resources and their use in all functional areas.

This along with a move towards establishing centralized development and implementation of a Department-wide fee-for-

36. In both FY 1991 and FY 1992 the Congress set up a CIM Transfer Account to reinforce the role of OSD in funding CIM programs. A discussion of related funding controls established by DoD is at Appendix V.

service communication and computing utility capability, will allow improved visibility of the resources for IT support. This will give the functional managers added leverage over information resources to improve their business processes. Adjustments in the resourcing process to further improve this approach are currently being analyzed.

APPENDICES

Gold Nugget Award

REQUESTED BY: Policy memorandum signed by ASD(C3I), on October 7, 1991

DELIVERABLES: Awards as deemed appropriate by the DDI.

DUE DATE: Initiated on October 4, 1991. There is no set schedule for making the awards.

DESCRIPTION: The award consists of an organizational plaque plus potential tangible benefits for the program or initiative selected. These tangible benefits could include "Special Interest" designation with special budget tracking and priority consideration for CIM resource assistance, technical or other support for adaptation of the program for wider Departmental use, recognition for the organization and individuals instrumental in developing and implementing the program, and nomination, where appropriate, of participating individuals for monetary awards.

ACTION EXECUTIVE: DDI

STRATEGY: To reward excellence, innovation, and creativity in information management.

MILESTONES: There is no schedule for Gold Nugget Awards. The awards are based on merit.

PROGRESS:

1. Presentation by ASD(C3I) on October 7, 1991, to the Army Data Management Center.

The Army Data Management Center was selected as the Interim Executive Agent for DoD Data Management on May 1, 1991, by the ITPB.The Army spearheaded the establishment of the DoD Center for Data Administration Operations. The Center will support the information engineering and functional information management needs of the functional proponents of the Department. The Center transitioned to DISA in October 1991.

2. Presentation by ASD(C3I) on January 27, 1992, to the Army Corps of Engineers.

The Army Corps of Engineers was selected to receive the award for its outstanding efforts to establish a comprehensive Information Resources Management program. In this decade-long effort, the Corps of Engineers pioneered many of the business process improvement and enterprise modeling techniques in use by DoD today. The program has led to the modernization of the

agency's key business processes and producing savings in the hundreds of millions of dollars.

3. Presentation by the Deputy Secretary of Defense on April 10, 1992, to the Defense Advanced Research Projects Agency (DARPA).

DARPA established, developed, and fielded prototypes of the Dynamic Analysis and Replanning Tool (DART) during Operation Desert Shield. DARPA, in conjunction with the United States Transportation Command, satisfied an urgent wartime requirement by providing tools to meet planning and analysis needs.

4. Presented by the ASD(C3I) on July 21, 1992, to the Army Information Systems Command.

The Army set up the Reusable Ada Products for Information Systems Development (RAPID) system as a means to leverage prior information systems development efforts into speeding the development of future systems by means of reusable components. This effort was the foundation of the DISA Center for Software Reuse, which will serve all DoD.

DoD Business Process Improvement Descriptions and Definitions

The primary source for this Appendix is the DDI's "CIM Baseline Workshop Report, Defense Investigative Service," March 13, 1992.

Models are graphical depictions of the way that DoD does business. Not unlike process flow diagrams that have existed for many years, a model shows how an activity is performed and, how it collects data that will be used again later. DoD has adopted a standard method for creating and maintaining these models--the Integrated Definition Language (IDEF). To date, two standards have been approved, Activity Models (Called IDEF0 - IDEF Zero) and Data Models (IDEF1X - an expanded version of an earlier data model method).

Activity Models describe HOW we do work. We model both the current view of how we do work ("as-is") and how we propose to improve the way we do work ("to-be"). Similarly, with each model, we then begin to describe WHAT we do or collect within the model. We describe entities which tell us what principal activities are being performed and what data is collected within that entity.

Activity models start at very high, enterprise or capstone, levels. These are broad statements of the mission of an organization such as DoD. We then breakdown this activity into smaller activities or functions, called decomposition, until we have a more complete view of how activities are performed. Once this view is created, it is possible to create a model that graphically depicts this activity.

When we have collected the information we need on the activity model, we will then create another model to show the relationships of data. This data model, when properly created, will allow us to collect reusable data only once, store it, and use it a number of times in different applications or processes, thus reducing costs through eliminating transcription errors and data redundancies.

Activity and Data Modeling Techniques

IDEF modeling techniques are government-owned and were originally developed by the U.S. Air Force with contractor support. The use of IDEF is widespread throughout government and private industry. IDEF has proven to be an effective tool to aid in information management and information requirements definition.

The IDEF modeling techniques provide an effective means for:

a. Documenting the current (as-is) and the planned (to-be) environments of the business activities.

b. Accomplishing interaction and consensus between user groups as part of process requirements definition and subsequent development.

c. Achieving consistent documentation, which facilitates data integration and sharing.

d. Providing documentation and audit trails during process conceptual design.

The IDEF modeling techniques are used to develop activity models and data models, which graphically depict the patterns of the business processes and the data used to support these processes. The Activity Models define and explain the business process, while the data models build the foundation of data needed to run the business.

The IDEF modeling:

a. is a structured modeling technique that is standardized through the IDEF User's Group.

b. identifies the information needed to support the business processes.

c. provides a picture of business processes and provides graphic documentation.

d. facilitates discussion and change.

e. permits evolution.

Introduction to Activity Models

An Activity Model is a representation of related business functions, within a limited subset of the enterprise. At a high level, the models may be used to understand what work is performed in a business area. At a lower level of detail, the models will depict how the work is performed. The primary purpose of the Activity Model is to identify information needs, inputs, outputs, mechanisms and controls within the enterprise. An activity represents a process, action, or task that requires some amount of time to accomplish its objectives. An activity will transform a set of inputs into products, enabled by resources and constrained by a set of controls. The activity has a name which is shown as a single strong action verb with a single explicit object that describes the process, action, or task that an activity represents.

Activity models are developed for several reasons. One of the most important uses of an Activity Model is to define the scope of a project or an enterprise. The model may represent as broad or as narrow a viewpoint as required. If several viewpoints are needed, separate models may be developed for each.

Another use of the Activity Model is to enable a team to map out a transition from the AS-IS business practices to more productive and efficient TO-BE practices. In this manner, the baseline activities are documented and using a formalized approach, the TO-BE alternatives are determined.

A third use for the Activity Models is as a data discovery and validation tool. The Activity Model shows relationship between activities, the information that is used to perform each activity and how that information flows between activities. Data requirements can be extracted from those information flows and applied to a specific Data Model.

The team develops the Activity Models from knowledge about the subject area provided by participants from interviews, or facilitated sessions, with additional help from other Subject Matter Experts. They may also gain knowledge from any available materials such as documents, forms, procedures, and existing Activity Models. The scope, objectives and viewpoint boundaries help the modelers determine what is relevant, which views to prepare, and what to include in each model.

An Activity Model has three components:

a. Node Tree

b. Context Diagram(s)

c. Decomposition Diagrams

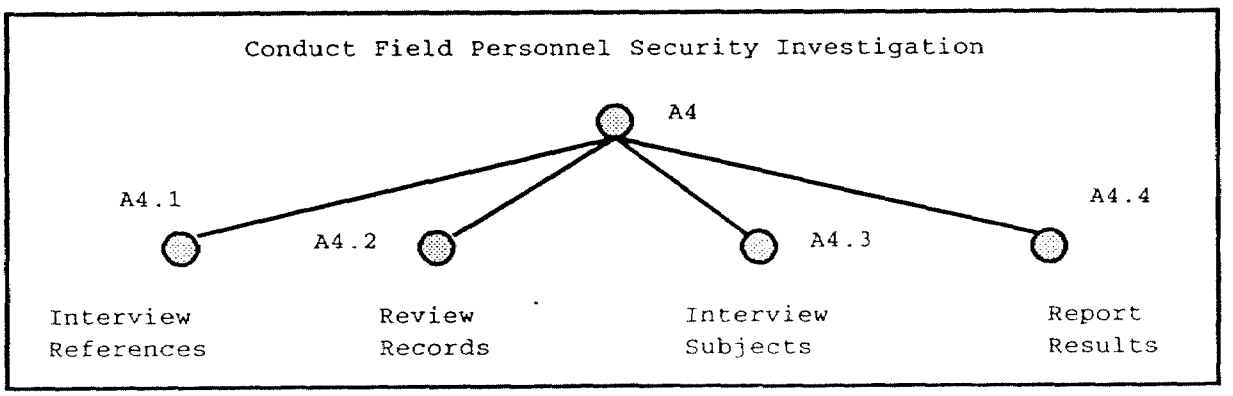


Figure B-1. Node Tree (For Example Only)

A Node Tree represents an activity hierarchy, with the node for an activity appearing above the nodes for its component sub-activities and with lines connecting the top node to each sub-activity node. It is analogous to a Work Breakdown Structure. The component nodes may be further decomposed into their sub-components until the modelers feel that they have adequately represented the required activity breakdown. Each node is labeled with the name of the activity or sub-activity it represents and a Node Tree location identifier consisting of a letter followed by one or more numerals. A Node Tree Diagram is often thought of as a table of contents for the project. As such, it depicts the breadth of the business area being modeled and the depth of the modeling effort.

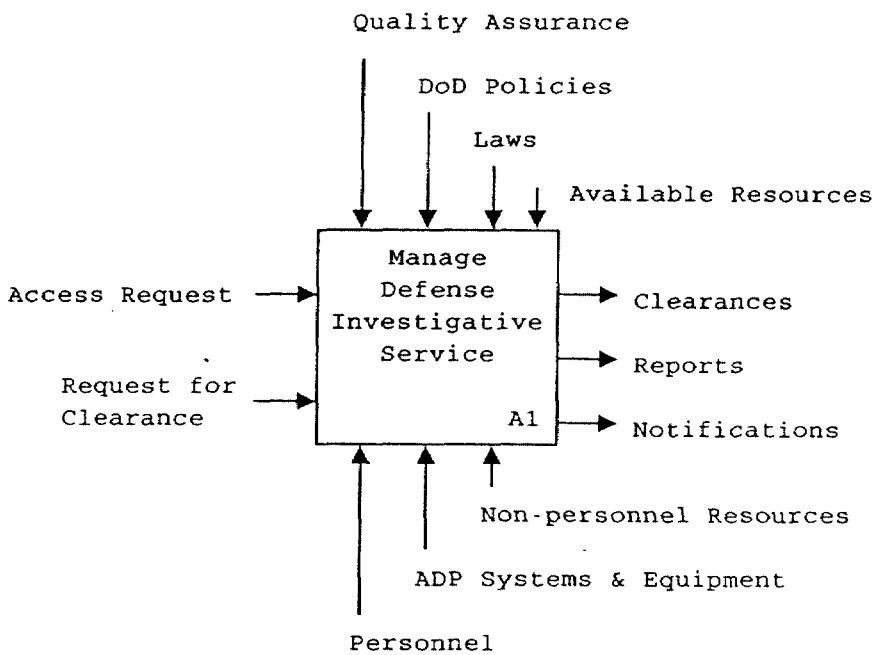


Figure B-2. Context Diagram (For Example Only)

A Context Diagram consists of a single activity box and its related Inputs, Controls, Outputs, and Mechanisms (ICOMs). An ICOM represents a type of information, data or object that is involved in an activity.

An ICOM has four possible roles relative to an activity:

a. Input: Information or materials which are transformed or consumed in the production of the outputs of an activity. (Arrow entering left side of an activity box)

b. Control: Information or materials that govern or constrain the operation of an activity. It regulates the transformation of inputs to outputs. (Arrow entering the top of the activity box).

c. Output: Information or materials that are produced by an activity or results from an activity. (Arrow leaving the right side of an activity box).

d. Mechanism: Usually people, machines, resources, or existing systems that perform (enable) an activity or provide energy to an activity. (Arrow entering the bottom of an activity box).

