

May 2004

DOD BUSINESS
SYSTEMS
MODERNIZATION

Billions Continue to
Be Invested with
Inadequate
Management
Oversight and
Accountability



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Highlights

Highlights of [GAO-04-615](#), a report to congressional requesters

Why GAO Did This Study

Despite its significant investment in business systems, the Department of Defense (DOD) continues to have long-standing financial and inventory management problems that prevent it from producing reliable and timely information for making decisions and for accurately reporting on its billions of dollars of inventory. GAO was asked to (1) identify DOD's fiscal year 2004 estimated funding for its business systems, (2) determine if DOD has effective control and accountability over its business systems investments, and (3) determine whether selected business systems will help resolve some of DOD's long-standing problems and whether they are being effectively managed.

What GAO Recommends

GAO makes four recommendations to DOD, including the following: (1) develop a standard business system definition and system repository and (2) have reasonable assurance that all weaknesses associated with the two case study systems—BSM and LMP—have been resolved prior to further deployments. GAO also proposes four matters for congressional consideration, including the following: establish management control, accountability, and oversight of business system funding with DOD's functional areas—referred to as domains.

DOD agreed with GAO's four recommendations to DOD, but disagreed with two of the matters for congressional consideration.

www.gao.gov/cgi-bin/getrpt?GAO-04-615.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Gregory Kutz, (202) 512-9505 (kutzg@gao.gov) or Keith Rhodes, (202) 512-6412 (rhodesk@gao.gov).

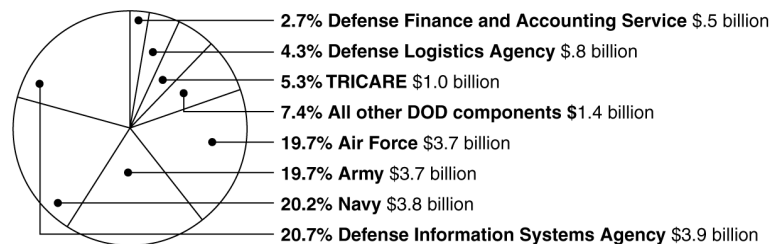
DOD BUSINESS SYSTEMS MODERNIZATION

Billions Continue to Be Invested with Inadequate Management Oversight and Accountability

What GAO Found

DOD requested approximately \$19 billion for fiscal year 2004 to operate, maintain, and modernize its reported 2,274 business systems. This stovepiped and duplicative systems environment evolved over time as DOD components—each with its own system funding—developed narrowly focused, parochial solutions to their business problems.

DOD's Fiscal Year 2004 Business System Budget Request



Source: GAO analysis of DOD IT budget request for fiscal year 2004.

As a result of this uncontrolled spending, DOD reported over 200 inventory systems and 450 personnel systems. DOD's fundamentally flawed business systems affect mission effectiveness and can contribute to the fraud, waste, and abuse that GAO continues to identify. Further, the number of business systems is likely understated in part because DOD does not have a central systems repository or a standard business system definition.

DOD does not have an effective management structure for controlling business systems investments and the business domains' roles and responsibilities have not been defined. Further, DOD does not have reasonable assurance that it is in compliance with the National Defense Authorization Act for Fiscal Year 2003, which requires the DOD Comptroller to determine that system improvements exceeding \$1 million meet the criteria specified in the act. Based on limited information provided by DOD, system improvements with at least \$479 million of obligations over \$1 million were not reviewed by the DOD Comptroller.

GAO's two case studies are examples of DOD spending hundreds of millions on business systems that will not result in corporate solutions to its long-standing inventory and related financial management problems. While these efforts should provide some improvement to the Defense Logistics Agency's and the Army's business operations, implementation problems have resulted in schedule slippages, cost increases, and critical capabilities not being delivered. These issues can be attributed, in part, to the lack of disciplined processes in the areas of requirements management and testing. If not corrected, the problems will result in two more costly, nonintegrated systems that only marginally improve DOD business operations and further impede DOD's transformation as envisioned by the Secretary of Defense.

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Abbreviations

AMC	Army Materiel Command
BDO	Battle Dress Overgarment
BEA	Business Enterprise Architecture
BMMP	Business Management Modernization Program
BMSI	Business Management and Systems Integration
BSM	Business Systems Modernization
CECOM	Communications and Electronics Command
CFO	Chief Financial Officer
CIO	Chief Information Officer
COTS	commercial-off-the-shelf
DFAS	Defense Finance and Accounting Service
DISA	Defense Information Systems Agency
DJAS	Defense Joint Accounting System
DLA	Defense Logistics Agency
DOD	Department of Defense
DPPS	Defense Procurement Payment System
DSDS	Defense Standard Disbursing System
ERP	Enterprise Resource Planning
FFMIA	Federal Financial Management Improvement Act
FOC	Full Operational Capability
GAO	General Accounting Office
GCSS – A	Global Combat Support System – Army
IDE	Integrated Data Environment
IEEE	Institute of Electrical and Electronics Engineers
IFS	Integrated Facilities System
IG	Inspector General
IT	information technology
ITMA	Information Technology Management Application
JCALs	Joint Computer Aided Acquisition and Logistics Support
JFMIP	Joint Financial Management Improvement Program

JSLIST	Joint Service Lightweight Integrated Suit Technology
LMP	Logistics Modernization Program
MOCAS	Mechanization of Contract Administration Services
OMB	Office of Management and Budget
PLM+	Product Lifecycle Management Plus
SAMMS	Standard Automated Materiel Management System
SGL	<i>U.S. Government Standard General Ledger</i>
SPS	Standard Procurement System
WORCS	Work Ordering and Reporting Communications Systems

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United States General Accounting Office
Washington, D.C. 20548

May 27, 2004

The Honorable Christopher H. Shays
Chairman
Subcommittee on National Security, Emerging Threats,
and International Relations
Committee on Government Reform
House of Representatives

The Honorable Adam H. Putnam
Chairman
Subcommittee on Technology, Information Policy,
Intergovernmental Relations and the Census
Committee on Government Reform
House of Representatives

The Honorable Todd R. Platts
Chairman
Subcommittee on Government Efficiency
and Financial Management
Committee on Government Reform
House of Representatives

The Department of Defense (DOD) spends billions of dollars annually to operate, maintain, and modernize its business systems.¹ As we have reported for years, DOD does not have the ability to produce accurate, reliable, and timely information to make sound decisions and to accurately report on its billions of dollars of inventory and other assets. In addition, the department's stovepiped, duplicative systems contribute to its vulnerability to fraud, waste, and abuse. Such problems led us in 1990 to put DOD inventory management on our list of high-risk areas in the federal

¹ Business systems include those that are used to support civilian and military personnel, finance, logistics, procurement, and transportation.

government² and in 1995 to add financial management and business systems modernization at DOD—designations that continue today.³

This report responds to your request for information on the magnitude of DOD's enormous investment in business systems, its control and accountability over these investments, and its management of certain key business systems modernization projects that are essential to the department transforming its business systems and operations. As agreed with your offices, our objectives were to (1) identify the amount of funding DOD requested in fiscal year 2004 to operate, maintain, and modernize its business systems; (2) determine whether DOD has effective control and accountability over its business systems modernization investments; and (3) determine whether selected business systems investments will help resolve some of the department's long-standing financial and inventory management problems and whether these projects are being effectively managed.

To determine how much DOD plans to spend on the operation, maintenance, and modernization of its business systems in fiscal year 2004, we analyzed DOD's information technology (IT) budget request and met with officials in the office of the DOD Chief Information Officer (CIO) and military service representatives to obtain an overview of how the IT budget request is developed. Additionally, we met with DOD officials and reviewed available documentation to determine the effectiveness of the department's efforts to control and account for its business systems investments. Further, we reviewed documentation provided by DOD to determine if all systems improvements with obligations exceeding \$1 million were reviewed by the DOD Comptroller in accordance with the

² U.S. General Accounting Office, *High-Risk Series: An Overview*, [GAO/HR-95-263](#) (Washington, D.C.: February 1995).

³ U.S. General Accounting Office, *High-Risk Series: An Update*, [GAO-03-119](#) (Washington, D.C.: January 2003).

fiscal year 2003 defense authorization act.⁴ In addition, we selected two logistics systems modernization efforts—the Defense Logistics Agency’s (DLA) Business Systems Modernization program (BSM) and the Army’s Logistics Modernization Program (LMP)—as case studies to determine if they will help resolve some of the department’s long-standing financial and inventory management problems. These two system projects represent 19 percent of the \$770 million modernization funding requested in fiscal year 2004 for logistics systems. In reviewing these two systems, we relied on project documentation provided by DOD and discussions with program management officials related to two key processes, requirements management and testing. Our work was performed from August 2003 through March 2004 in accordance with U.S. generally accepted government auditing standards. Details on our scope and methodology are included in appendix I. We requested comments on a draft of this report from the Secretary of Defense or his designee. Written comments from the Acting Under Secretary of Defense (Comptroller) are reprinted in appendix II.

Results in Brief

DOD requested approximately \$19 billion for fiscal year 2004 to operate, maintain, and modernize its reported 2,274 business systems. Despite a substantial investment over many years, DOD’s business systems remain fundamentally flawed, unable to provide timely, reliable information and leaving DOD vulnerable to fraud, waste, and abuse. The duplicative and stovepiped nature of DOD’s systems environment is illustrated by the numerous systems it has in the same functional areas. For example, DOD reported that it has over 200 inventory systems. These systems are not integrated and thus have multiple points of data entry, which can result in

⁴ Subsection 1004(d) of the Bob Stump National Defense Authorization Act for Fiscal Year 2003, Pub. L. No. 107-314, 116 Stat. 2629 (Dec. 2, 2002), provides that any amount in excess of \$1 million may be obligated for financial system improvements before approval of its enterprise architecture and a supporting transition plan only if the DOD Comptroller makes a determination that the improvement is necessary for (1) critical national security capability or critical safety and security requirements or (2) prevention of significant adverse effect on a project that is needed to achieve an essential capability. The act further provides that after the architecture is approved, the DOD Comptroller must determine before making obligations that exceed \$1 million for system improvements, that such improvements are consistent with the enterprise architecture and the transition plan.

data integrity problems. Moreover, the number of reported systems is likely understated, in part, because DOD does not have a central repository or systematic process for identifying all of the department's systems—business and national security⁵—and a standard definition for what constitutes a business system does not exist. In fact, the DOD Comptroller recently acknowledged that the actual number of business systems could be twice as many as previously reported. As a result, DOD cannot provide reasonable assurance to Congress that it has identified all of its business systems and that its IT budget request includes funding for all department business systems.

To identify the reported 2,274 business systems, DOD relied on a manual “data call” process. However, each of DOD's designated business functional domains⁶ is currently refining its respective inventory of systems. For example, the logistics domain recently identified an additional 3,000 potential systems and validated that over 1,900 are actual systems⁷—that is, they are not merely a spreadsheet or a report. However, only 565 logistics systems are presently included in DOD's reported 2,274 business systems. According to logistics domain officials, they, like the DOD components, are currently determining the actual number of systems that should be reported for their domain.

Without an accurate inventory of existing systems and with uncertainty as to whether all business system funding is reflected in the IT budget, it is not surprising that DOD has yet to establish an effective management oversight structure and processes to control its ongoing and planned business systems investments. Currently, DOD components receive funding from multiple appropriations and continue to make their own parochial investment decisions. While the domains have been designated to oversee business systems investments and to ensure that they are consistent with

⁵ These systems are intelligence systems, cryptologic activities related to national security, military command and control systems, and equipment that is an integral part of a weapon or weapons system or is critical to the direct fulfillment of military or intelligence missions.

⁶ The department has established seven domains in support of its business functions. The domains are acquisition, accounting/finance, human resource management, logistics, strategic planning and budgeting, installations and environment, and enterprise information environment.

⁷ The logistics domain defines a system as one that performs a logistics business process and has any one of the following characteristics: has annual operating costs of over \$50,000, has over 50 users, or operates on a network.

the goals and objectives of the business enterprise architecture (BEA), their specific roles and responsibilities have not yet been clearly defined. While a recently approved IT portfolio management policy establishes general departmental policies and assigns responsibility to the domains, specific procedures, including developing standard criteria for system reviews, have not been finalized.

Additionally, DOD does not have the processes and controls in place to provide reasonable assurance that it is in compliance with the fiscal year 2003 defense authorization act, which requires the DOD Comptroller to review all system improvements with obligations exceeding \$1 million. We also found that the DOD Comptroller does not have an effective process in place to identify projects with obligations in excess of \$1 million for system modernizations. As a result, DOD was not able to satisfy our request for information on all obligations in excess of \$1 million for system modernizations since passage of the act. Based upon limited information reported by the military services for fiscal years 2003 and 2004, the military services did not submit for the DOD Comptroller's review the majority of the system improvements with total obligations exceeding \$1 million. Based upon the reported information, obligations totaling \$479 million were made by the military services for system improvements that were not referred to the DOD Comptroller for the required review. Further, our analysis of budgetary information indicated that system improvements totaling potentially several billion dollars were not referred to the DOD Comptroller for review.

Our two case study projects—BSM and LMP—are examples of how DOD's lack of control and accountability over business systems investments continues to result in the department spending hundreds of millions of dollars on systems that will not result in integrated corporate solutions to some of its long-standing inventory and related financial management problems. For example, neither BSM nor LMP will provide total asset visibility⁸ over DOD's billions of dollars of inventory, such as repair parts and chemical and biological protective clothing. The lack of total asset visibility is a key gap in the department's ability to track and locate inventory. According to DLA and Army officials, enhancing the

⁸ DOD defines total asset visibility as "the capability to provide users with timely and accurate information on the location, movement, status, and identity of units, personnel, equipment, material, and supplies." It also includes the capability to act upon that information to improve overall performance of DOD's logistics practices.

department's visibility over its assets depends on the successful development and implementation of other systems, for which implementation schedules and cost estimates have not been fully developed. Further, the first deployment of LMP did not have the capability to accurately value inventory at the Tobyhanna Army Depot in accordance with departmental guidance. According to the DOD Comptroller's office, it became aware of the problem subsequent to LMP becoming operational and has directed that further deployments be delayed until this capability is provided.

While BSM and LMP are intended to transform the logistics operations for DLA and the Army, respectively, the initial deployment of each system has not provided key capabilities. For example, we found that because the Army did not test LMP's over 70 interfaces end to end with Army and external systems—such as those operated by the Defense Finance and Accounting Service (DFAS)—to ensure they operate correctly, operational problems occurred. For instance, contract data had to be manually reentered into the Mechanization of Contract Administration Services (MOCAS) system—the department's contract administration system. Similarly, BSM's interfaces were not operating properly. Users experienced difficulties in processing orders, resulting in incorrect information on customer orders, customer orders never being sent, and vendor invoices not being paid on time. In large part, these operational problems occurred because DLA and the Army did not have in place effective requirements management⁹ and testing processes.

We have previously recommended¹⁰ specific actions that are needed to effectively control ongoing and planned business systems investments. However, the department has not fully implemented these

⁹ According to the Software Engineering Institute, requirements management is a process that establishes a common understanding between the customer and the software project manager regarding the customer's business needs that will be addressed by a project. A critical part of this process is to ensure that the requirements development portion of the effort documents, at a sufficient level of detail, the problems that need to be solved and the objectives that need to be achieved.

¹⁰ U.S. General Accounting Office, *Information Technology: Architecture Needed to Guide Modernization of DOD's Financial Operations*, [GAO-01-525](#) (Washington, D.C.: May 17, 2001); *DOD Business System Modernization: Improvements to Enterprise Architecture Development and Implementation Efforts Needed*, [GAO-03-458](#) (Washington, D.C.: Feb. 28, 2003); and *DOD Business Systems Modernization: Important Progress Made to Develop Business Enterprise Architecture, but Much Work Remains*, [GAO-03-1018](#) (Washington, D.C.: Sept. 19, 2003).

recommendations, and therefore we are reiterating those recommendations because they are so critical to the success of the department's transformation efforts. We are also making four recommendations to the Secretary of Defense aimed at improving the department's ability to (1) identify the number of business systems and improve the accuracy and completeness of its related IT budget request, (2) effectively control its business system investments, and (3) deliver the intended capability of LMP and BSM. This report also suggests that Congress may wish to consider four legislative initiatives to establish specific management oversight, accountability, and control of business system funding to business function domains.

In its comments on a draft of this report, DOD agreed with the four recommendations to the Secretary of Defense and two of the four matters for congressional consideration. DOD did not agree that the responsibility for the planning, design, acquisition, deployment, operation, maintenance, modernization, and oversight of business systems should be assigned to domain leaders (e.g., the Under Secretary of Defense for Acquisition, Technology and Logistics and the DOD CIO). The department stated that the development of the business enterprise architecture and the business IT investment management structure would provide the necessary management and oversight responsibility. In our view, this position ignores the fact that DOD's tradition of having components responsible for these functions has resulted in the existing duplicative, nonintegrated, stovepiped business system environment that we have today that cannot provide accurate information on the results of DOD's operations. Shifting responsibility for these functions to the domains would be one way of overcoming lingering cultural resistance in order to obtain corporate solutions to common problems within reasonable time and cost parameters.

DOD also did not agree that funds for business systems should be appropriated to the domains. DOD stated that improved control and accountability over business system investments would be obtained through the domains guiding IT investments and establishing investment review boards. These are positive steps and we would agree that the domains may be able to influence business system investment decisions. Our concern is about the extent of influence they can exert given that they will not have the means to effect real change because they will not control the funding. See the "Agency Comments and Our Evaluation" section of this report for a more detailed discussion of the agency comments. We have reprinted DOD's written comments in appendix II.

Background

DOD is one of the largest and most complex organizations in the world. In fiscal year 2003, DOD reported that its operations involved over \$1.1 trillion in assets, over \$1.5 trillion in liabilities, approximately 3.3 million military and civilian personnel—including guard and reserve components, and disbursements of over \$416 billion. Execution of these operations spans a wide range of defense organizations, including the military services and their respective major commands and functional activities, numerous large defense agencies and field activities, and various combatant and joint operational commands that are responsible for military operations for specific geographic regions or theaters of operations.

To execute these military operations, the department performs an assortment of interrelated and interdependent business functions, including logistics management, procurement, health care management, and financial management. To support its business functions, DOD reported in April 2003 that it relied on about 2,274 business systems, including accounting, acquisition, logistics, and personnel systems.¹¹ To support its existing systems environment, DOD requests billions of dollars annually. The Assistant Secretary of Defense for Networks and Information Integration—DOD’s CIO—is responsible for compiling and submitting the department’s IT budget reports to Congress and the Office of Management and Budget (OMB). According to a DOD CIO official, the information in the IT budget request is initially prepared by various DOD components and processed through their respective CIOs and comptrollers. The information is then forwarded to the DOD CIO office, where it is consolidated before being sent to OMB and Congress. The DOD component CIOs and comptrollers are responsible for, and are required to certify, the reliability of the information about their respective initiatives that is included in the IT budget request.

Serious Financial Management Weaknesses Persist

DOD continues to confront pervasive, decades-old financial and business management problems related to its systems, processes (including internal controls), and people (human capital). These problems have (1) resulted in a lack of reliable information needed to make sound decisions and report

¹¹ DOD excludes from its business systems those designated as national security systems under section 2315 of Title 10, United States Code. These systems are intelligence systems, cryptologic activities related to national security, military command and control systems, and equipment that is an integral part of a weapon or weapons system or is critical to the direct fulfillment of military or intelligence missions.

the status of DOD's activities through financial and other reports; (2) hindered its operational efficiency; and (3) left the department vulnerable to fraud, waste, and abuse. For example:

- Of the 481 mobilized Army National Guard soldiers from six GAO case study Special Forces and Military Police units,¹² 450 had at least one pay problem associated with their mobilization. DOD's inability to provide timely and accurate payments to these soldiers, many of whom risked their lives in recent Iraq or Afghanistan missions, distracted them from their missions, imposed financial hardships on the soldiers and their families, and has had a negative impact on retention.¹³
- Some DOD contractors have been abusing the federal tax system with little or no consequence and DOD is not collecting as much in unpaid taxes as it could. Under the Debt Collection Improvement Act of 1996, DOD is responsible—along with the Department of the Treasury—for offsetting payments made to contractors to collect funds owed, such as unpaid federal taxes. However, we found that DOD had collected only \$687,000 of unpaid taxes as of September 2003. We estimated that at least \$100 million could be collected annually from DOD contractors through effective implementation of the levy and debt collection program.¹⁴
- Our review of fiscal year 2002 data revealed that about \$1 of every \$4 in contract payment transactions in DOD's MOCAS system was for adjustments to previously recorded payments—\$49 billion of adjustments out of \$198 billion in disbursement, collection, and adjustment transactions. According to DOD, the cost of researching and

¹² The six case study units reviewed are the Colorado B Company Special Forces, Virginia B Company Special Forces, West Virginia C Company Special Forces, Mississippi 114th Military Police Company, California 49th Military Police Headquarters and Headquarters Detachment, and the Maryland 200th Military Police Company. In addition, our limited review of pay experiences of soldiers in the Colorado Army Guard's 220th Military Police Company, which recently returned from Iraq, indicated that some of the same types of pay problems that we found in our case studies had also affected soldiers in this unit.

¹³ U.S. General Accounting Office, *Military Pay: Army National Guard Personnel Mobilized to Active Duty Experienced Significant Pay Problems*, [GAO-04-89](#) (Washington, D.C.: Nov. 13, 2003).

¹⁴ U.S. General Accounting Office, *Financial Management: Some DOD Contractors Abuse the Federal Tax System with Little Consequence*, [GAO-04-95](#) (Washington, D.C.: Feb. 12, 2004).

making adjustments to accounting records was about \$34 million in fiscal year 2002, primarily to pay hundreds of DOD and contractor staff.¹⁵

- Tens of millions of dollars are not being collected each year by military treatment facilities from third-party insurers because key information required to effectively bill and collect from third-party insurers is often not properly collected, recorded, or used by the military treatment facilities.¹⁶

The long-standing problems continue despite the significant investments made in DOD business systems each year. The challenges continue, in part, because of DOD's inability to effectively modernize its business systems. For example, our March 2003 report and testimony¹⁷ concluded that DOD had not effectively managed and overseen its planned investment of over \$1 billion in four DFAS systems modernization efforts. DOD has terminated two of the four DFAS systems modernization projects—the Defense Procurement Payment System (DPPS) and the Defense Standard Disbursing System (DSDS). The DOD Comptroller terminated DPPS in December 2002 after more than 7 years of effort and an investment of over \$126 million, citing poor program performance and increasing costs. DFAS terminated DSDS in December 2003 after approximately 7 years of effort and an investment of about \$53 million, noting that a valid business case for continuing the effort could not be made. These two projects were planned to provide DOD the capability to address some of its long-standing contract and vendor payment problems.

¹⁵ U.S. General Accounting Office, *DOD Contract Payments: Management Action Needed to Reduce Billions in Adjustments to Contract Payment Records*, [GAO-03-727](#) (Washington, D.C.: Aug. 8, 2003).

¹⁶ U.S. General Accounting Office, *Military Treatment Facilities: Improvements Needed to Increase DOD Third-Party Collections*, [GAO-04-322R](#) (Washington, D.C.: Feb. 20, 2004).

¹⁷ U.S. General Accounting Office, *DOD Business Systems Modernization: Continued Investment in Key Accounting Systems Needs to be Justified*, [GAO-03-465](#) (Washington, D.C.: Mar. 28, 2003) and *DOD Business Systems Modernization: Longstanding Management and Oversight Weaknesses Continue to Put Investments at Risk*, [GAO-03-553T](#) (Washington, D.C.: Mar. 31, 2003).

Long-standing Inventory Management Deficiencies

Since 1990, we have identified DOD's management of secondary inventories (spare and repair parts, clothing, medical supplies, and other items to support the operating forces) as a high-risk area. One primary factor contributing to DOD's inventory management weaknesses is its outdated and ineffective systems. These system deficiencies have hindered DOD's ability to (1) support its reported inventory balances; (2) provide inventory visibility; and (3) provide accurate financial and management information related to its property, plant, and equipment. For example:

- DOD incurred substantial logistical support problems as a result of weak distribution and accountability processes and controls over supplies and equipment shipments in support of Operation Iraqi Freedom activities, similar to those encountered during the prior Gulf War. These weaknesses resulted in (1) supply shortages, (2) backlogs of materials delivered in theater but not delivered to the requesting activity, (3) a discrepancy of \$1.2 billion between the amount of materiel shipped and that acknowledged by the activity as received, (4) cannibalization of vehicles, and (5) duplicate supply requisitions.¹⁸
- Inadequate asset visibility and accountability resulted in DOD selling new Joint Service Lightweight Integrated Suit Technology—the current chemical and biological protective garment used by our military forces—on the Internet for \$3 each (coat and trousers) while at the same time buying them for over \$200 each.¹⁹ DOD has acknowledged that these garments should have been restricted to DOD use only and therefore should not have been available to the public.

¹⁸ U.S. General Accounting Office, *Defense Logistics: Preliminary Observations on the Effectiveness of Logistics Activities during Operation Iraqi Freedom*, [GAO-04-305R](#) (Washington, D.C.: Dec. 18, 2003).

¹⁹ U.S. General Accounting Office, *DOD Management: Examples of Inefficient and Ineffective Business Processes*, [GAO-02-873T](#) (Washington, D.C.: June 25, 2002).

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- Our analysis of data on more than 50,000 maintenance work orders opened during the deployments of six battle groups indicated that about 29,000 orders (58 percent) could not be completed because the needed repair parts were not available on board ship. This condition was a result of inaccurate ship configuration records and incomplete, outdated, or erroneous historical parts demand data. Such problems not only have a detrimental impact on mission readiness, they may also increase operational costs due to delays in repairing equipment and holding unneeded spare parts inventory.²⁰

Efforts to Modernize DOD Business Systems

Transformation of DOD's business systems and operations is critical to the department having the ability to provide Congress and DOD management with accurate and timely information for use in the decision-making process. One of the key elements we have reported²¹ as necessary to successfully execute the transformation is establishing and implementing an enterprise architecture. In this regard, the department has undertaken a daunting challenge to modernize its existing business systems environment through the development and implementation of a BEA or modernization blueprint. This effort is an essential part of the Secretary of Defense's broad initiative to "transform the way the department works and what it works on." As previously noted, the department has designated seven domain owners to be responsible for implementing the BEA, which includes (1) performing system reviews and approving initiative funding as part of investment management and (2) enforcing compliance with the BEA.

²⁰ U.S. General Accounting Office, *Defense Inventory: Opportunities Exist to Improve Spare Parts Support Aboard Deployed Navy Ships*, [GAO-03-887](#) (Washington, D.C.: Aug. 29, 2003).

²¹ U.S. General Accounting Office, *Department of Defense: Status of Financial Management Weaknesses and Progress Toward Reform*, [GAO-03-931T](#) (Washington, D.C.: June 25, 2003).