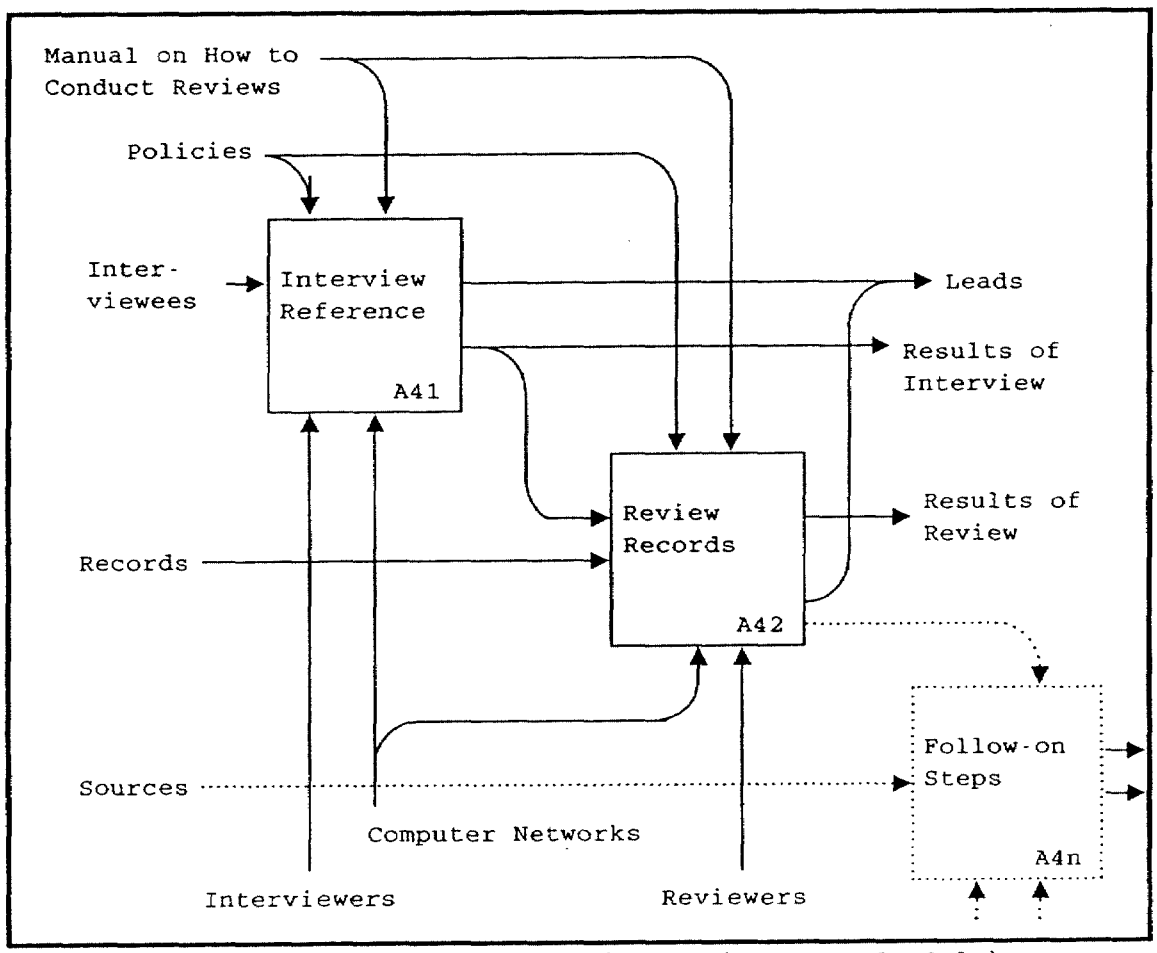


Figure B-3. Decomposition Diagram (For Example Only)

A Decomposition Diagram describes the details of an activity and its relationships to other activities in its decomposition level. In the decomposition process, the modelers break down an activity by determining its sub-activities. The ICOMs that interact with the activities are

depicted which documents activity associations. See the discussion of Context Diagram for an explanation of ICOMs.

Unlike a Node Tree, which can show several levels of sub-component activities at once, a decomposition diagram shows only one level below the parent activity which is being further detailed. The activity modelers check to insure that the activity views are consistent from one level to the next.

The IDEF Decomposition Diagram at first glance appears to look like any other work-breakdown diagram or flowchart, and its design is based on experience with both. Diagonal presentation of Context Diagrams make their interrelations easier to follow.

Introduction to Data Modeling

Data models capture the logical data structures required to support an organizations' information needs and relate them to data shared with other functions and organizations. A data model consists of the following:

a. Entity. Represents a set of objects (people, places, things).

b. Data Elements. A specific value that describes an entity.

c. Relationship. Inter-relationship among entities.

The first step in developing a data model is the identification of entities. One of the best sources for identifying candidates entities is to review the ICOMs or information flows from the activity models. Other good sources for identifying candidate entities include user interviews, existing documents, and current reports. The entities must clearly and concisely defined with supporting examples if required. Questions that might be asked of each entity include: Can it be described? Can one instance be separated from another? The answer to such a question becomes the value -- the noun -- given to the data element associated with the entity.

Relationships are the verbs showing the actions between entities. For example, the relationship "Grants" can tie the entity "Agency" to "Security-Clearance." Entities use multiple verbs to describe their multiple relationships: "Agency" also "Hires" "Employee." Some verbs are inappropriate, since the relationships will not occur; "Agency" can't "Apply-For" "Security-Clearance." Relationships also become the business rules for how data is or will be used by the activities.

Application of Business Process Improvement Techniques

This Appendix is based on work done by the Deputy DDI for Business Process Improvement, especially with the Defense Investigative Service.

A modeling team, consisting of a variety of personnel, participates in the modeling effort. Their backgrounds represent of a cross section of the business being examined. IDEF modeling techniques are employed during the project, but no experience is required in the use of IDEF by the team members from the business area. Experience in the business area being examined is a must. Along with the subject matter experts, the workshop team always includes an "outsider," a facilitator skilled in IDEF modeling.

The sessions begin with brief training in IDEF modeling techniques and continue with the definition of the mission, scope and objectives for the workshop team. The sessions continue with the building of the node trees, decomposition diagrams and model object definitions. The team analyzes the models to determine percentages of the budget for each high level node, whether or not the activity was predominately value-added, and to examine the activities for efficiency. A short training session in data modeling is delivered and the team models the data requirements to support the business. A management level briefing is prepared to support and explain the findings of the workshop team.

Dynamics of the methodology

Activities -- representations of what an organization does -- are discovered and documented during the activity modeling sessions. The group examines these activities to determine which business areas are most appropriate for further analysis. This is accomplished by

- Allocating the percentage of dollar resources for the business area across the major activities.

- Zeroing in on the high expenditure areas.

- Determining the value-added nature of the activities in the business area. At high levels in the model, percentages may be applied to designate the value versus non-value added nature of the activity.

The team may assign an efficiency rating for the value-added activities in the model. This helps to determine which area of the business should be studied as a follow on action.

All non-value added activities are considered as candidates for elimination or minimization. A non-value added

activity is defined as an activity that can be eliminated or reduced without deterioration of service to internal or external customers; e.g., an activity performed due to non-conformance to customer specifications or an activity that results in the wasteful spending of resources. An organization may believe that its business is "allocation of funding," but may find that many of its activities relate to "verification of formats" or "re-entering financial information into dissimilar data bases." Non-value added activities often lead to non-value added costs which are defined as anything other than the minimum equipment, materials, space and employee time absolutely required to accomplish the core mission of the organization.

The results of applying this method enable an organization to focus on subsequent projects that will provide them with the greatest gains in productivity and efficiency, as shown in Figure C-1. This approach was developed to aid an organization in its planning process to identify business process issues and improvement projects. Use of this methodology is intended to identify and clarify problems to be solved, provide a foundation for developing future detailed models and to facilitate a common understanding of the business requirements.

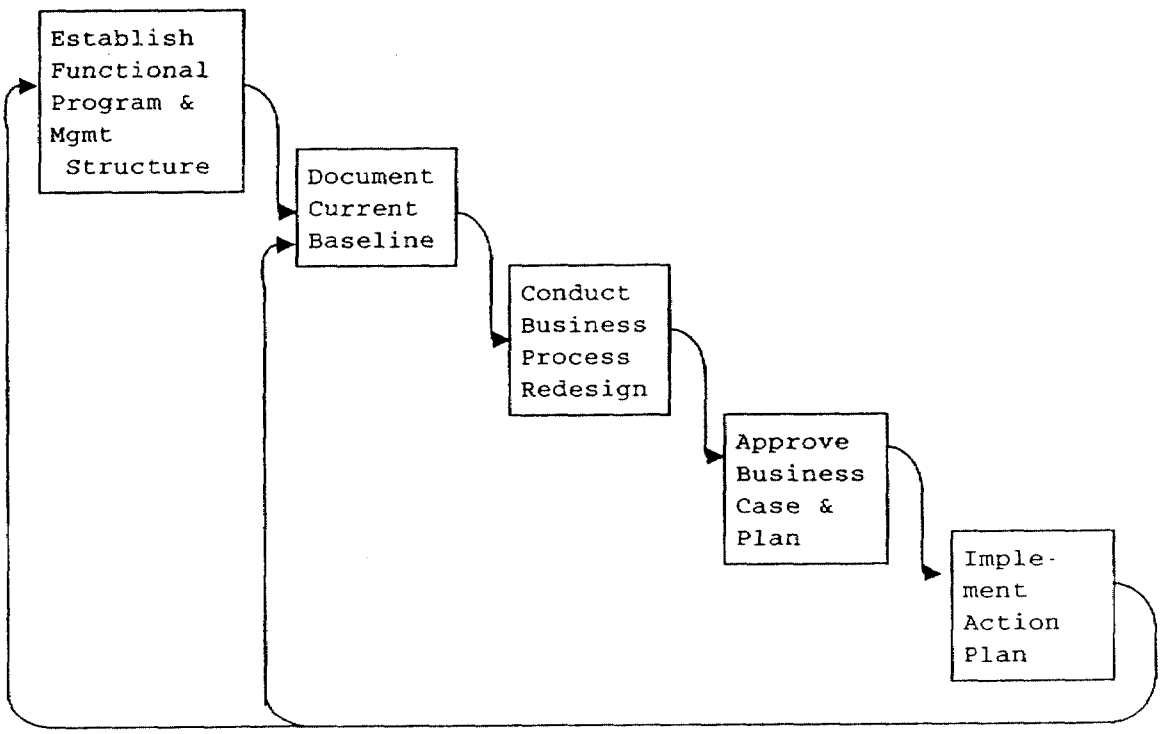


Figure C-1. Business Process Improvement Steps.
Based on National Defense University, Information Resources Management College, paper, "Business Process Improvement as a Component of Defense Strategy," by A. E. Luke, July 1992.

In addition to activity cost analysis, activity model are useful tools for conducting a variety of other process improvement analyses. These include

- Total Quality Management techniques,
- Scenario analysis,
- Business rule analysis,
- Activity-based costing analysis,
- Risk analysis,
- Related activity and data modeling analysis,
- Investment analysis,
- Affordability analysis, and
- Simulation techniques.

Under this approach, functional managers choose the evaluation techniques that are best suited to the process improvement tasks.

DoD Business Process Improvement Program

In January 1992, the CIM Information Technology Policy Board established the DoD Business Process Improvement (BPI) Program to assist functional areas as they make business process improvements to achieve DMR savings. The program:

1) defines and provides business process improvement support services applicable to all functional areas;

2) conducts demonstration projects to prove how business process improvement techniques and methods could be successfully applied in DoD; and,

3) develops a comprehensive training program to educate personnel involved in CIM-related implementation tasks.