In April 2003, DOD reported that its business systems environment consisted of 2,274 systems and systems acquisition projects spanning numerous business operations that were divided into the seven domains and established a domain leader for each area.²² DOD's efforts to manage the modernization initiative include a strategy to vest the domains with the authority, responsibility, and accountability for business transformation, extension and implementation of the architecture, and investment management. We have also recommended²³ that DOD establish an investment management structure to gain control over business system investments by (1) establishing a hierarchy of investment review boards from across the department, (2) establishing a standard set of investment review and decision-making criteria for its ongoing IT system projects, and (3) directing the boards to perform a comprehensive review of all ongoing business system investments.

Two of the business systems modernization efforts DOD has under way to address some of its inventory problems are DLA's BSM and the Army's LMP. These two business systems represent approximately 19 percent of the \$770 million of the modernization funding requested in fiscal year 2004 for logistics systems. DLA and the Army are using the same commercial-off-the-shelf (COTS) enterprise resource planning²⁴ software package. DLA and the Army are using the inventory management portion of the package.

BSM. In November 1999, DLA initiated an effort to replace its materiel management systems—the Standard Automated Materiel Management System (SAMMS) and the Defense Integrated Subsistence Management System—with BSM. DLA has used the two existing systems for over 30

²² The seven domains and the respective domain leaders are (1) acquisition—Under Secretary of Defense (Acquisition, Technology and Logistics); (2) accounting and finance—Under Secretary of Defense (Comptroller)/Chief Financial Officer; (3) human resources management—Under Secretary of Defense (Personnel and Readiness); (4) installations and environment—Under Secretary of Defense (Acquisition, Technology and Logistics); (5) logistics—Under Secretary of Defense (Acquisition, Technology and Logistics); (6) strategic planning and budgeting—Under Secretary of Defense (Comptroller)/Chief Financial Officer; and (7) enterprise information environment—Assistant Secretary of Defense (Networks and Information Integration)/Chief Information Officer.

²³ [GAO-03-458](#) and [GAO-03-1018](#).

²⁴ These commercial products are referred to as enterprise resource planning (ERP) solutions. ERP products consist of multiple, integrated functional modules that do different tasks, such as track payroll, keep a standard general ledger, manage supply chains, and organize customer data.

years to manage its inventory. BSM is intended to transform how DLA conducts its operations in five core business processes: order fulfillment, demand and supply planning, procurement, technical/quality assurance, and financial management. BSM was deployed in July 2002 and is operating at the Defense Supply Center Columbus—Columbus, Ohio; the Defense Supply Center Philadelphia—Philadelphia, Pennsylvania; the Defense Supply Center Richmond—Richmond, Virginia; the Defense Distribution Center—New Cumberland, Pennsylvania; the DLA Logistics Information Service—Battle Creek, Michigan; and DLA headquarters—Fort Belvoir, Virginia. The initial deployment included low-volume, low-dollar-value items. BSM has about 900 users and is populated with over 170,000 inventory items valued at about \$192 million. Once it becomes fully operational, BSM is expected to have about 5,000 users and control and account for about 5 million inventory items valued at about \$12 billion. DLA currently estimates that it will invest approximately \$850 million to fully deploy BSM.

LMP. In February 1998, the U.S. Army Materiel Command (AMC) began an effort to replace its existing materiel management systems—the Commodity Command Standard System and the Standard Depot System—with LMP. The Army has used the existing systems for over 30 years to manage its inventory and depot maintenance operations. LMP is intended to transform AMC’s logistics operations in six core processes: order fulfillment, demand and supply planning, procurement, asset management, materiel maintenance, and financial management. LMP is a 12-year acquisition requirements contract.²⁵ LMP became operational at the U.S. Army Communications and Electronics Command (CECOM), Fort Monmouth, New Jersey, and Tobyhanna Army Depot, Tobyhanna, Pennsylvania, in July 2003. The initial deployment of LMP consisted of inventory items such as electronics; electronic repair components; and communications and intelligence equipment such as night vision goggles, electronic components such as circuit boards, and certain munitions such as guidance systems included in missiles. Currently, LMP has 4,500 users at 12 locations and is populated with over 2 million inventory items valued at about \$440 million. When LMP is fully implemented, its capacity is expected to include more than 15,000 users at 149 locations and will be populated with 6 million Army-managed inventory items valued at about

²⁵ A contract in which the buyer agrees to purchase all requirements from one party when the exact time and/or exact quantities of future deliveries are not known at the time of the contract award.

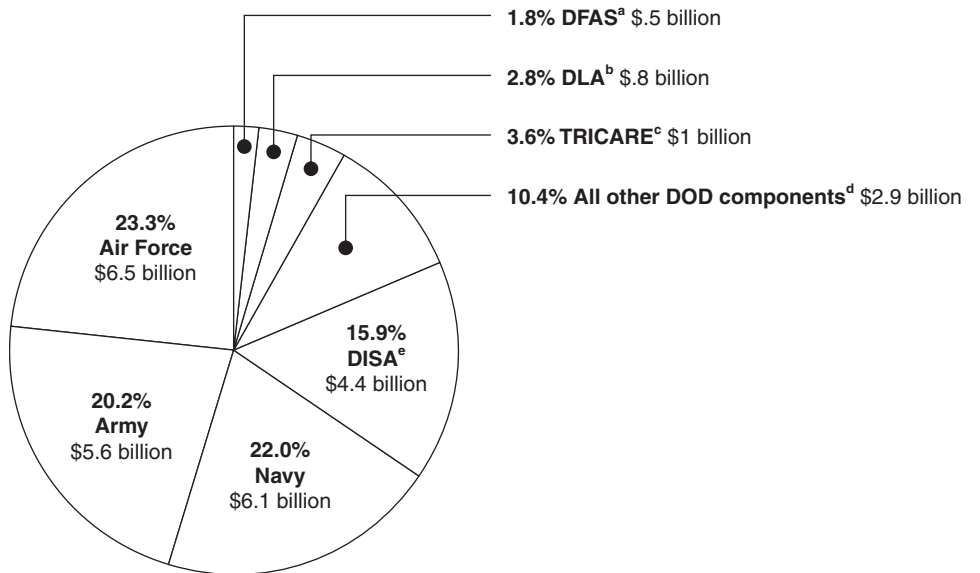
\$40 billion. The Army currently estimates that it will invest approximately \$1 billion to fully deploy LMP.

**Fiscal Year 2004
Budget for DOD's
Stovepiped,
Duplicative Business
Systems Is Nearly
\$19 Billion**

For fiscal year 2004, DOD requested approximately \$28 billion in IT funding to support a wide range of military operations as well as DOD business system operations, of which approximately \$18.8 billion²⁶ is for the reported 2,274 business systems—\$4.8 billion for business systems development/modernization and about \$14 billion for operation and maintenance. As shown in figure 1, the \$28 billion is spread across the military services and defense agencies. The \$28 billion represents a \$2 billion increase over fiscal year 2003.

²⁶ The remaining \$9 billion is for National Security Systems.

Figure 1: Distribution of DOD's Nearly \$28 Billion IT Budget Request (Dollars in Billions)



Source: GAO analysis of DOD IT budget request for fiscal year 2004.

^aDFAS is the centralized accounting agency for DOD.

^bDLA is DOD's logistics manager for all consumable and some repair items; its primary business function is providing supply support to sustain military operations and readiness.

^cTRICARE is the health care system for DOD's active duty personnel, their dependents, and retirees.

^dOther DOD components include entities such as the Office of the Secretary of Defense and the Defense Contract Management Agency.

^eThe Defense Information Systems Agency provides DOD and other organizations a wide range of information services, such as data processing, telecommunications services, and database management.

The department's business systems are used to record the events associated with DOD's functional areas, such as finance, logistics, personnel, and transportation. Table 1 shows how business system funding is spread across the various DOD components.

Table 1: DOD Fiscal Year 2004 IT Budget Request for Business Systems by DOD Component

Dollars in millions

Component	Current services	Development/ modernization	Total
Army	\$2,400	\$1,252	\$3,652
Navy	\$3,221	\$557	\$3,778
Air Force	\$2,747	\$990	\$3,737
DISA	\$3,145	\$793	\$3,938
TRICARE	\$736	\$244	\$980
DLA	\$452	\$322	\$774
DFAS	\$399	\$103	\$502
Other DOD components	\$895	\$545	\$1,440
Total	\$13,995	\$4,806	\$18,801

Source: GAO analysis based on DOD's fiscal year 2004 IT budget request.

OMB requires that funds requested for IT projects be classified as either steady state (referred to by DOD as “current services”) or as development/modernization. Current services are funds for operating and maintaining systems at current levels (i.e., without major enhancements). The development/modernization budget category represents funds for developing new IT systems or making major enhancements to existing systems.

Some systems, such as BSM, have both current services and development/modernization funding. For BSM, while current services are to be used for operating the system at various DLA locations, development/modernization funds are to be used for activities such as developing additional system functionality. For fiscal year 2004, DLA's IT budget request, including BSM, was \$452 million for current services and \$322 million for development/modernization. Generally, current services are financed through the Operation and Maintenance appropriations, whereas development/modernization funding can come from any one or combination of several funding sources, such as the Research, Development, Test, and Evaluation appropriations; the Procurement appropriations; or the Defense Working Capital Fund.

As part of DOD's ongoing business systems modernization efforts, DOD's Business Management Modernization Program (BMMP) and Business

Management and Systems Integration (BMSI) office²⁷ are creating a repository of the department's existing business systems. DOD reported that as of April 2003, this environment consisted of 2,274 systems and system acquisition projects. To provide for investment management, DOD assigned the systems to the seven domains. For example, DOD assigned 565 systems to the logistics domain, 210 of which primarily perform inventory functions and 32 of which perform transportation functions. Similarly, the accounting and finance domain has 542 systems of which 240 primarily perform finance and accounting functions. Table 2 presents the composition of DOD's reported business systems by domain and functional area.

²⁷ BMMP is the department's business transformation initiative encompassing defense policies, processes, people, and systems that guide, perform, or support all aspects of business management, including development and implementation of the BEA. The Under Secretary of Defense (Comptroller) established a DOD-wide program management office, BMSI, to oversee and manage BMMP.

Table 2: Reported DOD Business Systems by Domain and Functional Area

Domain	Functional area	Air Force	Army	Navy/ Marine Corps	DFAS	Other	Total
Acquisition							
	Acquisition	20	13	42	0	11	86
	Procurement	4	5	10	0	3	22
	Other functions combined	3	13	9	3	7	35
	Subtotal	27	31	61	3	21	143
Accounting and finance							
	Finance and accounting	22	31	60	103	24	240
	Budget formulation/execution	3	5	61	2	7	78
	Cost	9	21	29	0	4	63
	Management information	2	12	6	36	3	59
	Vendor payment	1	2	2	9	2	16
	Other functions combined	6	17	37	15	11	86
	Subtotal	43	88	195	165	51	542
Human resources management							
	Personnel	53	311	37	20	31	452
	Health	0	3	0	0	40	43
	Time and attendance	2	3	11	3	0	19
	Travel	3	10	20	1	1	35
	Other functions combined	13	60	18	9	16	116
	Subtotal	71	387	86	33	88	665
Installations and environment							
	Real property management	8	35	2	1	2	48
	Personnel	1	9	0	0	0	10
	Inventory	0	5	3	0	1	9
	Logistics	1	4	0	0	3	8
	Other functions combined	2	45	4	0	2	53
	Subtotal	12	98	9	1	8	128
Logistics							
	Inventory	50	90	42	4	24	210
	Logistics	57	44	28	2	29	160
	Transportation	8	11	2	0	11	32
	Personal property management	6	5	5	0	2	18
	Real property management	3	3	4	0	0	10
	National defense property management	2	0	1	0	0	3

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Domain	Functional area	Air Force	Army	Navy/ Marine Corps	DFAS	Other	Total
	Other functions combined	51	30	21	5	11	118
	Acquisition	3	8	1	0	2	14
	Subtotal	180	191	104	11	79	565
Strategic planning and budgeting							
	Budget formulation/execution	15	45	74	12	8	154
	Finance and accounting	1	4	7	3	1	16
	Other functions combined	7	14	17	0	2	40
	Subtotal	23	63	98	15	11	210
Enterprise information environment							
	Other functions combined	1	5	2	3	10	21
	Subtotal	1	5	2	3	10	21
Total		357	863	555	231	268	2,274

Source: GAO analysis of BMMP April 2003 data.

Table 2 clearly indicates that there are numerous redundant systems operating in the department today. For example, DOD has reported that it has 16 vendor pay systems that are used to pay contractors for services provided. A further illustration is the department's statement that the Defense Integrated Military Human Resources System, which is to serve as DOD's integrated military personnel and pay system, will replace a reported 79 existing systems.

BMSI officials stated that they are validating the 2,274 different systems and related functional area categories, as illustrated in table 2, with the domains. Although the systems are different, functional area categories may be the same among the domains. For example, the Accounting and Finance and Strategic Planning and Budgeting domains both report having systems that perform finance and accounting functions. BMSI officials have stated that through the BMSI office's validation efforts, the functional area categories may be renamed or systems may be reclassified to other functional areas. For example, BMSI officials explained that the finance and accounting functional area within the Strategic Planning and Budgeting domain may be changed to Budgetary Financial Data.