CIM Working Interface Network (WIN)

In May, 1992, a CIM WIN group was inaugurated as a forum for members of different DoD functional communities to gain an understanding of current business process improvement initiatives and oversee integration issues across functional areas. The group was chartered to provide direction and coordination for business process improvement projects and ensure consistency among the CIM functional area projects. One of the key goals of this group is to avoid duplication of effort and enhance integration of best business practices in an orderly manner. The group meets monthly and their agenda includes discussions of specific BPI modeling project results and other current general and technical topics of interest.

DoD IDEF Implementation Group

In February, 1992, a DoD IDEF Implementation Group was formed to facilitate the implementation of BPI concepts and IDEF modeling techniques. Attendees include representatives of the information management, data administration, and functional communities. This group meets quarterly or more frequently if required. Topics include current status of DoD policies and procedures, IDEF modeling standard, CASE tool updates, and guest speakers who share information about actual projects and their lessons learned.

BPI Customer Service and Technical Support

To provide a readily available source of information to the DoD community, a BPI customer service support number has been established (1-800-828-BPIP). This service provides one-stop shopping for DoD personnel seeking information and documents about business process improvement. The support has information about training, facilitation support, and ongoing projects. Callers can get technical information about BPI

CASE tools and how they work, as well as how to apply the techniques of IDEF.

The BPI program has also a library of loaner CASE tools to provide IDEF and activity based costing tools on a trial basis to DoD organizations interested in trying support software or conducting modeling projects. The library gives organization an opportunity to examine tool sets without having to acquire a copy of their own.

IDEF Standardization

Several dialects of IDEF have emerged since it began from an Air Force program in the late 1970s on computer-aided manufacturing. An increasingly broad group of commercial vendors have offered versions of IDEF in a range of operating systems and environments. Several commercial tool sets integrate IDEF with more traditional information engineering tools to produce computer program code from models.

DoD is a member of the IDEF Users' Group and supports its efforts to standardize the methodology and create Federal Information Processing Standards for both activity models and data models. Initial versions of these standards by the National Institute of Standards and Technology are expected in early FY 1993.

DoD is active in the development of an Interface Definition Language (IDL) to assure that a wide range of applications which support IDEF can read and manipulate models from other vendor applications. Usage of the IDL will ease translation of various treatments of IDEF and allow additional functionality. DoD supports the User Group effort to have the IDL approved as an International Standard by the IEEE and the International Standards Organization.

Interim DoD IDEF Repository

The DoD IDEF Repository will have three parts:

1. A model storage area for input of models;

2. An interface that will allow a user to access models, manipulate or change them and then restore them. It will also assist the user to find a model or portions of a model that can be reused in a new model.

3. A Data Encyclopedia that will contain standard data elements that have been approved for DoD-wide use. A temporary Data Encyclopedia, developed by the Army Corps of Engineers, will later be transitioned to the DDRS.

The interim repository will be activated in early FY 1993.

CIM Education Programs

Information Management and Business Process Improvement

Key to the success of any new program is the ability to train as many people as possible in the shortest amount of time. The BPI program recognized from the outset that training would be one of its three major focuses.

To achieve the training objective, DoD training institutions have been enlisted to spread the word. A major contributor has been the Information Resources Management College (IRMC) of the National Defense University. IRMC has been the leader in CIM education and training since CIM's beginning.

During FY 1992, the IRMC provided CIM-related education for almost 1,800 DoD personnel. The majority of these students attended Update Workshops (68 "Paul Revere" sessions conducted at 45 locations across the U.S.) that focused on the CIM principles of functional economic analysis and the business case. Courses planned for FY 1993 will emphasize the Business Process Improvement Program and the preparing of Functional Economic Analyses.

All IRMC students in its Advanced Management Program (AMP) are given firm grounding in IM with specifics on functional process improvement. The AMP is a 16 week, graduate-level program designed to prepare individuals responsible for IRM decisions for senior leadership and staff positions in DoD. The Advanced Management Program confers 19-23 graduate credit hours, as recognized by the American Council on Education. The Advanced Management Program and the IRMC AIS Procurement Strategies Intensive Course are mandatory Level III education requirements for the communications/computer systems career field of the Defense Acquisition Corps.

During FY 1992, IRMC offered two intensive courses (3 to 5 days in length) that specifically focused on principles of CIM and business process improvement.

During FY 1993, IRMC will strengthen its course offerings in the CIM area, especially those supporting business process improvement. The AMP will be expanded to provide more detail to functional managers in business process improvement. In addition, the College is adding five new intensive courses (2 to 5 days in length) specific to business process improvement.

All course materials will be developed on alternative delivery systems, as appropriate, in order to reach as many students as possible. These alternatives will include computer-based training, video tapes, video teleconferencing, and computer conferencing/distance learning techniques.

Using these techniques, the number of students reached in 1993 should double.

The IRMC is conducting an experiment in learning technology beginning in the Fall of 1992 to examine the effectiveness and capability of distance learning as an instructional method for select college courses. The first of these courses, "DoD CIM Overview," will be presented in both traditional classroom and new PC-based styles of teaching. Participants in the course will be assigned to either a six-hour classroom course or its distance learning equivalent. The distance learning course requires a 12-hour commitment over a period of one month. Either in a classroom or through electronic bulletin board message posting, participants will share discussions of CIM,its operational elements and challenges for DoD activities.

The DoD Center for Data Administration has also been a training source. The Center has provided training the data administration, data element standardization, and IDEF modeling techniques. Since April, 1992, 133 students have received the IDEF modeling training.

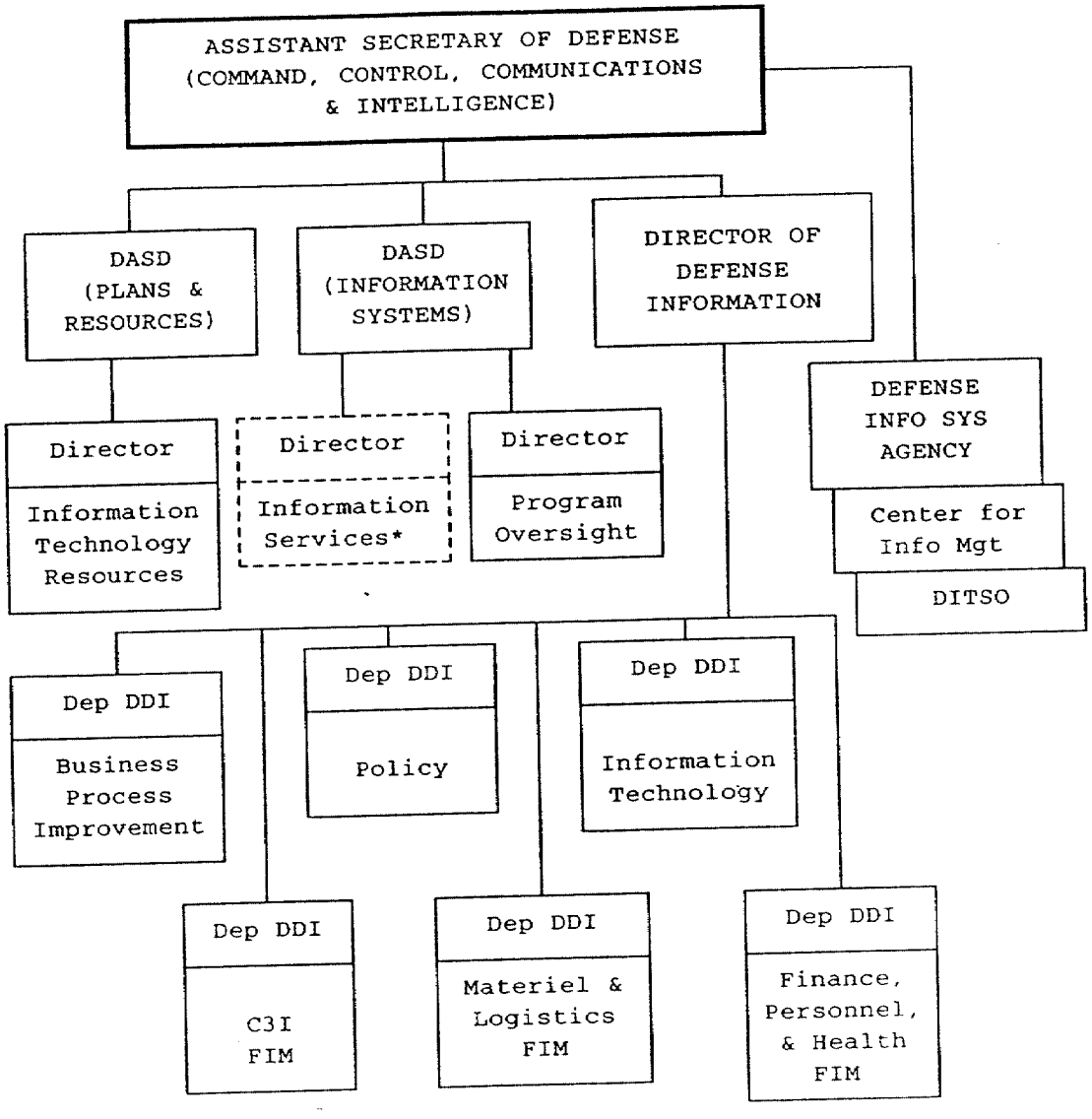
Other institutions providing BPI related training include the U.S. Army Management & Engineering College and the U.S. Army Computer Science School.

As part of every business process improvement project, team members are provided with just-in-time training before actual project analysis begins. There have been approximately 600 personnel trained in IDEF modeling techniques as part of BPI projects.

Information Resources Management

In August 1992, the DDI announced the formation of a small, focused task force to CIM Executive Resource Planning. The limited-term task force was formed to prepare a comprehensive training, executive development, and professional management plan for the DoD Information Resources Management (IRM) personnel. The skills and use of DoD's IRM personnel are critical to the successful implementation of a modernized DoD computer and communications infrastructure. The plan, which will be completed in early FY 1993, will provide the concept and initial actions needed to recruit, develop, and deploy highly skilled IRM professionals for the DoD.

ASD(C3I) Information Management Organization Structure



*Detailed to CIM POM Task Force under the DASD(P&R)

Information Management (IM) Policy

REQUESTED BY: CIM Implementation Plan

DELIVERABLES: Defense formal policies

DUE DATE: On-going

DESCRIPTION: The ASD(C3I) is responsible for developing and coordinating information management policy and implementing guidance based on the Defense IM principles. In August 1992 the Office of Administration and Management approved the following structure for the DoD information management policy series:

8000	Defense Information Management
8100	Information Systems
8200	Information Services
8300	Data Administration
8400	Information Technology
8500-8800	Open
8900	Information Collection and Dissemination

The new series provides a framework for the consolidation of previously fragmented IM policies. This also simplifies access to policies and procedures by information developers and users. As information management policies are modified for compliance, they will be renumbered and issued under the newly established series.

ACTION EXECUTIVE: Deputy Director for Policy, Office of the Director of Defense Information

STRATEGY:

For the Department to adopt and implement the principles set forth in the January 1991 implementation plan approved by the Deputy Secretary of Defense, it was necessary to issue several policy memorandum and other interim guidance. The proposed Defense IM Program directive (DoDD 8000.1) will codify these early policy issuances and incorporate many of the concepts from existing Information Resources Management and Automated Information Systems Strategic Planning directives. In conjunction with integrating the essential elements of functional process improvement, information resources management and information technologies and services under the auspices of the Department's IM program, the directive also imposes common information sharing techniques and supporting information technology and services throughout the Department.

The IM framework, through the directive, also establishes broader and centralized information management authority for the Defense Secretary's Principal Staff Assistants. Each

Principal Staff Assistant in the Office of the Secretary is assigned clear authority, and is responsible for, streamlining and improving the functional processes and supporting information systems for their assigned functional areas. The IM directive communicates a policy shift from the Services to the Office of the Secretary of Defense. Prior to the CIM initiative, the authority and responsibility for operating functional processes were decentralized and often assigned at the Component level. This contributed to duplicative, fragmented and inefficient functional processes as well as the possible acquisition of unnecessarily redundant automated information systems. Embracing the Department's IM principles and policy through aggressive implementation of the CIM initiative will enable standardization and continuity of function while increasing efficiency and reducing costs.

Building for the successes of CIM called for the development of a management methodology to conduct process improvements within all activities of the Department. Using IM principles, the Director of Defense Information issued interim guidance in August 1992 to lay out the iterative steps and actions for improving functional processes and maximizing supporting technology applications. The interim guidance will facilitate ongoing process improvements and provide experience to help refine forthcoming policy directions for the application of process improvement, data administration and supporting information technology by the Department.

MILESTONES:

8000 Group Defense Information Management

Policies are being formalized in the areas of functional processes, technical directions and information system oversight.

Three functional policy activities will be emphasized in early FY 1993.

1) An instruction will be developed to supplement the Defense Information Management (IM) Program directive. The instruction, tentatively numbered DoDI 8000.2, will provide supporting procedures, further delineate responsibilities and provide a summary of related DoD issuances for the implementation, execution and oversight of the Defense IM Program.

2) An instruction, tentatively numbered DoDI 8020.1, will define responsibilities and requirements for execution of the functional process improvement program by the Principal Staff Assistants of the Office of the Secretary of Defense.

3) The interim guidance for functional process improvements will be refined and published as a DoD Manual (8020.1-M) following approval of the associated functional process improvement instruction.

8100 Group Information Systems

Policy direction affecting information systems involves both developing new and updating existence guidance as the IM 8100 series is created. The office of the DASD (IS) has planned the development of an 8100 capstone directive to integrate information system management policies and oversight responsibilities. In addition to the information system integration perspective, the directive will also incorporate automated information systems strategic planning concepts.

The life cycle management discipline for automated information systems will also undergo revision. The existing 7920 series of DoD policies and procedure guidance will be revised to incorporate the IM principles and provide guidance for management of other DoD Federal Information Processing resources. Supporting manuals will be updated and the entire series will be renumbered to become part of the IM 8100 series.

8200 Group Information Services

Information services include a wide range of topics, such as data processing operations, education and training, and central design activities. These areas are currently under review by specialized task forces, which will affect future policy directions.

8300 Group Data Administration

The IM data administration policy base (DoDD 8320.1, DoD Data Administration) will be expanded with the development and issuance of guidance for data administration and standardization procedures.

8400 Group Information Technology

The Information Technology area within the Office of the DDI determines policy activity on three fronts.

First, attention will be directed towards initializing the 8400 series for Information Technology guidance within the 8000 IM policy architecture. This will be done under the guidance of the Deputy DDI for Information Technology. Software management issues will also be addressed by revising the Department's computer programming language policy. The revised policy will continue that of the existing directive

(DoD Directive 3405.1) requiring the use of the Ada programming language for software developed by DoD after June 1, 1991 as stipulated in Public Law 101-511 (the FY 1991 DoD Appropriations Act).

8900 Group Information Collection and Dissemination

This effort is being led by the DASD(IS) in support of the ASD(C3I) role as the DoD Senior IM Officials. This area affects interagency, intra-agency and public information collection and dissemination and requires considerable coordination among affected groups.

Functional Economic Analysis

A Functional Economic Analysis (FEA) is a management tool to determine and document the costs and benefits of business process improvements and any related investments in information technology.

The Department is now installing an aggressive approach to measure effectiveness of individual CIM initiatives. In each case, DoD asks for expected financial results and for operating measures prior to approving full implementation. The program manager shows expected cash flow, adjusted for risk and for the time value of money. This approach follows industrial practices of business analysis in justifying productivity improvement projects.

To make comparisons between different implementation alternatives, DoD uses FEAs. This approach assures consistency of planning, provide a method for full disclosure of operating assumptions, and allow for quarterly audit of actual accomplishments. CIM program managers also compare their projected unit costs, order-handling delays, and transaction errors with comparable private sector business practices. For example, in the case of handling purchase orders for low cost items, the Materiel Management CIM manager will examine purchasing practices of the most efficient U.S. firms. The CIM method requires performing value-engineering on individual transactions to find out how to revise existing DoD business policies and practices.

DoD has developed a preliminary set of analytic processes in conjunction with the Draft DoD 8020.1-M for preparing FEAs. There are three levels of the FEA:

1) an abbreviated FEA;

2) a conventional or comprehensive FEA; and,

3) an update FEA.

This will allow managers to select the tools to conduct and document an FEA at a level of detail that is appropriate to the nature of the decision that the FEA is supporting, whether for business process improvements or for information technology investments. OSD-level FEAs are designed to be multipurpose documents to help convey functional direction and also provide the information needed to support information technology programs in both Departmental and Congressional reviews. FEAs prepared at the component level or other more detailed FEAs complement OSD level FEAs addressing unique functions not yet identified in DoD wide plans in a consistent

manner. Draft DoD 8020.1-M specifies detailed formats and guidance for developing and documenting FEAs.

The FEA was selected as the primary mechanism for defending information technology acquisitions, including Major AIS Review Council (MAISRC) decisions. Previously, OASD(PA&E) had drafted a Life Cycle Cost/Benefit Guide (LCC/B) to help program managers prepare economic analyses for MAISRC. Also, OASD(C3I) had developed an FEA Model to be used to defend CIM decisions. A working group was formed under joint OASD(PA&E)/OASD(C3I) leadership to develop a common guideline. The FEA model was updated integrating the LCC/B requirements and employing a common set of business process improvement tools and techniques. As a result, a functional manager has the tools to consider business improvements and the economic impacts, including acquisitions, as an single management process with required documentation generated as a by-product.

The FEA is a major change in analyzing and justifying IT investments, relating them to business process improvements. FEAs were prepared to support FY 1992 CIM and budget decisions. All submissions were reviewed and evaluated against the CIM FEA criteria:

a. Business alternatives before technical

b. Cash benefits identified

c. Other benefits measurable

d. Management risk and budget impacts considered

The FEA Model was used. A report was prepared detailing an analysis of over 70 FEAs. Five (5) were selected as samples which demonstrated acceptable consideration of one or more of the above FEA criterion. These samples were made available to those specifying and preparing FEAs.

Business process improvement and the FEA are fully integrated. Performing a business process improvement using CIM tools will naturally generate FEA by-products. Conversely, preparing an FEA naturally leads to initial business process baseline definition, the basis for any improvement. In addition, the business process improvement has been applied not only to DDI projects and programs but also to the business process improvement program itself, identifying options and using the IDEF process and data modeling tools to describe and provide automation support to the BPI program.

Defense Finance and Accounting Service (DFAS)

The following is an extract of the DFAS Strategic Plan:

DFAS MISSION: Provide effective and efficient finance and accounting services during times of peace and conflict.

CONCEPT OF FUTURE OPERATIONS: DFAS has assumed full management responsibility for the finance and accounting functions of the DoD Components. It will consolidate operations; standardize procedures, systems, and operations; expand innovative use of technology; increase civilian and military work force productivity; and eliminate unnecessary policies and procedures. At the same time, customer service standards will be defined, measured, met and maintained or improved.

VALUES and CRITICAL SUCCESS FACTORS:

- Service to Customers
  - Customer Satisfaction
  - Compliance with Congressional/OSD Direction
  - Commitment to Organizational Excellence
  - Advice, Guidance, and Recommendations
  - Internal Controls
  - Team Work
  - Communication
- Savings for Nation
  - Unit Cost Reductions
  - Consolidation of Policy, Systems, and Operations
  - New Methods and Technology
  - Systems Improvements
  - Communication
- Support for People
  - Employee Satisfaction
  - Cost Effective Training
  - Safe and Healthy Work Place
  - Reward/Recognition Program
  - Professionalism
  - Communication

VISION: Committed to providing customers real-time quality financial management information, accounting, and payment services at a fraction of current cost.

GOALS

- Measure and improve the quality of service provided to customers.

- Consolidate all DoD finance and accounting functions at a limited number of centers while face-to-face customer support is retained at the local level.

- Reduce operating costs by half within 5 years.

- Provide an environment which maximizes the opportunities for growth and development of all DFAS personnel. Staff members affected by organizational change will be treated fairly and with dignity.

- Provide managers and authorized users with on-line access to managerial accounting information down to the work center level.

- Develop and operate vision-driven, standardized systems in each finance and accounting business area within 5 years.

- Aggressively apply new methods and technologies to improve customer service and reduce operating costs.

- Lead efforts to integrate financial services throughout all aspects of DoD's operations.

- Ensure consistent implementation of finance and accounting policy throughout DoD.

- Achieve national recognition for excellence in service and economy of operation.

Civilian Personnel Information Technology Initiatives

Vertical Information Flow. DCPC has laid the groundwork for easier access to DMDC data provide better decision support for civilian personnel/EEO staff. Data will be accessed on-line and a standard set of reports will be accessible using standard query language. This proof of concept will be an interim step leading to a fully operational OSD-level Human Resources Management Information System, which will provide real-time access to the DCPDS data base.

Standardization. A Systems Change Coordinating Committee (SCCC) was established to ensure a common approach to System Change Requests initiated by DCPDS users. The SCCC has successfully implemented a standard approach to reviewing change requests, and has achieved the goal of ensuring Component and Defense Agency DCPDS users are aware of need for uniform method for change releases. The SCCC also began an initiative to develop a common DCPDS Users' Manual, and Component members have completed work on the initial three chapters. Meanwhile, the DCPC Data Administration Branch has begun initial development of a Data Standardization Plan for DCPDS, and is developing the strategy for identifying DCPDS data elements unique to civilian personnel/EEO for validation by DISA prior to registration into the Defense Data Repository.

Technical Improvements. DCPC succeeded in identifying and prioritizing DCPDS improvements necessary to comply with the DoD Technical Reference Manual requirements. This was completed early in FY 1992. The identified modernization projects not only meet DoD technical requirements, but have as their primary focus enhanced support to the DCPDS customer. These improvements to the Field Release System and the Field Development and Maintenance System will ensure long term sustainability for DCPDS, and will facilitate migration to Open Systems standards.

Functional Interoperability. The DCPC engaged in a high level of activity from February 1992 to August 1992 to develop, test, and deploy an interface between DCPDS and DBMS (which is to serve as the designated interim defense accounting system for DBOF employees). The interface is an essential element of the plan to maintain DCPDS personnel service for those employees in Inventory Control Points (ICPs) transferring to DBOF at the beginning of FY 1993. Development and testing required close coordination among Component DCPDS users, DFAS, DLA, and DBMS systems centers. This initiative has been successfully completed, and will allow implementation of the ICP transfer as planned. This success also allows coverage of Defense Commissary Agency employees, whose personnel transactions have had to be manually entered into

the system for almost a year. A similar approach is now underway to ensure a DCPDS interface with the designated standard Defense Civilian Payroll System (DCPS). Initial testing of this interface also points to success. Finally, work has begun on a long term implementation plan for full integration of the civilian personnel and payroll subject area data bases, which will be a significant step toward full interoperability of the Department's business information systems.

In addition to the above achievements, the DCPC Information Systems Division has undertaken a campaign to share progress, plans and accomplishments, to encourage further integration and interoperability. In the second half of FY 1992, briefings on the Civilian Personnel Information Systems Strategy were provided to the Office of Personnel Management (OPM); the Air Force Deputy Chief of Staff, Personnel; the DCPDS Policy Council; the DoD Forum at the National Image Conference; attendees at the Artificial Intelligence Symposium; attendees at the Federal Personnel Automation Forum; the Deputy Assistant Secretary of Defense (Civilian Personnel Policy/Equal Opportunity staff; Navy Civilian Personnel Directors Seminar; Army Civilian Personnel Conference; and the Department of Defense Dependents School Management Academy.