Although the BMSI office has created an initial repository of 2,274 business systems to support DOD's systems modernization efforts, its systems inventory is currently neither complete nor informative enough for decision making. For example, according to logistics domain officials,

there are currently about 3,000 systems just within the logistics domain. Of that amount, about 1,900 systems have been validated by the DOD components as logistics systems—that is, they are not merely a spreadsheet or a report. Such a determination has not been made for the other 1,100. Our analysis showed that of the 1,900 systems, 253 systems are included in DOD’s reported 2,274 business systems. According to logistics domain officials, they are in the process of determining if the remaining systems should be classified as a business system or a national security system.

The BMSI office has not reported additional systems since April 2003 because it is continuing to reconcile its inventory with two other databases—the IT Registry and the Information Technology Management Application (ITMA). This reconciliation is necessary because the three databases are not integrated. The IT Registry is a database of mission-critical²⁸ and mission-essential²⁹ IT systems maintained by the DOD CIO.³⁰ As reported by the DOD Inspector General (IG),³¹ each DOD component could determine whether a system should be reported as mission critical or mission essential in the IT Registry. Since the definitions were subject to interpretation, the DOD IG concluded that the IT Registry would not necessarily capture the universe of DOD business systems. The ITMA is an application used by the DOD CIO to collect system information for the development of the department’s annual IT budget request. Each of these databases—the IT Registry, the ITMA, and the BMMP systems inventory—contains varying information, some of which overlaps. For example, the IT Registry includes warfighting systems as well as some business systems, while the BMMP inventory includes only systems related to the

²⁸ A mission-critical system is a system that if lost would cause the stoppage of warfighter operations or direct mission support of warfighter operations.

²⁹ A mission-essential system is a system that the component head determines is basic and necessary for the accomplishment of the organizational mission.

³⁰ On December 1, 2003, the DOD CIO issued an IT Registry policy memorandum that would expand the IT Registry to provide information about all DOD IT systems and required all component CIOs to add all non-mission-critical and non-mission-essential IT systems to the IT Registry at a rate determined by the responsible CIO each year, to ensure that all IT systems are registered in the DOD IT Registry no later than September 30, 2006.

³¹ U.S. Department of Defense, Office of the Inspector General, *Information Technology: Systems Inventory to Support the Business Enterprise Architecture*, D-2003-117 (Arlington, Va.: July 10, 2003).

department's business operations. The ITMA includes initiatives and programs, such as the department's BEA effort, that are not IT systems.

Although DOD recognizes that it needs an integrated repository of systems information in order to control and prioritize its IT investments, the difficulty of developing a single source is compounded by the fact that DOD has not developed a universal definition of what should be classified as a business system. Lacking a standard definition that is used consistently across the entire department, DOD does not have reasonable assurance that it has identified all of its business systems. As a result, DOD does not have complete visibility over its business systems to permit analysis of gaps and redundancies in DOD's business systems environment and to assist in preventing the continuing proliferation of redundant, stovepiped business systems.

Furthermore, DOD cannot provide reasonable assurance to Congress that its IT budget request includes all funding for the department's business systems. For example, we reported³² in December 2003, that DOD's IT budget submission to Congress for fiscal year 2004 contained material inconsistencies, inaccuracies, or omissions that limited its reliability. We identified discrepancies totaling about \$1.6 billion between two primary parts of the submission—the IT budget summary report and the detailed capital investments reports on each IT initiative. These problems were largely attributable to insufficient management attention and limitations in departmental policies and procedures, such as guidance in DOD's Financial Management Regulation, and to shortcomings in systems that support budget-related activities.

³² U.S. General Accounting Office, *Information Technology: Improvements Needed in the Reliability of Defense Budget Submissions*, [GAO-04-115](#) (Washington, D.C.: Dec. 19, 2003).

DOD Continues to Have Ineffective Control and Accountability over Business System Investments

DOD continues to lack effective management oversight and control over business systems modernization investments. While the domains have been designated to oversee business systems investments, the actual funding, as shown in table 1, continues to be spread among the military services and defense agencies, thereby enabling the numerous DOD components to continue to develop stovepiped, parochial solutions to the department's long-standing financial management and business operation challenges. Furthermore, the department does not have reasonable assurance that it is in compliance with the fiscal year 2003 defense authorization act, which provides that obligations in excess of \$1 million for systems improvements may not be made unless the DOD Comptroller makes a determination that the improvements are in accordance with the criteria specified in the act.³³ Lacking a departmentwide focus and effective management oversight and control of business systems investment, DOD continues to invest billions of dollars in systems that fail to provide integrated corporate solutions to its business operation problems.

DOD Is Working to Finalize Management Oversight Structure and Guidance

In response to our September 2003 report, DOD said that it was taking several actions to improve the control and accountability over business systems investments. However, as of March 2004, many of these actions had not been finalized. As a result, the department has not put into place the organizational structure and process controls to adequately align business system investments with the BEA. Each DOD component continues to make its own investment decisions, following different approaches and criteria. The lack of an institutionalized investment strategy has contributed to the department's current complex, error-prone, nonintegrated systems environment and precluded the development of corporate system solutions to long-standing business problems. In particular, DOD has not clearly defined the roles and responsibilities of the domains, established common investment criteria, and conducted a

³³ As noted earlier, the act provides that any amount in excess of \$1 million may be obligated for financial system improvements before approval of its enterprise architecture and a supporting transition plan only if the DOD Comptroller makes a determination that the improvement is necessary for (1) critical national security capability or critical safety and security requirements or (2) prevention of significant adverse effect on a project that is needed to achieve an essential capability. The act further provides that after the architecture is approved, the DOD Comptroller must determine before making obligations that exceed \$1 million for system improvements that such improvements are consistent with the enterprise architecture and the transition plan.

comprehensive review of its ongoing IT investments to ensure that they are consistent with the BEA.

As we have previously reported,³⁴ best practices recommend that investment review boards be established to control an entity's systems investments and that the boards use a standard set of investment review and decision-making criteria to ensure compliance and consistency with the architecture. We have also recommended that the department establish investment review boards to better control investments and that each board be composed of representatives from across the department.

DOD has decided that in lieu of the investment review boards, the domains will be responsible for investment management. In March 2004, the Deputy Secretary of Defense signed an IT portfolio investment management policy and assigned overall responsibility to the domains. However, the specific roles and responsibilities of the domains had not been formalized and standard criteria for performing systems reviews have not been finalized. According to DOD officials, the related detailed directive and instructions will outline the specific roles and responsibilities of the domains and how they are to be involved in the overall business systems investment management process. The department is drafting a memorandum that will require the domains to develop a plan for implementing the investment management policy.

Further, the department has developed draft system review and certification process guidance that outlines the criteria that are to be used by the domains and program managers to assess system compliance with the BEA. The systems covered in the review process consist of new system initiatives, ongoing system developmental projects, and systems in sustainment. According to DOD, once a system is placed in sustainment, modernization funding cannot exceed \$1 million. The system review and certification process guidance has been integrated with the department's existing acquisition guidance³⁵—commonly referred to as the DOD 5000 series. The acquisition guidance requires that certain documentation be prepared at different stages—known as milestones—within the system's life-cycle process. This documentation is intended to provide relevant information for management oversight and for decision making on whether

³⁴ [GAO-03-458](#).

³⁵ DOD Instruction 5000.2, *Operation of the Defense Acquisition System* (May 12, 2003).

the investment of resources is cost beneficial and technically feasible. DOD officials noted that the system review process would be further enhanced because the DOD Comptroller will have to certify that the proposed investment is consistent and aligned with the BEA at each milestone decision. According to DOD, the certification process will help ensure that the obligation of funds of over \$1 million for the modernization of a system are in accordance with the criteria set forth in the fiscal year 2003 defense authorization act.

While these actions are aimed at improving the control and accountability over business systems investments, we have previously reported that the department did not adhere to the milestone decision-making and oversight processes it established to ensure the economical and technical risks associated with systems modernizations have been mitigated. For example, our March 2003 report³⁶ noted that DOD had not effectively managed and overseen its planned investment of over \$1 billion in four DFAS system modernization efforts. One project's estimated cost had increased by as much as \$274 million, while the schedule slipped by almost 4 years. For each of these projects, DOD oversight entities—DFAS, the DOD Comptroller, and the DOD CIO—could not provide documentation that indicated they had questioned the impact of the cost increases and schedule delays, and allowed the projects to proceed in the absence of the requisite analytical justification. Such analyses provide the requisite justification for decision makers to use in determining whether to invest additional resources in anticipation of receiving commensurate benefits and mission value. Two of the four projects—DPPS and DSDS—were terminated in December 2002 and December 2003, respectively, after an investment of approximately \$179 million that did not improve the department's business operations.

³⁶ [GAO-03-465](#).

While DOD is continuing to work toward establishing the structure and processes to manage its business systems investments, it has not yet conducted a comprehensive system review of its ongoing IT investments to ensure that they are consistent with its BEA efforts. The domains have raised concerns that they did not have sufficient staff to perform the system reviews. To assist the domains with their system reviews, in December 2003, the Deputy Secretary of Defense allotted the domains 54 additional staff. Despite concerns over the sufficiency of staff resources and the lack of organizational structure and processes for controlling system investments, the department has acted to curtail the funding for some systems. For example, effective October 2003, the DOD Comptroller directed that the Defense Joint Accounting System (DJAS)³⁷ be put into sustainment. That is, funding would be provided to operate and maintain the system, but not to upgrade or modernize the system. In June 2000, the DOD Inspector General (IG) reported³⁸ that DFAS was developing DJAS at an estimated life-cycle cost of about \$700 million without demonstrating that the program was the most cost-effective alternative for providing a portion of DOD's general fund accounting. DJAS is only being operated at two locations—Fort Benning, Georgia, and the Missile Defense Agency—and there are no longer any plans to implement the system at other locations.

Another system that DOD has placed into sustainment is the Joint Computer Aided Acquisition and Logistics Support (JCALS) system. JCALS was initiated in June 1992 to enable the services to streamline DOD's logistical and acquisition functions through business process reengineering and eliminating existing systems. In May 2003, Gartner, Inc., reviewed the cost, efficiency, and effectiveness of JCALS and reported that the program is costly to operate and maintain. The study recommended freezing all software and technology spending. According to DOD's fiscal year 2004 IT budget, over \$1 billion had been invested in JCALS since the inception of the program.

³⁷ The original name of the system was the Corps of Engineers Financial Management System (CEFMS). After it was determined that CEFMS could be modified to satisfy Army customers and had the potential for supporting the Defense Working Capital Fund, DFAS selected CEFMS to meet the DJAS requirements.

³⁸ U.S. Department of Defense, Office of the Inspector General, *Acquisition of the Defense Joint Accounting System*, Report No. D-2000-151 (Arlington, Va.: June 16, 2000).

Placing DJAS and JCALS in sustainment is a step in the right direction. However, execution of a comprehensive review of all modernization efforts by DOD before substantial money has been invested will reduce the risk of continuing the department's track record of business systems modernization efforts that cost more than anticipated, take longer than expected, and fail to deliver intended capabilities.

Further, in developing the fiscal year 2005 budget request, the DOD Comptroller denied DFAS's request for approximately \$32 million for the development of an accounting and budget execution system. The DOD Comptroller appropriately noted that there should not be investments in a new system before the domains define the requirements and the system is justified through the appropriate DOD approval process. The DOD Comptroller also denied DFAS's request for funding of the Disbursing Transformation Program, which was a proposed \$41 million initiative through fiscal year 2009. According to DFAS, the program was to be funded from resources that were budgeted for DSDS, which, as previously mentioned, was terminated in December 2003. The DOD Comptroller noted that the department should not pay for salaries, software development, and systems modernization for a disbursing system before disbursing functionality is defined according to the BEA. It was further stated that it is premature for DFAS to create a new disbursing system when it cannot explain any of the program's requirements in broad or detailed terms and numerous disbursing systems already exist.

It is encouraging to see the DOD Comptroller acting to eliminate budget requests by DFAS for systems that are not justified. However, DFAS, which is under the auspices of the DOD Comptroller, represents a very small percentage—slightly over 2 percent (\$103 million of \$4.8 billion)—of the total modernization funding. Given that the department lacks a comprehensive inventory of its business systems, it is unknown how many other modernization projects should be questioned. However, since the roles and responsibilities of the domain owners have not been clarified, they have not been empowered to make investment decisions similar to those of the DOD Comptroller. As we have previously recommended,³⁹ the department needs to assess its current systems and limit current investments to

³⁹ GAO-01-525.

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- deployment of systems that have already been fully tested and involve no additional development or acquisition cost;
 - stay-in-business maintenance needed to keep existing systems operational;
 - management controls needed to effectively invest in modernized systems; and
 - new systems or existing system changes that are congressionally directed or are relatively small, cost-effective, and low risk and can be delivered in a relatively short time frame.

As noted in our September 2003 report,⁴⁰ DOD had not yet defined and implemented an effective approach for selecting and controlling business system investments. Absent the rigors of these stringent criteria, DOD will continue to invest in systems that perpetuate its existing incompatible, duplicative, and overly costly systems environment that does not optimally support mission performance.

DOD Lacks Reasonable Assurance That It Is in Compliance with Statutory Investment Management Controls

DOD has not yet defined and implemented an effective investment management process to proactively identify and control system improvements exceeding \$1 million in obligations. DOD officials have acknowledged that the department does not have a systematic means to identify and determine which systems improvements should be submitted to the DOD Comptroller for review and, in essence, depend on system owners coming forward to the domain owners and requesting approval. DOD was unable to provide us comprehensive information on all systems improvements with obligations greater than \$1 million since passage of the act. However, based upon limited information provided by the military services for fiscal years 2003 and 2004, we found that modernizations with obligations totaling at least \$479 million were not submitted to the DOD Comptroller for any factual determination.