Medical Information Technology Initiatives

Functional Architecture. Functional architecture configuration management activities are designed to ensure that changes to the MHSS supporting AISs are consistently and uniformly applied throughout AIS life cycles and that models are maintained and updated accordingly. Integration activities include cross functional integration (outside medical), updating the DoD Enterprise Model, and tracking achievement of business practice improvement targets. FY 1992 activities included providing functional architecture support to established CIM Medical work groups, as well as defining functional architecture integration specifications with DISA/CIM and beginning application of appropriate specifications to the medical functional architecture.

Information Systems Migration Planning. This activity is designed to produce and implement an information strategy for the MHSS and for each of the medical functional areas chosen that incorporates integration and migration actions necessary to support business practice improvements. Primary FY 1992 activities included definition of information system migration integration specifications with DISA/CIM and development of open systems migration and replacement plan for each AIS to support DMSSC's technical implementation transition strategy. Migration plans will be developed for twelve candidate migration systems and replacement plans for thirteen identified AISs. Major FY 1992 activities included a sponsoring a joint MHSS AIS working session to identify all DoD Medical standard and Service standard AISs, establishing the MHSS AIS baseline, and completing a draft Technical Management Plan.

Internal Automation Support for CIM Activities. This initiative involves the identification of internal automation requirements necessary to fully support the major components of the OASD(HA) CIM team, including the senior functional proponents, the functional integrators, the functional requirements managers, and technical implementation managers. Initial task orders for the OSE office automation network have been awarded and initial network integration and requirements diagrams have been completed.

Coordinated Care Program Technical Design Concept. This effort involves the development of a technical design concept for implementing a automated management information system capability for the DoD CCP. The project requires a determination of technical capabilities and interoperability of the primary system encompassed by CCP, an evaluation of using Ada, UNIX, X-windows, and other open systems environment (OSE) criteria as part of the design concept and the identification of interfaces between the clinical systems and

the CCP platform. A draft technical design concept plan has been completed.

MHSS Communications Architecture. The project will define a MHSS communications architecture which recognizes today's requirements, meets the requirements of systems being developed for fielding, reduces costs for communications services, and provides interoperability with C3I and other functional areas. The task will provide architectural and engineering services, focusing on intra-facility local area networks, inter-networking and wide area networks, and theater operations.

MHSS Integrated Local Area Network (LAN) Prototype. The project will design, engineer, implement and test an integrated LAN within the National Naval Medical Center (NNMC), Bethesda, MD to demonstrate the concept of a single utility providing communication services to numerous AISs within a medical treatment facility. Management of the prototype is being developed to determine degree of integration and migration required within the MHSS and other DoD cross-functions; initiation of actions to determine, via the technical management plan formulation process, the degree of modeling in effect for medical systems and the level of effort required to reverse engineer systems or functional components of systems; and initiation of actions to determine the degree and mix of medical functions supported by individual systems so systems and functions can be mapped for subsequent modeling, integration, and migration task.

Functional Data Administration. The aim is to provide the comprehensive structure to improve the planning and management of the Health Affairs functional data resources and ensure a central repository, standard data, common procedures and tools, quality service, and an effective infrastructure. This includes procedures, guidelines and methods for effective data planning, analysis, standards, modeling, configuration management, storage, retrieval, protection, validation, and documentation. Since April 1992, this effort has

Generated and delivered the Blood model from the Defense Medical Data Dictionary (DMDD) for testing by the Center for Data Operations, DISA;

Started software redesign for the DMDD to incorporate submission requirements of the DoD repository for data structures and models;

Generated and delivered for registration to DISA all DMDD data elements and system information for the Composite Health Care System (CHCS);

Initiated hardware and tool configuration changes to the DMDD to align with the Defense Data Repository System; and

Initiated DMDD software extension to include data and process model structures.

Data Registration. These activities include reverse engineering activities for migration systems to include the construction of process and data models from traditional system development methods and analysis of the migration systems in the context of the template for data standardization to determine the level of standardization which exists in the migration system and the level at which the reverse engineering process can be initiated. These data registration efforts will include all actions necessary to incorporate constructed models into the DoD data model and the DoD Repository, as well as all activities necessary to standardize the medical data in accordance with DoD procedures, directives, and manuals.

Open Systems Migration Plan. This project is conducted by the Navy Medical Information Management Center (NMIMC). Numerous systems currently operating within NNMC and the Composite Healthcare System (CHCS) and the Defense Blood Standard System (DBSS), which are deploying there in FY 1993, will be provided common user transport services on the integrated LAN. Analysis of the integration of voice, data and imaging on a single LAN will also be conducted. Generic implementation plans will be produced from the effort.

Wide Area Network (WAN) Communications Prototype. This project will engineer, establish, and test a prototype WAN linking three CHCS sites, using FTS 2000 and DDN, to determine the feasibility of attempting to migrate an existing proprietary MHSS WAN called DMSSC*NET to packet-switched technology prior to its transition to the Defense Information Systems Network (DISN) in the FY 1995-1996 timeframe. The WAN will be used to determine the wide area communications requirements to support the emerging CCP and to test the concept of regionalized CHCS. The program is under the management of the CHCS Program Office.

Defense Information Systems Agency (DISA)

REQUESTED BY:

The Defense Information Systems Agency was chartered by DoD Directive 5105.19 on June 25, 1991. DISA performs the functions formerly performed by the Defense Communications Agency and many functions necessary to support the DoD CIM initiative. Specifically, DISA is to:

"Provide technical support to the ASD(C3I) in the implementation of the Defense information management program and the Defense corporate information management initiative, to include administrative and technical support as directed by the ASD(C3I).

Support the technical implementation of the Defense information management program and the Defense corporate information management initiative DoD-wide, to include the development and use of process, data, performance and economic models, and related tools; assisting in the development, coordination and execution of the DoD data administration program; providing, as tasked, information services to include operation and design activities and data processing centers; and assisting in the assessment of DoD information services' efficiency and effectiveness."

DELIVERABLE:

DISA is tasked by the ASD(C3I) to provide support as required.

DESCRIPTION:

The support provided by DISA to the CIM initiative is performed primarily by two organizations: the Center for Information Management and the Defense Information Technology Services Organization. In addition, DISA's Joint Interoperability Engineering Office supports departmental integration of command and control information.

CENTER FOR INFORMATION MANAGEMENT

The Center for Information Management (DISA/CIM) was established under the implementation plan approved by the Deputy Secretary of Defense in January 1991. Some of the primary activities of the Center are as follows:

1. DoD Data Administration Program. The Director of DISA was designated the DoD Data Administrator in October 1991. Subsequently, DISA/CIM chartered the DoD Data Administration Council. The DoD Data Repository System operates under the aegis of the program.

2. Technical Integration Management (TIM). The DDI has assigned responsibility for technical integration of CIM systems within each DoD functional area, and across functional areas to DISA/CIM. DISA/CIM manages the overall technical architecture, the overall data architecture, and configuration control for the technical architecture and interfaces between systems.

3. Functional Area Managers. DISA/CIM continues to support functional area managers in business process improvement and information system implementation. This carries on the work that was begun by the first eight CIM functional working groups.

4. DoD Open Systems Architecture. DISA/CIM has developed and coordinated a Technical Reference Model as a target for open systems evolution of DoD information systems and the technical infrastructure. DISA/CIM is expanding the Technical Reference Model to a full Open Systems Architecture and Methodology.

5. DoD Software Reuse Program. A Center for Software Reuse has been established within DISA/CIM. The Center for Software Reuse operates the DoD Software Repository System and provides other customer and support services to users of that repository.

6. DoD Information Technology Acquisition Streamlining. The Center for Information Management conducting a pilot test a concept for streamlining and centralizing the Department's access to common information technology products and services.

7. CDA Software Assessment & Improvement Program. DISA/CIM has instituted a program for continuous assessment and improvement of software management in all DoD Central Design Activities (CDAs). This program provides a qualitative assessment of the software processes used by DoD's software development centers. This includes a self-assessment of each center's existing baseline of practice, identification of key areas for improvement, and action(s) required to create the improvements. DISA/CIM is using the Software Engineering Institute's Software Process Assessment methodology to perform these evaluations.

DEFENSE INFORMATION TECHNOLOGY SERVICE ORGANIZATION (DITSO)

As discussed in Section III of this report, DoD's aim is to provide information technology services as a utility. DITSO is the organizational mechanism for moving to this utility. DITSO was established by transferring selected information services and management resources from DFAS and

DLA. DITSO provides information processing, software development, and related technical support on a fee-for-service basis to DFAS. This will be expanded to support other functional areas as additional DoD information technology resources are transferred to DITSO. DITSO headquarters is in Denver, CO.

The Director of DITSO will receive policy and operational guidance from the ASD(C3I) through the DDI. Necessary administrative, technical and logistics support will be provided by DISA; however, the DITSO will operate as an information systems business unit and receive its operating and capital budgets through the Defense Business Operating Fund.

CURRENT INITIATIVES: On September 30, 1992, the DITSO Director announced that as a result of ongoing and planned initiatives, DITSO projects net operational savings of $17 million in FY 1993/1994, translating into a 22.5% reduction in customer billing rates. A few initiatives that will assist DITSO in achieving savings, providing quality service, improve performance, and effect a smooth transition to the utility are:

- Instituting incentive pricing within the various Information Processing Centers (IPC), to lower customer costs and optimize the use of various IPC facilities.

- Developing a Continuity of Operations Plan (COOP) for all DITSO-IPCs.

- Conducting a benchmark study to compare DITSO IPC costs versus those of other service centers, both inside and outside of the Federal Government.

- Conducting assessments of all DITSO Central Design Activities' software development methodologies and procedures in accordance with the Software Engineering Institute capability maturity model.

- Evaluating CASE (Computer-Aided Software Engineering) technologies already used within DITSO with the objective of creating a centralized information repository for financial systems development and maintenance and standardizing on a single CASE product throughout the organization to ease migration to future CASE environments. This review of CASE technologies is in parallel to the DISA/CIM efforts to introduce the I-CASE software engineering environment with DoD.

- Conducting a test to validate if outsourcing is an effective means of converting existing applications for repository base Government maintenance.

- Planning to use the DFAS-IN Non-Appropriated Fund Information Standard System (NAFISS) as the project to measure the degree of functional support required for the re-engineering effort, and the ability of DITSO Central Design Activities (CDA) to assume maintenance of the re-engineered system using CASE technology.

- Understanding the customer base and maintaining the good relationships with them that the Agencies and Services had already developed.

- Negotiating over one hundred Inter-service Support Agreements. These agreements are of critical importance with the onset of the DBOF, and Fee-for-Service. Customers require knowing exactly what services they are paying for, and exactly how the costs are developed in association with the services provided.

- Operating a Customer Service toll-free number (1-800-862-6846) to provide a direct "hotline" between customers and Headquarters. The intentions are to provide a quick response to all compliments, complaints, or questions received and provide better customer service through, documenting, tracking and servicing these calls.

- Defining role in Network Management in cooperation with the Defense Network Systems Organization with goals to determine redundancy of DoD networks (DLANET, AFNET, NAVNET); determine what applications are supported by these networks; determine where network processing can be consolidated; and reduce circuit cost by 25 percent, which is expected to be accomplished at least partially by bundling circuits and using facilities more efficiently, and thereby eliminating redundancy.

- Implementing streamlined acquisition procedures for several purchases and consolidating maintenance contracts to reduce contracting and related administrative costs.

Joint Interoperability Engineering Office
Center For Standards (CFS)

The CFS is an element of the DISA Joint Interoperability Engineering Organization. The ASD(C3I) assigned the CFS, via the Director, DISA, responsibility for coordinating and integrating the Department's information standards activities. Those information standards include standards for information processing, content, formats, and transfer.