The act states that as a condition of making any obligation in excess of \$1 million for system improvements, the obligation be reviewed by the DOD Comptroller who must make a determination whether the request is

⁴⁰ [GAO-03-1018](#).

in accordance with criteria specified in the act. To comply with the legislative requirement, the DOD Comptroller issued a memorandum on March 7, 2003, to DOD's component organizations stating that the BMSI office—which is responsible for overseeing the development and implementation of the BEA—must review all system improvements with obligations in excess of \$1 million. In addition, the memorandum directs the DOD components, as an integral part of the review and approval process, to present information to DOD Comptroller officials and relevant domain owners that demonstrates that each investment (1) complies with the BEA and (2) is economically justified. To support that the investment is economically justified, information on the cost and benefit and return on investment, including the break-even point, must be provided.

DOD officials acknowledge that the department could utilize the IT budget to assist in the identification of systems that could be subject to the act's requirements. While we recognize that this is budgetary data, rather than the obligational data referred to in the act, this information could provide a starting point for the domains identifying potential projects that should be submitted to the DOD Comptroller. For example, we analyzed the DOD IT budget request for fiscal years 2003 through 2005 and identified over 200 systems in each year's budget, totaling over \$4 billion per year that could involve obligations of funds that exceed the \$1 million threshold. Table 3 presents our summary analysis by DOD component.

Table 3: DOD Budget Request for Business Systems Modernization That May Exceed the \$1 Million Threshold

Dollars in millions

Component	Fiscal year 2003		Fiscal year 2004		Fiscal year 2005	
	Amount	Number	Amount	Number	Amount	Number
Army	\$1,046	39	\$1,196	41	\$1,255	42
Navy	455	34	487	32	420	29
Air Force	808	30	927	31	1,060	33
DFAS	121	26	80	18	48	13
DISA	912	14	793	20	329	17
DLA	315	18	234	16	104	13
Transportation Command	89	16	80	18	105	18
TRICARE	227	6	244	10	300	11
Missile Defense Agency	15	5	17	6	19	6

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Dollars in millions

Component	Fiscal year 2003		Fiscal year 2004		Fiscal year 2005	
	Amount	Number	Amount	Number	Amount	Number
Defense Threat Reduction Agency	29	5	24	4	27	4
Washington Headquarters Services	55	2	61	3	33	3
Office of the Secretary of Defense	113	2	104	3	185	3
Joint Chiefs of Staff	28	3	22	2	20	2
Defense Commissary Agency	12	2	39	2	77	2
Defense Human Resources Activity	14	1	14	1	15	1
Defense Contract Management Agency	18	1	12	1	11	1
Defense Security Service	17	1	10	1	11	2
Defense Contract Audit Agency	11	1	10	1	7	1
American Forces Information Services	7	1	5	1	6	1
Special Operations Command	8	1	3	1	1	1
DOD IG	2	1	2	1	2	1
Total	\$4,302	209	\$4,364	213	\$4,035	204

Source: GAO analysis based on DOD's fiscal years 2003 through 2005 IT budget requests.

The list in table 3 may not be complete. According to the DOD CIO and military service officials, the "All Other" category in the IT budget exhibits includes system projects that do not have to be identified by name because they fall below the \$2 million reporting threshold for budgetary purposes.

In an attempt to substantiate that the obligations for business systems modernization were in accordance with the act, we requested that DOD activities provide us with a list of obligations greater than \$1 million for fiscal year 2003⁴¹ and fiscal year 2004, as of December 2003. As of February 2004, we received responses from the Army, the Navy, and the Air Force, but did not receive responses from any of the defense agencies such as

⁴¹ We requested the obligational data for fiscal year 2003 for the period December 2, 2002, the date of enactment of the act, through September 2003.

DFAS and DLA. To ascertain if the DOD Comptroller had made the determination required in the act, we compared a list of system approvals provided by the BMSI office with the obligational data (by system) provided by the military services. Based upon a comparison of the limited information available, we identified \$479 million in reported obligations over \$1 million by the military services for system improvements that were not submitted to the DOD Comptroller for review and determination as required by the act. Table 4 summarizes our analysis.

Table 4: System Improvements Not Submitted to the DOD Comptroller for the Mandated Review

Dollars in millions			
Military service	Fiscal year 2003 obligations	Fiscal year 2004 obligations	Total
Army	\$172	\$30	\$202
Navy	\$166	\$47	\$213
Air Force	\$58	\$6	\$64
Total	\$396	\$83	\$479

Source: GAO analysis based upon information provided by DOD.

Examples of DOD system improvements included in table 4 that were not submitted include the Air Force obligating over \$9 million in fiscal year 2003 and about \$4 million in fiscal year 2004 for the Integrated Maintenance Data System, the Navy obligating about \$18 million in fiscal year 2003 and about \$6 million in fiscal year 2004 for the Electronic Military Personnel Records System, and the Army obligating about \$22 million in fiscal year 2003 and about \$10 million in fiscal year 2004 for the Transportation Coordinators' Automated Information for Movements System. Appendix III provides a list of modernization projects with obligations totaling over \$1 million that were reviewed by the DOD Comptroller as required by the act. Appendix IV provides a detailed list of the individual systems not submitted to the DOD Comptroller and the related amount of the total obligations for fiscal years 2003 and 2004.

The act places limitations on the legal authority of individual program and government contracting officials to obligate funds in support of the systems for which they are responsible, but DOD has yet to proactively manage investments to avoid violations of the limitations and to review investments in any meaningful way to enforce these statutory limitations.

Until DOD strengthens its process for selecting and controlling business system investments and adopts an effective governance concept, it remains exposed to the risk of spending billions of dollars on duplicative, stovepiped, nonintegrated systems that do not optimize mission performance and accountability and, therefore, do not support the department's transformation goals.

We also identified inconsistencies in how the military services categorized systems. For example, the Air Force did not categorize its Global Combat Support System as a business system, while the Army and the Navy consider their respective Global Combat Support Systems business systems. Additionally, the Navy categorized the Defense Message System as a business system, but the Army and the Air Force did not. This inconsistency further reiterates the need for a standard database and uniform definition of a business system that properly categorizes DOD's numerous systems.

For those systems that were submitted for review, we found that most had the supporting documentation called for in the DOD Comptroller's March 7, 2003, memorandum. For example, the return on investment was identified. However, the one common element lacking was the assertion that the system projects were compliant with the BEA or otherwise met the criteria set out in the act. As noted earlier, BMMP has developed a draft BEA system compliance assessment certification for program managers to use; however, the process has not been finalized. The inability to assert compliance with the BEA is consistent with our September 2003 report,⁴² which noted that the BEA lacked the details needed to provide DOD with a common vision and constrain or control investments. We also identified instances in which the justification for the approval was questionable. These investments were made without DOD knowing whether these systems are aligned or consistent with part of DOD's long-term system modernization strategies. For example:

⁴² [GAO-03-1018](#).

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- In October 2003, the DOD Comptroller approved obligations of \$8 million for the Standard Procurement System (SPS) even though the supporting documentation noted that there was insufficient documentation to validate all requirements and some were found to be noncompliant with the BEA. We⁴³ and the DOD IG⁴⁴ have previously reported concerns with the overall management and implementation of SPS and the ability to deliver its intended capability. Initiated almost 10 years ago in November 1994, the system was to provide DOD with a single automated system to perform all functions related to contract management within DOD's procurement process for all DOD organizations and activities. The system was also intended to replace the contract administration functions currently performed by MOCAS, a system implemented in 1968 and still operating today. Further, as will be discussed later in this report, difficulty with the implementation of SPS is one of the factors that contributed to the slippage in DLA's BSM implementation schedule.
 - In May 2003, the DOD Comptroller approved funding of about \$4 million for the Army's Integrated Facilities System (IFS). Initially, the Director of the BMSI office denied the funding request in part because it was noted that the system would be replaced by an enterprise solution. In response, the installations and environment domain noted that a final system solution had not been determined and stated that if IFS was found to be compliant with the "yet to be determined revised business process," it could be designated the enterprisewide solution. The response also noted that IFS "might prove to have the best functionality and technical capabilities for a DOD real property inventory solution." However, until the department's BEA becomes more robust, it remains unclear if this system will be part of the ultimate system solution. Until that decision is made, it is unknown what benefit will be derived from further investment in this system.

⁴³ U.S. General Accounting Office, *DOD Systems Modernization: Continued Investment in the Standard Procurement System Has Not Been Justified*, GAO-01-682 (Washington, D.C.: July 31, 2001), and *DOD's Standard Procurement System: Continued Investment Has Yet to Be Justified*, GAO-02-392T (Washington, D.C.: Feb. 7, 2002).

⁴⁴ U.S. Department of Defense Office of the Inspector General, *Information Technology: Allegations Regarding the DoD Education Activity's Use of the Standard Procurement System*, D-2003-26 (Arlington, Va.: Nov. 25, 2002).

We also identified some instances in which the DOD Comptroller's approval depended on specific actions being taken by a given date. However, prior to December 2003, the BMSI office did not have a process in place to track and follow up on required actions and did not have reasonable assurance that the required actions were taken. For example:

- In April 2003, the DOD Comptroller approved the expenditure of about \$53 million for the convergence of four separate Navy enterprise resources planning solutions into one initiative. This approval was subsequent to an approval in February 2003 of about \$21 million for the continuance of two of the four Navy efforts. The approval memorandum outlined three specific actions that needed to be taken and established time frames for the completion of each action. As of February 2004, BMSI officials were not able to attest to whether these actions had been completed. However, the Navy continues to move forward with this effort.
- The DOD Comptroller approved a pilot project for the National Security Agency on March 7, 2003, for \$13.4 million. The approval depended on the completion of an overall planning document that outlined the various areas that were to be addressed. This document was to be completed by March 16, 2003. As of February 2004, BMSI officials stated that only minimal supporting documentation had been provided.

Thus, even for the systems modernization efforts approved by the DOD Comptroller, serious questions remain as to whether these investments are justified.

BSM and LMP May Have Difficulty Achieving Cost, Schedule, and Operational Goals

BSM and LMP were initiated in November 1999 and February 1998, respectively, prior to DOD undertaking the BEA and establishing the domains. As such, they are not directed toward a corporate solution to resolving the department's long-standing weaknesses in the inventory and logistics management areas, such as total asset visibility or an integrated systems environment. Both projects are more focused on DLA's and the Army's respective inventory and logistics management operations. If effectively implemented, BSM and LMP are expected to provide benefits associated with private industry's logistics reengineering efforts, such as inventory reduction, improved cycle time, improved customer satisfaction, and increased response time. Additionally, BSM and LMP are intended to improve supply and demand forecast planning, maintenance workload planning, provide a single source of data, and improve data quality.

However, the initial deployment of BSM and LMP did not operate as intended and, therefore, did not meet DLA's and Army's component-level needs. In large part, these operational problems were due to DLA and the Army not effectively implementing the disciplined process that are necessary to manage the development and implementation of BSM and LMP in the areas of requirements management and testing. DLA and Army program officials have acknowledged that requirements and testing defects were factors contributing to these operational problems as well as schedule slippages and cost increases. Further, BSM and LMP have accumulated numerous lessons learned and have assembled teams to analyze these lessons and to develop an implementation strategy for corrective action. Additionally, to their credit, DLA and the Army have decided that future deployments of BSM and LMP will not go forward until they have reasonable assurance that the deployed systems will operate as expected for a given deployment.

BSM and LMP Are Not Corporate Solutions to Long-standing Operational Problems

Effectively managing and overseeing the department's \$19 billion investment in its business systems is key to the successful transformation of DOD's business operations. The transformation also depends on the ability of the department to develop and implement business systems that provide users and department management with accurate and timely information on the results of operations and that help resolve the numerous long-standing weaknesses. As DOD moves forward with continued development and implementation of its BEA, it needs to ensure that the department's business systems modernization projects are part of a corporate solution to preclude the continued proliferation of duplicative, stovepiped systems.

Three of the long-standing problems in logistics and inventory management have been related to total asset visibility, integrated systems, and valuation of inventory. We found that BSM and LMP will not resolve problems associated with total asset visibility and integrated systems and the first deployment of LMP did not provide for the valuation of inventory at the depot in accordance with federal accounting standards and departmental guidance. Details on each of these areas follow.

Total Asset Visibility

Although BSM and LMP are enterprise resource planning systems based on commercial software that incorporates best business practices for logistics supply chain management,⁴⁵ their planned capabilities do not provide a corporate solution for total asset visibility—a key gap in DOD’s capabilities to track and locate items across the department. A corporate solution for total asset visibility depends on the successful development and implementation of other systems. The time frame and costs associated with these other system projects have not been fully defined.

To illustrate the lack of asset visibility, in October 2002, a DLA official testified that BSM would provide improved control and accountability over the Joint Service Lightweight Integrated Suit Technology (JSLIST)—a chemical/biological suit. The official stated that the JSLIST suits would be included in BSM at the earliest practicable date, which was estimated to be December 2003. BSM, however, is not designed to provide the corporate total asset visibility necessary to locate and track the suits throughout DOD’s supply chain. While the suits are expected to be included in a future deployment of BSM, program officials have not yet specified a date when they will be included. Even when the suits are included, BSM is designed to provide visibility over the suits only within the DLA environment—something DLA has stated already exists within its current legacy system environment.

As we have previously reported,⁴⁶ the lack of integrated systems hinders DOD’s ability to know how many JSLIST it has on hand and where they are located once they leave the DLA warehouse. For example, we found that military units that receive JSLIST from DLA warehouses maintained inventory data in nonstandard, stovepiped systems that did not share data with DLA or other DOD systems. The methods used to control and maintain visibility over JSLIST at the units we visited ranged from stand-alone automated systems, to spreadsheet applications, to pen and paper. One military unit we visited did not have any inventory system for tracking JSLIST. BSM does not address asset visibility outside of DLA’s supply chain for the JSLIST, and thus cannot provide total asset visibility for this critical inventory item.