Open Systems Architecture

REQUESTED BY: DDI Memorandum, May 23, 1991

DELIVERABLES:

- Technical Architecture Framework for Information Management
- Technical Reference Model for Information Management
- DoD Open Systems Architecture Methodology and Implementation Strategy

Standard Graphical User Interface (GUI) Style Guide and Transition Strategy for Migration to Standard GUI

ACTION EXECUTIVE: Deputy Director of Defense Information (Information Technology)

STRATEGY:

Continue the senior-level architecture working group that oversees and coordinates all aspects of the CIM open systems architecture development and integration.

Develop a consensus and obtain DoD-wide coordination for the overall technical guidance for the open systems architecture, taking into consideration legacy systems and known architecture efforts within the DoD Services and the Federal government.

Ensure that the DISSP proposals (architecture and policy) with respect to computer security are incorporated into the technical architecture guidance.

Continue the pilot project with the Marine Corps to "reality test" the open systems architecture planning methodology.

Develop, coordinate and promulgate DoD policy on open systems architecture technical guidance and planning methodology.

Incorporate open systems architecture policy into life cycle management of all DoD automated information systems.

MILESTONES:

Technical Architecture Framework

Program Management Plan	8/7/92 (complete)
Vol. 1: Implementation Concept	1st Qtr/FY 1993
Vol. 2: Architecture Guidance	1st Qtr/FY 1993
Vol. 3: Reference Model and Stds Profile	3rd Qtr/FY 1993

Vol. 4: Implementation Manual	2nd Qtr/FY 1993
Vol. 5: Support Plan	4th Qtr/FY 1093

Technical Reference Model

Version 1.1 (General Framework)	12/4/91 (complete)
Version 1.2 (Security Services and Ada Bindings)	5/15/92 (complete)
Version 1.3 (CALS Specs and POSIX 1003.0)	1st Qtr/FY 1993
Version 2.0 (Distributed Computing)	3rd Qtr/FY 1993

Architecture Methodology and Implementation Strategy

Planning/Process Methodology	3/6/92(complete)
Pilot Project with USMC	2nd Qtr/FY 1993
Target Architecture	1st Qtr/FY 1993
Implementation Plan	2nd Qtr/FY 1993

GUI Style Guide and Transition Strategy

Version 1.0	2/12/92 (complete)
Industry Review of 2.0	6/30/92 (complete)
Transition Strategy	8/30/92 (complete)
Version 2.0	1st Qtr/FY 1993

PROGRESS:

• Draft versions of the Technical Architecture Framework Vols. 1 and 2 were disseminated August 28, 1992 to ITPB members for review. Will finalize both Volumes by Nov 92.

• Development of the overall architectural technical guidance through a senior-level working group has been successful in terms of ensuring DoD-wide input, coordination and resolution of issues related to a architectural framework and standards.

• The ITPB approved Version 1.2 of the Technical Reference Model for dissemination as policy. Policy as to use of Version 1.2 distributed August 25, 1992. The TRM is available through the Defense Technical Information Center and the National Technical Information System electronic bulletin board.

• Version 1.3 of the Technical Reference Model and Version 2.0 of the Style Guide are now in draft stage and currently being reviewed by Service and Agency representatives.

• Completed initial version of the Methodology Planning Handbook March 92. USMC has completed a baseline definition of their current ADP environment and is working to define the target architecture.

Integrated Computer-Aided Software Engineering (I-CASE)

REQUESTED BY --• Director of Defense Information

DELIVERABLES --

- The I-CASE program will develop a DoD-wide contract for a standard software engineering environment with associated training and technical services.
- The I-CASE contract will provide a range of standard software development tools, integrated around an information repository for sharing data. I-CASE will also include process and data modeling tools for business re-engineering.

DUE DATE(S) --

• Request for proposal (RFP)	Released August 21, 1992
• Contract Award	May, 1993
• CASE Tools Available	September, 1993

ACTION EXECUTIVE -- Deputy Director of Defense Information (Information Technology)

- The United States Air Force has been designated as the Executive Agent for acquiring and managing the I-CASE software engineering environment.

STRATEGY --

- The I-CASE RFP has been developed by the I-CASE Executive Agent with full participation and review by each of the DoD Services and Agencies. It is essentially a joint acquisition effort.
- The I-CASE software engineering environment will be used to develop Corporate Information Management (CIM) systems and other automated information systems. Automated information systems are software systems supporting management processes but not embedded software systems or software systems which are part of a weapons system. Policy on use of I-CASE was issued by the DDI on February 27, 1992:

  "I-CASE will be used for new systems development and for modernization of existing systems that are being converted to an Open Systems Environment (OSE). I-CASE will not be required for existing systems operating in proprietary environments which are not being migrated to an OSE."

- The RFP will lead to an acquisition vehicle for commercially available products. It will not be an RFP for the development of a DoD designed system. There will be some minimum development required for unique DoD features, however, such as the interface to the DoD software reuse library.

- The I-CASE software engineering environment will include the best commercially available software development tools integrated around a central information repository. I-CASE will provide a consistent development environment across DoD at a reduced cost resulting from the Department-wide buy.

- I-CASE is intended to provide a standard, integrated, set of software development tools and associated training, covering the complete life cycle of computer software systems. Software developers will buy only those tools consistent with the development strategy they follow.

- Included with the software development tools will be process and data modeling tools for business re-engineering. This will facilitate closer cooperation between functional systems users and software developers.

- I-CASE will provide access to the DoD software reuse library and to the DoD corporate data dictionary. Reusable software components will save development time and dollars. The data dictionary will support interoperability by standardizing data names across systems.

- The I-CASE software engineering environment will produce systems in the Ada programming language, targeted to run on open systems platforms. I-CASE will also provide software re-engineering tools to redesign existing systems for open systems environments.

- I-CASE will be required for developing or re-engineering all Corporate Information Management systems and preferred for use in non-CIM systems. Contractors will either use I-CASE or, if not, deliver I-CASE compatible computer products for in-house government maintenance.

- After the I-CASE contract is awarded, I-CASE program direction, configuration management of the I-CASE software engineering environment (SEE) and prioritization and control of SEE migration requirements will be the responsibility of the I-CASE Executive Steering Group which will be established and chaired by the Office of Director of Defense Information.

MILESTONES --

Draft Request for Proposal	November 1991	Completed
Request for Information Release	December 1991	Completed
Distinguished Review Panel	January 1992	Completed
Analyze Vendor Concerns	February 1992	Completed
Draft Request for Proposal Release	March 1992	Completed
Incorporate Vendor Comments	May 1992	Completed
Source Selection Advisory Council	August 1992	Completed
Request for Proposal Release	August 1992	Completed
Vendor Proposals Due	October 1992	
Contract Award	May 1993	
I-CASE Tools Available	September 1993	

PROGRESS --

- The I-CASE Program was initiated in May, 1991. The Air Force was designated as the I-CASE Executive Agent, taking advantage of previous work done in the CASE area by the Air Force Standard Systems Center.

- In June, 1991, a multi-service writing team was assembled and work began on writing the RFP. During the July through September, 1991 time frame, six joint reviews of the developing RFP were conducted by combined Service and Agency review teams.

- In September, 1991, an OSD review directed the I-CASE Executive Agent to focus more on commercial products and early availability of software development tools rather than on the development of a new software engineering environment.

- The Draft RFP was completed in November, 1991, and a Request for Information released in December. An I-CASE Distinguished Review Panel composed of leading information technology experts reviewed the RFI in late January, 1992, and provided valuable guidance. The Draft RFP was released for comment in March, 1992.

- In August 1992, the I-CASE Source Selection Advisory Council met and approved the RFP. The I-CASE Delegation of Procurement Authority was signed on August 19, 1992, and the RFP was released on August 21, 1992.

DoD Software Reuse Initiative

REQUESTED BY--Director of Defense Information

DELIVERABLES(S)--

- Charter the reuse Executive Steering Committee and its permanent subcommittees/working groups
- Develop Vision and Strategies document
- Establish the DoD Software Repository System
- Develop a program plan for the DoD Reuse Initiative
- Undertake initial interconnectivity demonstrations as proof of concept towards the vision of interoperable, networked reuse repositories
- Develop a plan for metrics collection and reporting

DUE DATE(S)--

Vision & Strategies	January 1992	Complete, July 1992
Charters	January 1992	In final staffing
Defense Software Repository System	April 1992	Complete, Grand Opening July 1992
Interoperability demonstrations		
Initial demo	October 1992	
Second demo	1st half 1993	
Metrics plan	January 1993	
Program Plan	March 1993	

DESCRIPTION--

Reuse of software and software components has been shown to have significant potential for reducing the cost of DoD software development, while increasing software reliability and maintainability. Some narrowly focused domain specific (mission area) reuse efforts are currently underway within the Services and DARPA (e.g., RAPID, CARDS, ASSET). However, a broadly based initiative and a single, consistent Department-wide software reuse strategy, with associated policies, practices, approaches, and programs, is needed to achieve significant levels of applications software reuse, to permit cross-domain sharing where appropriate, and to attain maximum benefits. This program will build partnerships among users of

reusable software components, the suppliers of components, and the research and development community who will address needed technology.

ACTION EXECUTIVE--Deputy Director for Information Technology

STRATEGY--

The selected strategy establishes a DoD-wide initiative to focus reuse activities towards user needs via a centrally-controlled approach and management structure, and decentralized execution. This initiative addresses both weapon system and information management software and is structured to leverage current efforts.

Initial steps have included:

- Establishing a vision for the program, addressing in particular goals and strategies; and

- Establishing the management structure, including chartering of the Reuse Executive Steering Committee and its permanent subcommittees/working groups.

Subsequent steps are being taken based on the initiative charter and the vision and strategy established for the program. That vision is "to drive the DoD software community from its current 're-invent the software' cycle to a process-driven, domain-specific, architecture-centric, library-based way of constructing software."

The strategies are based on the notion of systematic reuse. The ten elements of the strategy are:

- Establish domains

- Define reuse products

- Determine criteria for deciding ownership

- Integrate reuse into the development and maintenance process

- Define the model for business decisions

- Define metrics to evaluate reuse

- Define guidelines for reuse products

- Identify technology base investment strategy

- Provide education and training

- Provide near-term products and services

Among the on-going DoD software reuse programs, there are efforts underway in each of the above areas. Coordination of efforts to eliminate unnecessary duplication and overlap, as well as to provide synergy and leverage, has begun. Now that the vision and strategy have been developed, a program plan will be developed to identify roles, interactions, and products.

That program plan and the implementation of software reuse within the Department must take the following considerations into account:

- There is no singular approach to software reuse.
- Reuse is a process, not an end-product.
- Libraries facilitate, but do not enable, reuse.
- Domain analysis, models, and architectures are the primary focus.

The DoD Software Reuse Initiative is guided by a DoD Software Reuse Executive Steering Committee, supported by working groups constituted to address technical and management issues. Both weapon weapon system and information system developers are represented on these groups. The Steering Committee will develop the program vision, propose policy for appropriate approval, provide program guidance, and act as a program advocate.

The Committee's permanent working groups are a Reuse Technical Working Group (previously named the Reuse Architecture Working Group), chaired by the Air Force, and a Reuse Management Issues Working Group, chaired by the Navy.

Capitalizing a more limited CIM effort which had begun earlier, DISA/CIM is the DoD initiative manager for this effort. This program management role includes development of plans and programs, implementation of Steering Committee guidance, and facilitating information sharing among the Services and Agencies.

MILESTONES--

Proposal approved Complete	September 25, 1991	
Action plan approved Complete	October 23, 1991	
Charter Steering Committee staffing	January 1992	Final

and subcommittees

Concept of Operations Deferred	March 1992
Establish Defense Software Repository System (DSRS) (RAPID-based)	
Initial	December 1991
Complete	
Networked	January 1993
Establish pilot support centers Complete	January 1992
Interoperability demo	
ASSET/CARDS	October 1992
ASSET/CARDS/DSRS	1st Half 1993
Metrics plan	January 1993 (was July 1992)
Program plan	March 1993

PROGRESS--

- The Reuse Executive Steering Committee has continued to meet approximately monthly, holding meetings in April, May, July, August and September 1992 to address topics important to the initiative's direction and structure.

- The Reuse Executive Steering Committee completed work on a proposed charter, and it has been forwarded for approval by the Director, Defense Research and Engineering and the Director of Defense Information. The Steering Committee has also approved the charters of the permanent subcommittees (working groups), although they remain unsigned pending approval of the Steering Committee's charter. Establishment of a Configuration Control Board was deferred by the Executive Steering Committee until a need for such a group at the DoD-wide, initiative level is identified.

- Both the Technical Working Group and the Management Issues Working Group met initially in May 1992 and continue to meet approximately monthly. Topics to be addressed have been identified and schedules are being developed.

- A Vision and Strategy for the DoD Software Reuse Initiative has been developed by the Steering Committee. This document states a view of software reuse which is process-driven, domain-specific, architecture-centric and technology-supported.

- The initial implementation of the Defense Software Repository System (DSRS) (formerly called the Software Warehouse) was established using the Army's Reusable Ada Products for Information Systems Development (RAPID) concept as a basis. It has begun an evolution to a networked, multi-repository capability. Use of the RAPID project took advantage of the existing procedures, tools, and software library. Pilot sites have been established in each Military Service, Defense Logistics Agency, and National Security Agency to help transition and institutionalize reuse technology.

- The DISA/CIM Center for Software Reuse Operations (CSRO) had its formal grand opening ceremony on July 21, 1992. At its formal opening, the DSRS library contained 1,531 high-quality, reusable software components and 2,166,00 associated lines of code. This is an increase of 83 percent in the number of components and more that 300 percent in lines of code since the CSRO was established.

- The major software reuse programs (STARS, CARDS and the CIM Software Reuse Program) have jointly reviewed the planned deliverable documentation from the three programs and have taken steps to ensure the documents are non-duplicative, efforts can be leveraged across programs, and schedules are mutually supportive to the greatest degree possible.

- Preparation is also underway for demonstration of the interconnection of three existing DoD library systems: the CARDS library, the Asset Source for Software Engineering Technology (ASSET) library, and the Defense Software Repository System (DSRS) library. Initial connectivity will be between CARDS and ASSET, with connectivity to DSRS to follow after successful completion of the initial demonstration. The initial demonstration is projected for October 1992.

- The projected concept of operations document has been deferred in favor of the Vision and Strategy and the program plan. The plans for collecting reuse metrics and reporting benefits have slipped due to slips in establishment of the Center for Software Reuse Operations (CSRO) and the pilot sites. The current projection calls for a plan for collecting and reporting benefits from the pilot sites to be completed in January 1993. Implementation of fee-for-service for the use of the Defense Software Repository System (DSRS) is now scheduled to begin in FY 1994. The date has slipped from the previously projected FY 1993 due to a slip in the overall fee-for-service schedule.

Information Technology Standards Program

REQUESTED BY

Deputy Secretary of Defense memorandum, "Implementation Plan for Corporate Information Management," January 14, 1991

DELIVERABLE	DUE DATES
Standardization plans for 17 information technology standards (ITS) areas	13 Completed
Activity and Data Modeling Standards Action Plan	Completed
Draft IDEF Process Modeling FIPS	1st Qtr FY 1993

DESCRIPTION

Under the policy direction of the Office of the Director of Defense Information, the DISA Center for Standards (DISA/CFS) has taken management responsibility for the Information Processing Standards for Computers Standardization Area. DISA/CFS has a structure incorporating the National Institute of Standards and Technology (NIST) Applications Portability Profile and CIM philosophies.

With the goal of meeting DoD needs via voluntary standards, the Information Processing Directorate is focusing on the development of a single, coordinated DoD voice to external standards bodies. Several data calls have been initiated, both inward to the DoD and outward to the voluntary standards organizations, to identify current DoD participants. A data base has been developed and is being populated with the information being returned from the data calls. Official DoD Representatives are being designated and a set of automated tools for their management has been identified.

Building on the work already done across the DoD, the Information Directorate of the CFS has accepted the role as the functional manager of C3I data elements. Specifically, the Information Directorate initiated a survey to determine the potential magnitude of the C3I data standardization effort. These efforts have been coordinated with the DISA/CIM data element standardization effort, which has overall cognizance of DoD data standardization.

As the DoD focal point for all interaction with the National Institute of Standards and Technology/Computer Science Laboratory, the DISA Information Processing Directorate has developed a close working relationship with NIST. This working relationship is formalized via a Memorandum of Understanding, which addresses all aspects of

the information technology area and includes an agreement to locate a cadre of DoD personnel at NIST. This DoD/NIST relationship is envisioned to enhance coordination and focus of the DoD in the Federal, commercial and international standards arenas.

NIST has developed an action plan to include the IDEF activity modeling (IDEF0) and data modeling standards in Federal Information Process Standards (FIPS). A draft FIPS on IDEF0 is scheduled for the first quarter of FY 1993.

ACTION EXECUTIVE -- Deputy Director of Defense Information (Information Technology)

STRATEGY

Develop standards road map and automation standards support system

Develop and implement individual standardization program plan for each information technology area

Allow DoD organization to work with NIST for the development, testing and maintenance and convert information technology standards in the FIPS

Establish Executive Agent for DoD information systems testing

Develop a DoD Information Systems Testing Action Plan

PROGRESS--

DISA was designated as Executive Agent for information systems standards across the DoD on September 3, 1991.

The Memorandum of Understanding between DoD/DDI and NIST/CSL was approved January 15, 1992.

Thirteen standardization action plans for information technology standardization areas have been prepared.

NIST has developed an action plan to convert DoD's IDEF activity modeling and data modeling standards in the FIPS. A draft FIPS on IDEF0 activity modeling is scheduled for the first quarter of FY 1993.

ASD(C3I) designated DISA/JITC as Executive Agent for DoD Information Systems Testing on July 17, 1992.

Software Process Improvement

REQUESTED BY -- Director of Defense Information

DELIVERABLES --

- A Software Process Improvement (SPI) Program which will implement and sustain software process improvement activities as an on-going, day-to-day, business activity of the CIM community.

- An in-house capability and contractual mechanisms to conduct Software Process Assessments (SPA) throughout the Department based on the Software Engineering Institute's (SEI) Capability Maturity Model.

- SPAs of all DoD Central Design Activities with follow on assistance in implementing necessary process improvements.

- Technology transition assistance to Integrated Computer-Aided Software Engineering (I-CASE) pilot sites.

MILESTONES --

Appoint SPI Executive Agent	Completed 2nd Qtr FY 1992
Establish DoD SPI Advisory Group	Completed 3nd Qtr FY 1992
Baseline Assessments at DITSO	Completed 4th Qtr FY 1992
Develop Initial SPA Capability	Completed 4th Qtr FY 1992
Establish SPI Contract Capability	3rd Qtr FY 1993
I-CASE Pilot Project Assistance	4th Qtr FY 1993

DESCRIPTION --

- The SPI program establishes the capability for conducting periodic SPAs at Central Design Activities (CDA) throughout the DoD. SPAs will be done either by specially trained government personnel or through the use of an umbrella SPA contract with SEI designated contractors. A key part of the Program is providing assistance for process improvement after SPAs are conducted. As part of the SPI program, CDAs designated as I-CASE pilot project sites will receive special technology transition assistance to help implement the I-CASE software engineering environment.

ACTION EXECUTIVE -- Deputy Director for Information Technology

- The Center for Information Management, Defense Information Systems Agency is the Executive Agent for the DoD CIM SPI Program.

STRATEGY --

- Each CIM CDA will conduct periodic assessments of its software development process. Each assessment will become

the baseline for further improvement in its software processes and practices.

- The SPI Executive Agent will establish guidelines for consistent application of process improvement activities across DoD. The Executive Agent will assist CDAs in performing software process assessments, and will provide assistance in post-assessment process improvement.

- The DoD SPI Advisory Group will prioritize requirements for SPI services where SPI requirements exceeds capability. The Advisory Group will serve as a forum for identifying and resolving SPI related issues.

- The SPI Executive Agent will develop an umbrella DoD contract for acquiring SPA services from approved SPA service contractors which may be used by any DoD CDA.

PROGRESS --

- In May 1991, the Director of Defense Information directed all CDAs to perform assessments of their software development processes. The resulting, near simultaneous, requests for SPA services virtually overwhelmed the limited capabilities of the Software Engineering Institute.

- In February, 1992, the Center for Information Management, Defense Information Systems Agency was appointed as the Executive Agent for the DoD CIM community's SPI Program. In April, the first meeting of the Software Process Advisory Group was held and a Charter for the group drafted.

- In August, 1992, a limited SPA vendor support contract was awarded to perform six SPAs. This provides an interim contract capability pending the award of a more extensive contract in the 3rd quarter of FY93.

- Also in August, the SPI Executive Agent began baseline process assessments (mini SPAs) of the five CDAs assigned to the Defense Information Technology Services Organization. Baseline surveys provide an early look at those process issues offering the greatest potential for improvement but do not replace the need for a full SPA. Simultaneously, a full SPA was conducted at the the Defense Logistics Systems Automation Center.

- In September, an SPA was initiated at the Navy Fleet Material Support Office.

DoD CIM Metrics Program

REQUESTED BY --

- Director of Defense Information

DELIVERABLES --

- A well defined "core" set of software development metrics which could apply to both automated information systems and embedded or weapons systems. The core set of software metrics consists of size, effort, quality, and schedule measures.

  A Corporate Information Management Metrics Program for the Department of Defense (DoD) as a corporate entity. The program will establish

  Program Manager metrics guidance
  DoD level CIM productivity metrics
  A centralized DoD CIM productivity metrics repository

DUE DATE(S) --

• DoD core metrics	1st Qtr FY93
CIM Metrics Policy	1st Qtr FY93
Program Manager guidance	3rd Qtr FY93
CIM productivity metrics repository	4th Qtr FY93

DESCRIPTION --

- The DoD CIM Metrics Program is intended to create an environment within the DoD which both encourages and facilitates the use of software management metrics. Two broad categories of metrics use will be supported-- metrics to be collected by program and project managers which directly measure the characteristics of software being developed, and metrics to be collected by the Department which address productivity of the software development and maintenance process.

ACTION EXECUTIVE -- Deputy Director for Information Technology

- The Defense Information Systems Agency has been tasked to establish the Corporate Information Management Software Metrics Program.

STRATEGY --

- Measuring software development and maintenance progress is a soft skill; there are many possible measures with only an indirect relationship between the measure and the success of the project. Software measurement and the use of such

metrics is immature and far from being an engineering discipline.

- The DoD CIM Metrics Program will establish a minimal set of software development metrics which are to be used by each DoD software development activity. The Program will provide guidelines for additional metrics which may be tailored to the specific needs of the software developer. In time, the required set of metrics will be expanded as maturity levels of DoD software development organizations increase.

- DoD will establish a centralized CIM software metrics repository which will collect productivity related metrics for software development projects. These metrics will be used to assess the effectiveness and efficiency of various software development processes, software development methods, and software development tools.

- Although oriented primarily toward CIM automated information systems, participation by the embedded or weapons systems software development community will be invited.

MILESTONES --

• DoD core metrics	1st Qtr FY93
• CIM Metrics Policy	1st Qtr FY93
• Program Manager guidance	3rd Qtr FY93
• CIM productivity metrics repository	4th Qtr FY93

PROGRESS --

- The Software Engineering Institute was tasked to develop the DoD core metrics set, a draft of which was distributed for extensive industry comment in June, 1992. The completed core metrics set is expected by 1st Qtr FY93.