⁴⁵ An area of business operations that is concerned with the management of material planning, material acquisition/procurement, material logistics, and order fulfillment.

⁴⁶ [GAO-02-873T](#).

Having the ability to readily locate sensitive items, such as JSLIST, is critical, particularly if a defect is found and the items must be recalled. A case in point is the JSLIST predecessor, the Battle Dress Overgarment (BDO). Over 700,000 of these suits were found to be defective and were recalled. Since DOD's systems did not provide the capability to identify the exact location of each suit, a series of data calls were conducted, which proved to be ineffective. We reported in September 2001⁴⁷ that DOD was unable to locate approximately 250,000 of the defective suits and therefore was uncertain if the suits were still in the possession of the military forces, or whether they had been destroyed or sold. Subsequently, we found that DOD had sold many of these defective suits to the public as excess, including 379 that we purchased in an undercover operation.⁴⁸ In addition, DOD may have issued over 4,700 of the defective BDO suits to local law enforcement agencies. This is particularly significant because local law enforcement agencies are most likely to be the first responders to a terrorist attack, yet DOD failed to inform these agencies that using these suits could result in death or serious injury. BSM will not provide DOD with the capability to readily locate JSLIST for any reason, including the need to recall defective suits.

Similar to BSM, LMP will not provide the Army with total asset visibility until a suite of other systems has been developed and implemented. Specifically, Army officials have stated that LMP will require integration with other Army systems that are under development in order to achieve total asset visibility within the Army. These additional systems are the Product Lifecycle Management Plus (PLM+) and Global Combat Support System—Army (GCSS–A). According to the Army, PLM+ is to integrate LMP and GCSS–A to create a seamless end-to-end solution for Army logistics. According to information provided by the Army, PLM+ was initiated in December 2003. No estimates have been developed as to the cost of this project, nor has a time frame for development and implementation been established.

⁴⁷ U.S. General Accounting Office, *Chemical and Biological Defense: Improved Risk Assessment and Inventory Management Are Needed*, [GAO-01-667](#) (Washington, D.C.: Sept. 28, 2001).

⁴⁸ U.S. General Accounting Office, *DOD Excess Property: Risk Assessment Needed on Public Sales of Equipment That Could Be Used to Make Biological Agents*, [GAO-04-81TNI](#) (Washington, D.C.: Oct. 7, 2003).

The Army has stated that GCSS-A will provide visibility of supplies and equipment in storage and in transit. The Army began development of GCSS-A in fiscal year 1997 and since then has invested approximately \$316 million in this effort. In May 2003, the Army decided to pursue a COTS solution for GCSS-A rather than continue to develop the system in house. The Army recently stated that the total cost of GCSS-A cannot be accurately estimated until all of the “to be” business processes are identified, which is expected to occur in October 2004. However, the fiscal year 2004 capital investment report shows that the Army estimates that it will invest over \$1 billion in GCSS-A through fiscal year 2009.

To help provide for departmentwide total asset visibility, DLA is undertaking the implementation of the Integrated Data Environment (IDE) program. According to DLA, this initiative is intended to provide the capability for routing data from multiple systems within DLA and DOD into one system. According to DLA, the contract was signed in September 2003, and IDE is expected to reach full operational capability in August 2007. The current estimated cost of the effort is approximately \$30 million. However, the completion date of August 2007 depends on other departmental efforts being completed on time, for example, PLM+, for which a completion date has not been established.

Integrated Systems

One of the long-standing problems within DOD has been the lack of integrated systems. This is evident in the many duplicative, stovepiped systems among the 2,274 that DOD reported as its systems environment. Lacking integrated systems, DOD will have a difficult time obtaining accurate and reliable information on the results of its business operations and will continue to rely on either manual reentry of data into multiple systems, convoluted system interfaces, or both. These system interfaces provide data that are critical to day-to-day operations, such as obligations, disbursements, purchase orders, requisitions, and other procurement activities. For BSM and LMP, we found that the system interfaces were not fully tested in an end-to-end manner, and therefore DLA and Army did not have reasonable assurance that BSM and LMP would be capable of providing the intended functionality.

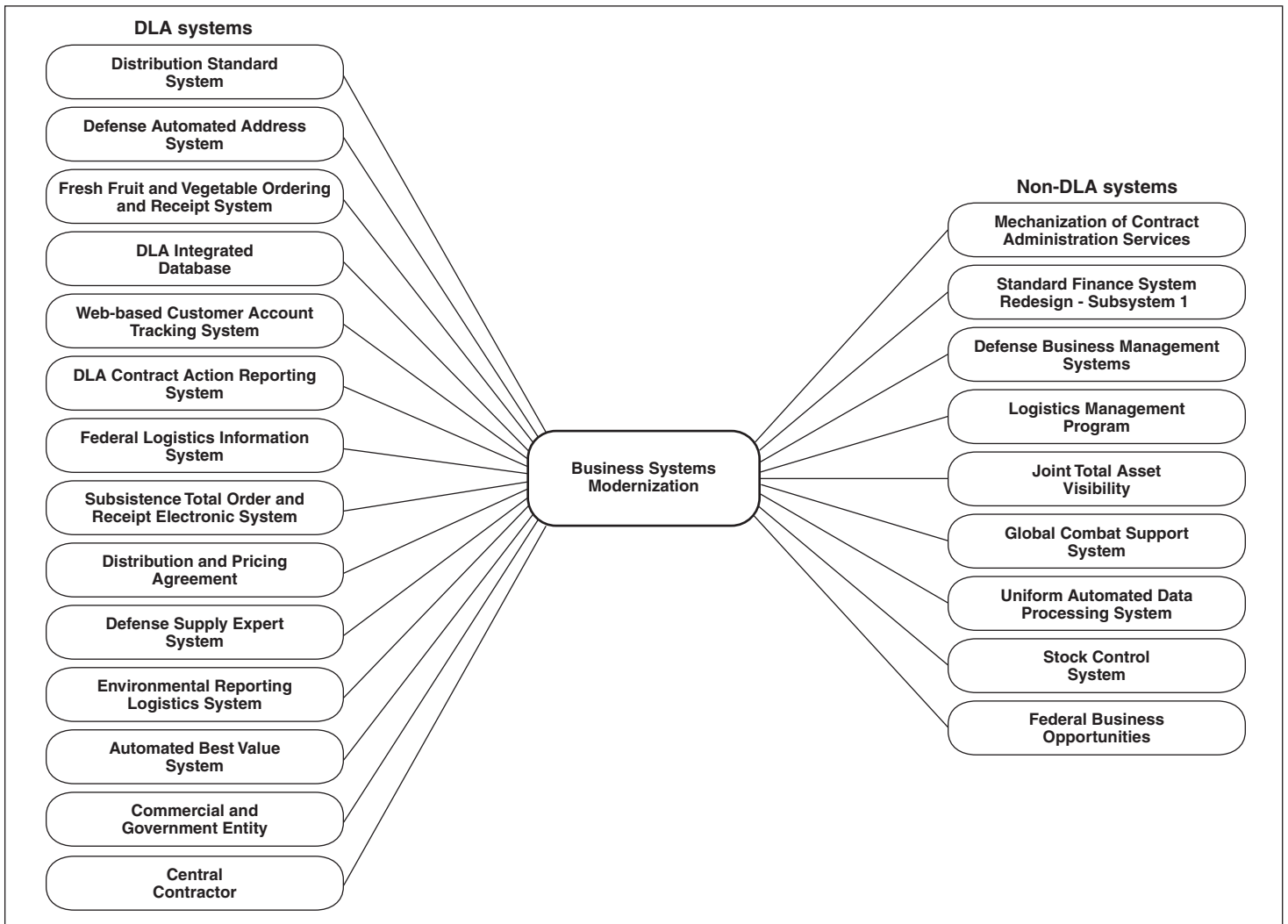
We previously reported⁴⁹ that Sears and Wal-Mart, recognized as leading-edge inventory management companies, had automated systems that electronically received and exchanged standard data throughout the entire

⁴⁹ [GAO-02-873T](#).

inventory management process, thereby reducing the need for manual data entry. As a result, information moves through the data systems with automated ordering of inventory from suppliers; receiving and shipping at distribution centers; and receiving, selling, and reordering at retail stores. Unlike DOD, which has a proliferation of nonintegrated systems using nonstandard data, Sears and Wal-Mart require all components and subsidiaries to operate within a standard systems framework that results in an integrated system and do not allow individual systems development.

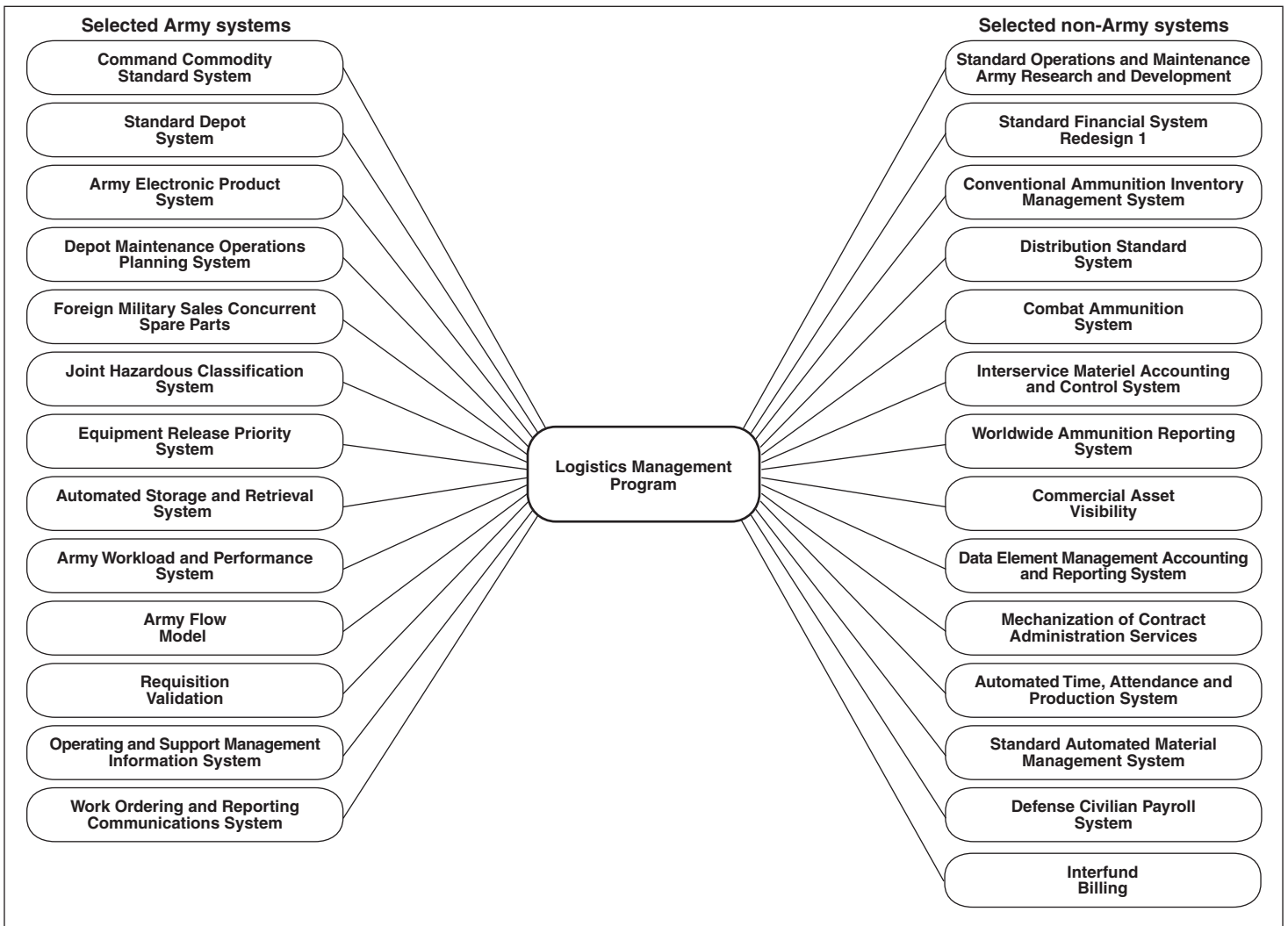
For the first deployment, DLA has had to develop interfaces that permit BSM to communicate with more than 23 systems, including 3 DFAS, 6 DOD-wide, and 14 DLA systems. The Army has had to develop 215 interfaces that permit LMP to communicate with more than 70 systems, including 13 DFAS, 6 DLA, 2 Navy, 5 Air Force, and over 24 Army systems. Figures 2 and 3 illustrate BSM's and LMP's numerous required system interfaces.

Figure 2: BSM Required System Interfaces



Source: GAO analysis based on data provided by DLA.

Figure 3: Examples of LMP Required System Interfaces



Source: GAO analysis based on data provided by the Army.

When BSM and LMP became operational, it became evident that the system interfaces were not working as intended. Such problems have led BSM, LMP, and organizations with which they interface—such as DFAS—to perform costly manual reentry of transactions, which can cause additional data integrity problems. For example:

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- BSM's functional capabilities were adversely affected because a significant number of interfaces were still in development or were being executed manually once the system became operational. Since the design of system interfaces had not been fully developed and tested, BSM experienced problems with receipts being rejected, customer orders being canceled, and vendors not being paid in a timely manner. At one point, DFAS suspended all vendor payments for about 2 months, thereby increasing the risk of untimely payments to contractors and violating the Prompt Payment Act.⁵⁰
 - In January 2004, the Army reported that due to an interface failure, LMP had been unable to communicate with the Work Ordering and Reporting Communications System (WORCS) since September 2003. WORCS is the means by which LMP communicates with customers on the status of items that have been sent to the depot for repair and initiates procurement actions for inventory items. The Army has acknowledged that the failure of WORCS has resulted in duplicative shipments and billings and inventory items being delivered to the wrong locations. Additionally, the LMP program office has stated that it has not yet identified the specific cause of the interface failure. The Army is currently entering the information manually, which as noted above, can cause additional data integrity errors.

While these numerous interfaces are necessary because of the existing stovepiped, nonintegrated systems environment, they should have been fully developed and tested prior to BSM and LMP being deployed. In moving forward with the future deployments of BSM and LMP, it is critical that program officials ensure that the numerous system interfaces are operating as intended. Additionally, until the business enterprise architecture is further developed and DOD has decided which systems will be part of the future business systems environment, there is uncertainty as to the number of these systems with which BSM and LMP will continue to interface.

Valuation of DOD Inventory

Federal accounting standards require inventories to be valued based on historical costs or a method that approximates historical costs. DOD's

⁵⁰ The Prompt Payment Act, 31 U.S.C. chapter 39, as implemented in 5 C.F.R. Part 1315 (2003), provides for agencies, among other things, to pay interest and penalties under various circumstances for late payments, generally when payments are not made within 30 days of the payment due date. 5 C.F.R. §§ 1315.4 and 1315.10-14 (2003).

inability to account for and control its huge investment in inventories effectively has been an area of major concern for many years. DOD's antiquated, duplicative systems do not capture the information needed to comply with federal accounting standards. BSM and LMP are to provide DOD the capability to comply with federal accounting standards in the valuation of its billions of dollars of inventory. DLA has stated that BSM has the capability to compute the value of inventory in accordance with federal accounting standards. Based upon information provided by DLA and our analysis, we found that the value of the inventory recorded in BSM changed each time new items were procured to reflect a moving average (historical) cost valuation of the inventory—which is an acceptable method permitted by federal accounting standards and is in accordance with DOD's stated policy.

However, the first deployment of LMP did not have the capability to value all inventory in accordance with federal accounting standards. In its evaluation of LMP, the Army Audit Agency found that it had the capability to compute the value of inventory in accordance with federal accounting standards at the command level—CECOM—but not at the depot level. The Army decided to proceed with deployment of LMP, recognizing that the issue would have to be resolved prior to further deployments to the other depots. The Office of the DOD Comptroller has also directed that there is to be no further deployment of LMP until the inventory valuation problem has been fixed.

Significant Problems Appeared Once BSM and LMP Became Operational

BSM and LMP experienced significant problems once they became operational at the first deployment sites. Although BSM and LMP were not designed to provide a corporate enterprise solution for inventory and logistics management, the first deployment did not address DLA's and Army's component-level operational needs as intended. These problems have resulted in schedule slippages and cost increases. Detecting such problems after the system is placed into operation leads to costly rework due to factors such as (1) fixing the defect, (2) entering transactions manually, and (3) adjusting reports manually. Furthermore, the manual processes required to enter the transactions and adjust related reports may introduce data integrity errors. Our analysis indicated that many of the operational problems experienced by DLA and the Army can be attributed to their inability to effectively implement the disciplined requirements management and testing processes, as discussed in this report. In fact, DLA and Army program officials acknowledged that requirements and testing defects were factors contributing to the operational problems and stated that they are working to develop more effective processes. DLA and

the Army recognized that serious operational problems exist and have decided that future deployments will not go forward until they have assurance that the deployed system operates as expected for a given deployment. Operational problems include the following:

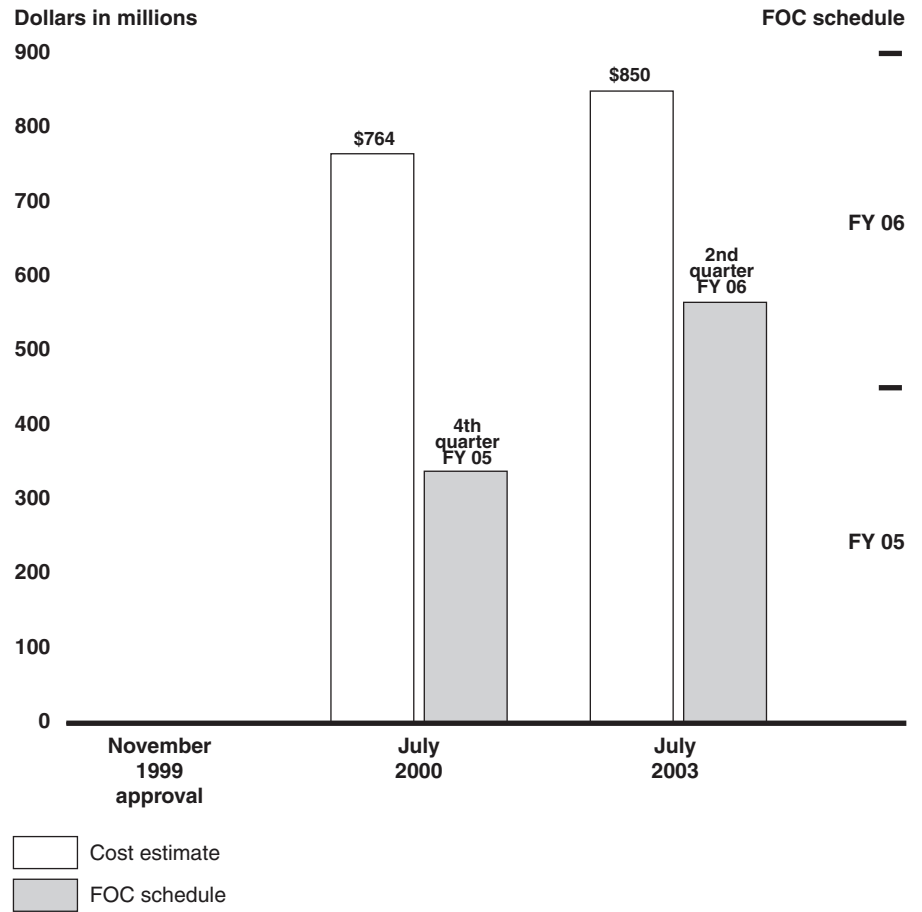
- Army and DFAS officials reported that LMP's operational difficulties at CECOM and Tobyhanna Army Depot have resulted in inaccurate financial management information. More specifically, the depot is not (1) producing accurate workload planning information; (2) generating accurate customer bills; and (3) capturing all repair costs, which is impeding the Army's ability to calculate accurate future repair prices. These problems can also hinder the Army's ability to accurately report the results of its depot operations and limits customers' ability to develop accurate budget estimates.
- LMP users experienced difficulty in providing contract information to MOCAS.⁵¹ Due to the operational problems, DFAS was unable to electronically process contract modifications and contract payment terms and make disbursements to contractors, thereby increasing the risk of not making timely payments to contractors and violating the Prompt Payment Act.
- BSM experienced significant data conversion problems associated with purchase requisitions and purchase orders that were created in SAMMS. Moving the data from SAMMS to BSM proved difficult because BSM required more detailed information, which was not identified during the requirements phase. This additional information needed to be manually entered into BSM, resulting in numerous errors that caused vendors not to be recognized and shipments from the depot to be rejected. As a result of these problems, additional tables, such as vendor master files, were created within BSM to process orders for the converted purchase requisitions and purchase orders.
- BSM users experienced a number of problems, such as incorrect information on customer orders, customer orders never being sent, and vendor invoices not being paid in a timely manner.

⁵¹ MOCAS maintains contractual information and processes contractor invoices and payments and provides its users with information relative to shipments, material receipts, and funds availability.

These operational problems have been at least partially responsible for schedule slippages and cost increases for both systems. In the case of BSM, it was originally scheduled to achieve full operational capability (FOC)⁵² in September 2005. However, BSM is now expected to reach FOC during the second quarter of fiscal year 2006. Further, BSM's estimated cost has increased by approximately \$86 million since the program was initiated in November 1999. Figure 4 shows the schedule slippages and cost increases.

⁵² The FOC date represents the date that a system will be operating at all intended locations.

Figure 4: BSM Schedule Slippages and Cost Increases



Source: GAO analysis based on data provided by DLA.

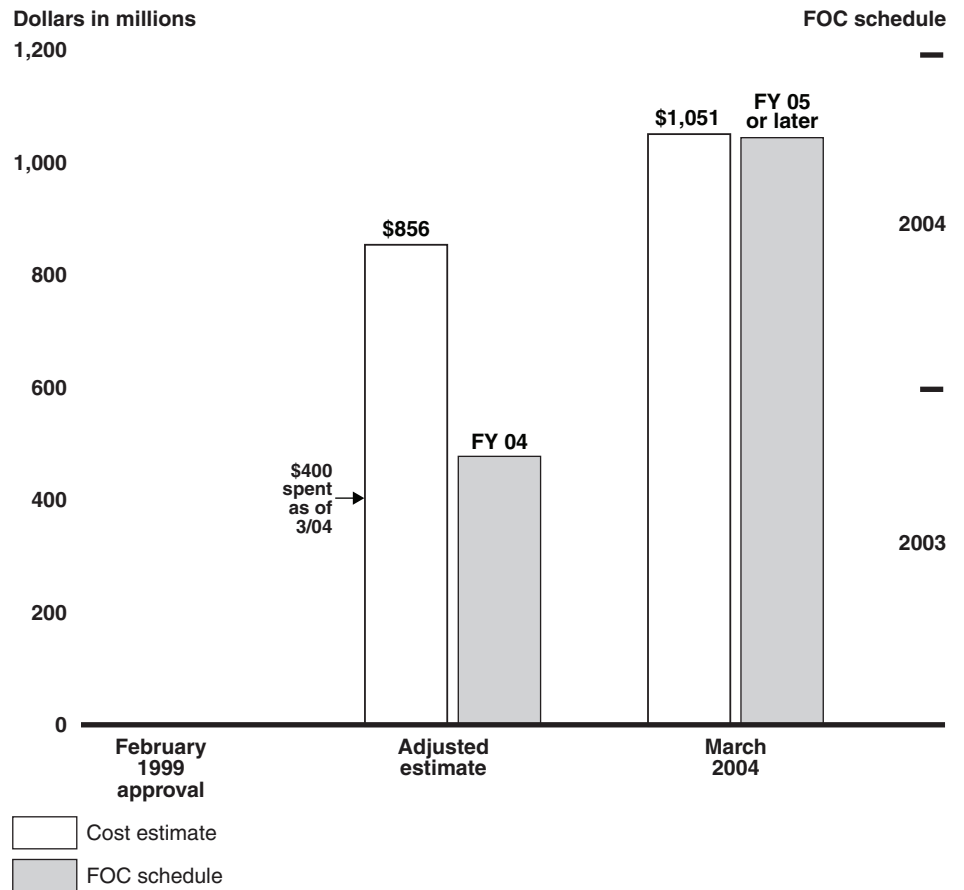
Part of the schedule slippage and cost increase can be attributed to problems encountered with DLA's effort to implement SPS, which was to provide BSM with the required procurement functionality. Since a large part of DLA's overall business is the procurement of inventory items, difficulties in establishing a viable system solution for this critical aspect of its business seriously impaired DLA's ability to meet BSM's schedule and cost goals. We have previously reported that DOD's ineffective management approach for SPS put the project at risk.⁵³

During the initial implementation of BSM, program officials found that SPS did not have the capability to handle DLA's large volume of procurement requisitions. According to BSM program officials, DLA will spend about \$9 million to resolve the shortcoming in SPS. Since SPS will not meet its needs when BSM is fully operational at all sites, DLA has negotiated with the BSM software developer to purchase new procurement software as the long-term solution. DLA estimated that this software would cost approximately \$30 million, which contributed to the increased BSM program costs.

Similar to BSM, LMP has also experienced schedule slippages and cost increases since the project was approved in February 1998. Figure 5 shows the schedule slippages and cost increases.

⁵³ [GAO-01-682](#) and [GAO-02-392T](#).

Figure 5: LMP Schedule Slippages and Cost Increases



Source: GAO analysis based on data provided by the Army.

As shown in figure 5, as of March 2004, the current estimated cost of LMP is over \$1 billion, with more than \$400 million spent to fund the project during the past 5 years. In October 1999, we reported⁵⁴ that the Army's estimated cost of LMP over the 10-year period of the contract was approximately \$421 million. However, as discussed in that report, the \$421 million estimate did not include an additional \$30.5 million per contract year that would be needed for data processing. The amount

⁵⁴ U.S. General Accounting Office, *DOD Competitive Sourcing: Plan Needed to Mitigate Risks in Army Logistics Modernization Program*, GAO/NSIAD-00-19 (Washington, D.C.: Oct. 4, 1999).

allowed for data processing in the original estimate was based directly on the percentage of data processing performed by the contractor, with the Defense Information Systems Agency performing the residual processing. Further, the original estimate was based on a 10-year contract and the current estimate is based on a 12-year contract, and each additional contract year can be as much as \$65 million. Considering these two factors, a more accurate cost estimate in 1999 would have been approximately \$856 million.