Information Technology Reuse Service (ITRUS)

Demonstration Plan for the
Information Technology Commodities and Services
Acquisition Process

PURPOSE: To demonstrate a streamlined acquisition process which will be used to acquire information technology commodities and services for DoD. The demonstration at DECCO at Scott AFB, IL, features the following items:

- Information Technology Acquisition Bulletin Board System (ITABBS)
- Inquiry Quote Order (IQO) procurement process

BACKGROUND: One of the major concerns with respect to information technology in the DoD today is the lengthy and complex acquisition process. Frequently, by the time information technology products are delivered to the customer, they are outdated and above current market prices. This significantly increase costs and inhibits the accomplishment of DoD's missions. To respond to this deficiency, the Information Technology Reuse Service (ITRUS) has been established as an initiative within DECCO to provide an efficient and effective business-like operation for the acquisition and management of DoD information technology assets.

As the first step in the implementation of ITRUS, DECCO will provide DoD customers access to the latest information technology products at current market prices through an electronic bulletin board system, the Information Technology Acquisition Bulletin Board System. ITABBS will provide an electronic customer/vendor interface and utilize DECCO's streamlined, time-tested IQO acquisition process.

CONTENT OF DEMONSTRATION: The functionality of the ITABBS will be displayed by simulating a customer and vendor accessing the system. Upon system access, the following areas of the ITABBS will be demonstrated:

- Accessibility and user friendliness of the system

  These key factors ensure the development of a successful customer and vendor base.

- Customer/vendor procedures

  Customer and vendor access to procedures provided on the bulletin board will be demonstrated.

- Basic Ordering Agreement (BOA)

  The BOA contains pre-set terms and conditions which are agreed upon by the vendor and DECCO prior to contract award. The speeds the acquisition process by pre-establishing much of the lengthy documentation required for all contracts.

- Product catalog

  The electronic catalog contains the commodities and services that are available via the ITABBS and the technical requirements associated with them. Catalog control, to include adding items to the catalog, will also be discussed.

- IQO process implementation

  The IQO process will be demonstrated by simulating a customer placing a requirement on ITABBS, and the corresponding contract actions that would follow through acceptance of the products by the customer. The following will be described:

  a) The amount of information needed from the customer required to use the IQO process

  b) Interaction between the BOA and ITABBS catalog

  c) The vendors' ability to view requirements and provide corresponding quotations

  d) The vendors' ability to provide electronic billing

PERFORMANCE MEASUREMENTS: A comparison of the award price relative to current market prices and procurement timelines relative to other acquisition alternatives will be offered to illustrate the cost effectiveness and acquisition efficiency of DECCO's process.

DoD Comptroller Long-Range Strategies For Fee-For-Service For Information Technology

The DoD Comptroller in September 1992, provided detailed guidance on FY 1993 expansion of fee-for-service efforts and associated unit costing initiatives for Data Processing Installations and Central Design Activities. This guidance includes the following long-range strategies:

• Establish a commercial relationship between customers and the provider by charging/expensing for goods or services provided by thee activities.

• Benchmark prices against competitive commercial goods/ services offerings, if available in their area. Compare against what it would cost the government to obtain identical goods/
services from vendors. Adjustments will be made for like comparisons (i.e., the internal cost of contract administration and/or industry marketing costs).

• Enable customers and provider managers to improve efficiency and control costs by making the cost visible.

• Permit customers to move to sources that can supply more effective/lower cost goods/services, whenever mobilization requirements do not prohibit this flexibility. Decisions to move must be documented for future analysis.

• Ensure the efficient delivery of goods/services through continuous productivity improvements.

• Provider shall incur performance penalties for those periods when provider level of goods/services does not meet the stipulated standards. Also, renegotiate agreements when the customer changes goods/services requirements.

• Implement unit cost resourcing in accordance with the DoD Unit Cost Resourcing Guidance Policy and Defense Business Operations Fund Financial Policy.

• Operating budgets will not include any limit on the level of cost authority that can be earned. Cost authority, or amount earned, is a function of actual workload times the cost goals.

• Provider may incur cost as long as the total cost for all activities and businesses within a Component does not exceed the total cost authority/earnings for the Component as of the fiscal year end (also subject to limitations on the Annual Operating Budget and guidance on other policy documents).

• Improve capacity utilization of resources by encouraging provider managers to offer alternative pricing options for services/products that would be available to their customers.

• Capital Budgets must be justified when approved, all assets will be depreciated as part of the operating cost in accordance with the Capital Asset Accounting Guidance for the Defense Business Operations Fund.

• Prices for each output must be established at cost for each product or service and should provide flexibility to accommodate varying service levels. For example, where a DPI has both Unysis and IBM platforms, separate prices should be established for each related output. Also, if there is a difference in the cost of storing a cartridge and a tape, separate prices should be established for cartridge and tape storage for each platform. Likewise, in the CDA environment, various skill levels should be separately prices and form the baseline for establishing fixed cost agreements.

DMR Savings Enabled by the CIM Initiative

DMR Initiative	Savings in Billion $s
ADP Enhancements to Support AFLC Restructure	-.2
Army Reserve Travel Reduction	-
Automatic Telephone Directory Service	-
Aviation Depots	.7
Better Controls over Govt Furnished Material	.6
Centralize TAADS Manpower standards and surveys	.1
Communication-Computer Restructure (1&2)	.1
Computer Aided Logistics Support	.7
Consolidate NAVTELCOM/NAVDAC	.3
Consolidate Official and Personal Mail	-
Consolidate/Restructure AF Comm-Computer Functions	-
Consolidation of ADP operations and Design Centers	1.3
Consolidation of Finance and Accounting Activities	.9
Develop Standard ADP Systems (CIM)	3.4
Efficiencies at Air Labs	.3
Electronic Data Interchange	.3
Finance Software Development Efficiencies	-
Industrial Fund Productivity Initiatives	.3
Logistics system Improvements	1.4
Long Haul Communications	.3
Modernize Telecommunications Center Equipment	.1
More Efficient Management of Defense Agencies	.8
Network Architecture Efficiencies	-
Reduce Aircraft Spares Requirement	1.2
Reduce Illustrators and Graphic Technicians	.1

DMR Initiative	Savings in Billion $s
Reduce Travel Cost	.9
Reducing Supply Costs	17.3
Restructure AF Log Command	1.2
Restructure Air Force Communications	.4
SCC ADP Consolidation	-
Shipyard Productivity	2.4
Software Engineering	.3
Space and Naval Warfare Labs	.2
Streamline DoD Contract Management	.5
Streamline Information Systems Command	.1
TOTAL	36.0

CIM FUNDING CONTROLS

DoD has established procedures that ensure strong central oversight and review of information system modernization activities yet still allow the Components to budget and execute these programs.

MOVE TO CENTRALIZED MANAGEMENT

Over the past two years, the CIM process has resulted in major changes in the management of functional implementation and resourcing. Previously the process was independently managed and funded by the DoD Components resulting often in duplicative, redundant programs. As new, joint directions are identified, the appropriate funding sources are reflected in the DoD budget request. DoD is moving to functional management, versus Component management, in an orderly fashion.

Many of these shifts have already taken place; as additional functional areas mature the appropriate funding approach will be implemented. The major shifts in management and associated funding that have already occurred in the Department are:

1) Financial Management. Finance and accounting has been centralized to the Defense Finance and Accounting Service (DFAS) with ADP support provided by the Defense Information Services Agency's (DISA's) Defense Information Technology Service Organization (DITSO) on a fee-for-service basis. Funding is centrally controlled through the Defense Business Operations Fund (DBOF).

2) Materiel and Logistics. Supply systems and depot maintenance are centrally managed by the Assistant Secretary of Defense (Production and Logistics) (ASD(P&L)) through the Joint Logistics Systems Center (JLSC). Funding is also centrally controlled through the DBOF.

3) Supply Distribution. The Services' Supply Depots have been consolidated under the central management of the Defense Logistics Agency (DLA), who centrally controls them via the DBOF.

4) Medical. The Assistant Secretary of Defense (Health Affairs) centrally manages and controls funds for this function.

5) Personnel. The Air Force Civilian Personnel System has been designated for DoD-wide use and is managed by the Assistant Secretary of Defense (Force Management and Personnel) through the Defense Civilian Personnel Center.

6) ADP Facility Consolidation. The Assistant Secretary of Defense (Command, Control, Communications and Intelligence) (ASD(C3I)) through the Director of Defense Information (DDI) has reviewed the Components FY 1993 and future years consolidation plans. Budget requests have been specifically reviewed by the Component, via this process.

7) Computer-Aided Acquisition and Logistics Support (CALS). These programs are centrally managed by the ASD(P&L) through the Defense CALS Executive. Beginning in FY 1992, the majority of CALS programs identified to business areas are funded through the Defense Business Operations Fund.

METHODS OF ASSISTING CENTRALIZED MANAGEMENT

In those functional areas undergoing transition, the OSD continues to have the ability to exercise central management control through a number of management avenues:

1) Direction to programs. Each OSD functional manager has the authority to issue guidance that may result in program redirection. Such guidance may develop as a result of CIM efforts that identify and improved process. Typically the ASD(C3I) concurs and supports the OSD functional managers decisions. Program change may also result from the Major Automated Information System Review Council (MAISRC) direction to a specific program, such as requiring CIM-conforming actions prior to approval.

2) Withholds. As spelled out in a 1991 joint memorandum by the ASD(C3I) and the Comptroller, the use of formal withholds is available if required.

3) Development of Budget. Commencing in FY 1992 the DDI Functional Information Managers (FIMs) and the OSD functional managers exercised a much greater role in the review and adjustment of the DoD budget in support of CIM initiatives. Adjustments occur during the outyear planning and programming process as well as the internal DoD budget review in the preparation of the President's Budget request.

FY 1992 CONGRESSIONAL COMMENTS

The Appropriations Conference Report from FY 1992 stated, "The conferees are encouraged by the progress made within the Department to control CIM funding and projects and conclude that, given the pending oversight changes by the Department and sufficient progress in the maturation of CIM designated programs, consolidation of CIM resources may not be required in FY 1993."

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, DC 20301-3040

October 27, 1992

COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

MEMORANDUM FOR DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARY OF DEFENSE (FORCE MANAGEMENT AND PERSONNEL)
ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS)
ASSISTANT SECRETARY OF DEFENSE (PRODUCTION AND LOGISTICS)
ASSISTANT SECRETARY OF DEFENSE (PROGRAM ANALYSIS AND EVALUATION)
ASSISTANT SECRETARY OF DEFENSE (RESERVE AFFAIRS)
COMPTROLLER
INSPECTOR GENERAL
UNDER SECRETARY OF THE ARMY
UNDER SECRETARY OF THE NAVY
UNDER SECRETARY OF THE AIR FORCE
ASSISTANT SECRETARY OF THE NAVY (RESEARCH, DEVELOPMENT AND ACQUISITION)
PRINCIPAL DEPUTY UNDER SECRETARY OF DEFENSE (STRATEGY AND RESOURCES), OUSD (POLICY)
DIRECTOR OF INFORMATION SYSTEMS FOR COMMAND, CONTROL, COMMUNICATIONS AND COMPUTERS, ARMY
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE (COMMUNICATIONS, COMPUTERS, AND LOGISTICS)
DIRECTOR FOR COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTERS (J6), JOINT STAFF
DIRECTOR, WASHINGTON HEADQUARTERS SERVICES
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: Status of the Department of Defense (DoD) Corporate Information Management (CIM) Initiative

Attached is a summary report on the status of the DoD CIM initiative. These status reports are intended to be useful to the widest possible range of audience. Your suggestions on how we can improve future reports are both solicited and welcomed.

Paul A. Strassmann

Paul A. Strassmann
Executive Secretary
Information Policy Council

Attachment