In our discussions with LMP program officials, additional factors were identified that have caused the cost of LMP to increase to over \$1 billion. For example, since the initiation of LMP, the Army has directed that the program be (1) integrated with the Army Single Stock Fund effort and (2) extended to the Army depot maintenance operations. These additional capabilities were not part of the standard LMP software package and were not envisioned to be part of LMP when the original cost estimate was developed. Therefore, additional development and implementation costs were incurred and increased the overall cost of the program by over \$91 million. Further, the LMP program manager acknowledged that the 1999 estimate did not include adequate DOD program management costs. The additional program management costs are estimated to be about \$104 million and include such items as personnel and travel.

Additionally, as shown in figure 5, the original FOC date was scheduled for fiscal year 2004. However, because of the operational problems that were identified with the first deployment, the Army is in the process of developing a new deployment schedule, and as of March 2004, no future deployment dates had been established.

Project Management of BSM and LMP Did Not Follow Disciplined Processes

The problems we identified in the areas of schedule, cost, and performance of the two systems can be linked, at least in part, to DLA's and the Army's failure to follow disciplined processes in the key areas of requirements management and testing. While there may have been contributing factors in other areas of the system acquisition efforts, we selected these two areas because our assessments, as well as others, have shown that agencies do not invest adequately for success in these areas, which form the foundation for success or failure. Lacking such disciplined processes exposes these projects to the unnecessary risk that costly rework will be required, which in turn, will continue to adversely affect these projects' cost, schedule, and performance goals. Our analysis of selected BSM and LMP key requirements⁵⁵ and testing processes found that (1) the functionality to be delivered was not adequately described or stated to allow for quantitative evaluation; (2) the traceability among the various process documents (e.g., operational requirements documents, functional or process scenarios, and test cases) was not maintained; and (3) system testing was ineffective. Because of the weaknesses in these key processes, program officials do not have reasonable assurance that (1) the level of functionality that will be provided by a given deployment is understood by the project team and users and (2) the resulting system will provide the expected functionality. We have previously reported⁵⁶ concerns with BSM's lack of a documented requirements development and management plan. Such a plan provides a road map for completing important requirements development and management activities. Without it, projects risk either not performing important tasks or not performing them effectively. Historically, projects that experience the types of requirements and testing process weaknesses found in BSM and LMP have a high probability of not meeting schedule, cost, and performance objectives.

⁵⁵ BSM and LMP have identified and documented 202 and 293 system requirements, respectively. For BSM, we reviewed 13 requirements related to finance, order fulfillment, planning, and procurement. For LMP, we reviewed 12 requirements related to planning and budget development, asset management, inventory management, and perform maintenance analysis and planning.

⁵⁶ U.S. General Accounting Office, *Information Technology: Inconsistent Software Acquisition Processes at the Defense Logistics Agency*, GAO-02-9 (Washington, D.C.: Jan. 10, 2002).

Disciplined Processes Are Key to Successful System Development and Implementation

Disciplined processes have been shown to reduce the risks associated with software development and acquisition efforts to acceptable levels and are fundamental to successful systems acquisition. Said another way, a disciplined software development and acquisition process can maximize the likelihood of achieving the intended results (performance) within established resources (costs) on schedule. Although a “standard cookbook” of practices that will guarantee success does not exist, several organizations, such as the Software Engineering Institute⁵⁷ and the Institute of Electrical and Electronics Engineers (IEEE),⁵⁸ and individual experts have identified and developed the types of policies, procedures, and practices that have been demonstrated to reduce development time and enhance effectiveness. Key to having a disciplined system development effort is to have disciplined processes in multiple areas, including project planning and management, requirements management, configuration management, risk management, quality assurance, and testing. Effective processes should be implemented in each of these areas throughout the project’s life cycle since constant changes occur. In reviewing BSM and LMP, we focused on requirements management and testing.

Requirements represent the blueprint that system developers and program managers use to design, develop, and acquire a system. Requirements should be consistent with one another, verifiable, and directly traceable⁵⁹ to higher-level business or functional requirements. It is critical that requirements be carefully defined and that they flow directly from the organization’s concept of operations (how the organization’s day-to-day

⁵⁷ SEI is a federally funded research and development center operated by Carnegie Mellon University and sponsored by DOD. The SEI objective is to provide leadership in software engineering and in the transition of new software engineering technology into practice.

⁵⁸ IEEE develops standards for a broad range of global industries, including the IT and information assurance industries.

⁵⁹ Traceability allows the user to follow the life of the requirement both forward and backward through these documents and from origin through implementation. Traceability is also critical to understanding the parentage, interconnections, and dependencies among the individual requirements. This information in turn is critical to understanding the impact when a requirement is changed or deleted.

operations are or will be carried out to meet mission needs).⁶⁰ Improperly defined or incomplete requirements have been commonly identified as a cause of system failure and systems that do not meet their costs, schedules, or performance goals. Without adequately defined requirements that have been properly reviewed and tested, significant risk exists that the system will need extensive and costly changes before it will achieve its intended capability.

According to IEEE—a leader in defining the best practices for such efforts—good requirements have several characteristics, including the following:⁶¹

- The requirements fully describe the software functionality to be delivered. Functionality is a defined objective or characteristic action of a system or component. For example, for inventory, key functionality as previously discussed includes total asset visibility and valuation in accordance with federal accounting standards.
- The requirements are stated in clear terms that allow for quantitative evaluation. Specifically, all readers of a requirement should arrive at a single, consistent interpretation of it.
- Traceability among various requirement documents is maintained. Requirements for projects can be expressed at various levels depending on user needs. They range from agencywide business requirements to increasingly detailed functional requirements that eventually permit the software project managers and other technicians to design and build the required functionality in the new system. Adequate traceability ensures that a requirement in one document is consistent with and linked to applicable requirements in another document.

Industry best practices, as well as DLA's and Army's own system planning documents, indicate that detailed system requirements should be

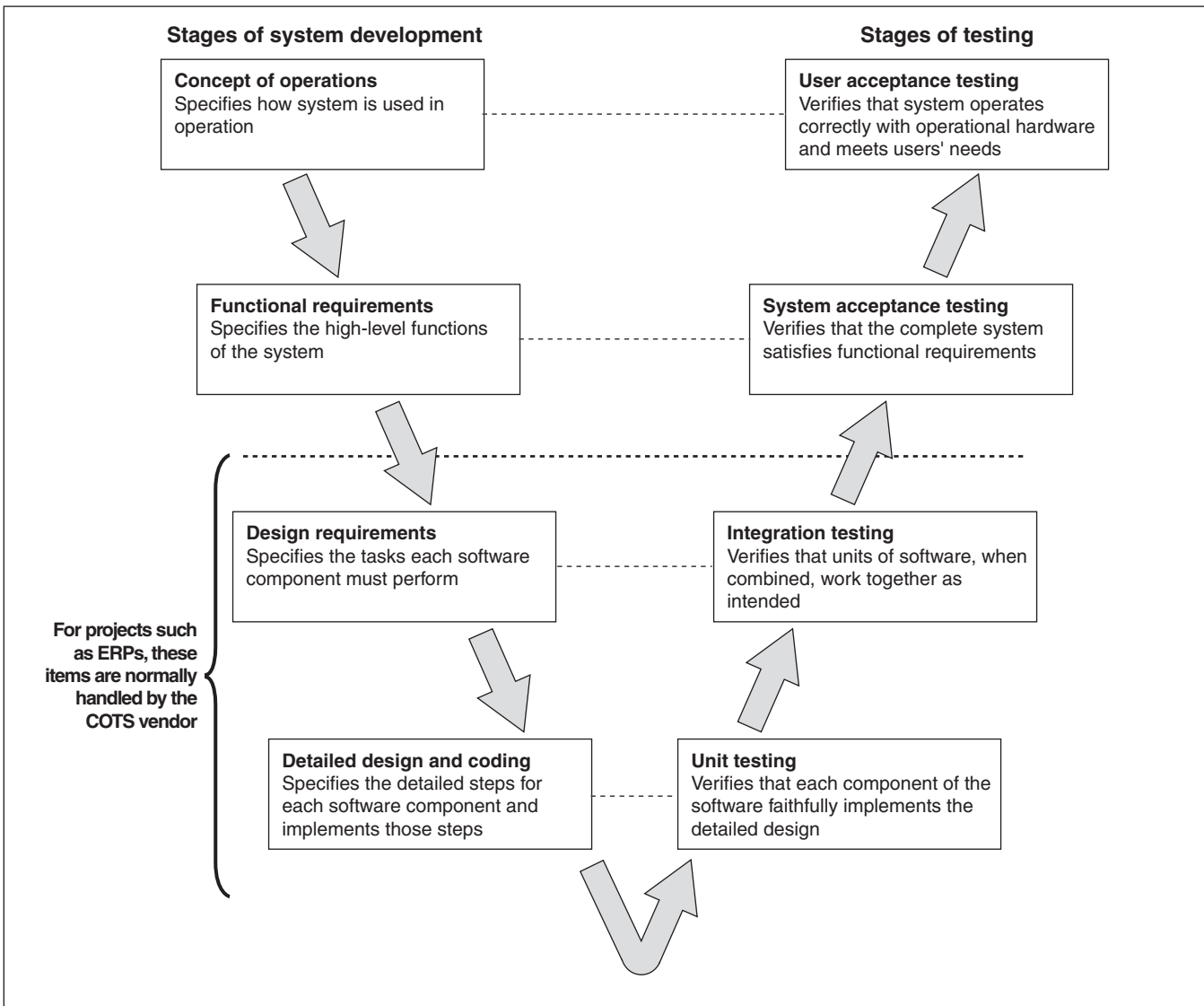
⁶⁰ According to IEEE Standard 1362-1998, a concept of operations document is normally one of the first documents produced during a disciplined development effort since it describes system characteristics for a proposed system from the user's viewpoint. This is important since a good concept of operations document can be used to communicate overall quantitative and qualitative system characteristics to the user, developer, and other organizational elements. This allows the reader to understand the user organizations, missions, and organizational objectives from an integrated systems point of view.

⁶¹ IEEE 830-1998.

documented to serve as the basis for effective system testing. Both projects documented their high-level or operational requirements and had designed hierarchical processes for documenting the various requirements and related documents needed to build and design tests at the transaction level as well as tests of chains of transactions that flow together to support multiple business functions and processes.

Because requirements provide the foundation for system testing, specificity and traceability defects in system requirements preclude an entity from implementing a disciplined testing process. That is, requirements must be complete, clear, and well documented to design and implement an effective testing program. Absent this, an organization is taking a significant risk that its testing efforts will not detect significant defects until after the system is placed into production. Industry experience indicates that the sooner a defect is recognized and corrected, the cheaper it is to fix. As shown in figure 6, there is a direct relationship between requirements and testing.

Figure 6: Relationship between Requirements Development and Testing



Source: GAO.

Although the actual testing activities occur late in the development cycle, test planning can help disciplined activities reduce requirements-related defects. For example, developing conceptual test cases based on the requirements derived from the concept of operations and functional requirements stages can identify errors, omissions, and ambiguities long

before any code is written or a system is configured. Disciplined organizations also recognize that planning testing activities in coordination with the requirements development process has major benefits.

BSM and LMP Functionality to Be Delivered Was Not Adequately Described

Our analysis and evaluation of DLA's and the Army's requirements management and testing processes found that BSM and LMP program officials did not effectively implement the disciplined processes associated with requirements management and testing in developing and implementing their systems. We identified numerous instances in which each documented requirement used to design and test the system did not build upon the next in moving through the hierarchy. Specifically, the requirements (1) lacked the specific information necessary to understand the required functionality that was to be provided and (2) did not describe how to determine quantitatively, through testing or other analysis, whether the systems would meet DLA's and Army's respective needs. One reason that users have not been provided with the intended systems capabilities is because of the breakdown in the requirements management process. As a consequence, DLA and the Army have been forced to implement error-prone, time-consuming manual workarounds as a means to minimize disruption to critical operations. DLA and Army officials acknowledged that improvements in their requirements management processes are needed and have stated that they are working to develop more specific requirements that better describe required system functionality and support more effective system testing.

DLA's basic hierarchical approach to developing BSM requirements was to (1) define high-level requirements, commonly referred to as operational requirements; (2) define more specific blueprint requirements; (3) develop functional scenarios; (4) define functional designs; (5) define technical designs; (6) create test cases; and (7) define test conditions. Similarly, the Army's basic approach to developing LMP system requirements was to (1) develop a blueprint of its business processes following the Integration Definition for Function modeling standards established by the National Institute of Standards and Technology⁶² and IEEE, (2) define high-level requirements, (3) develop process scenarios, (4) develop test cases, and (5) use subject matter experts⁶³ to determine whether the application met the business processes envisioned by the users and as developed by a contractor to provide the functionality currently provided by the Army's existing systems. If effectively implemented, either methodology can be used to develop and implement a system. The key is that each step of the process builds upon the previous one. Accordingly, unidentified defects in one step migrate to the subsequent steps where they are more costly to fix and increase the risk that the project will experience adverse impacts on its schedule, cost, and performance objectives. The following are examples of the BSM and LMP requirements that we reviewed that lacked the specificity necessary to describe the functionality to be delivered.

- One BSM requirement stated that the system should be able to reconcile inventory between the depots (where inventory items are located) and the inventory control point⁶⁴ and that the reconciliation should be performed daily. It also stated that the inventory control point must request that the depot perform a physical count once inventory differences have met certain criteria, such as dollar value or large quantities. However, the various requirement documents did not (1) define what is meant by "large" or (2) specify how the notification of

⁶² Federal Information Processing Standard Publication 183.

⁶³ Using subject matter experts depends on them being available throughout the process and on whether the experts remember the undocumented requirements completely and consistently. Specifically, an individual assigned to develop a test case is relied on to understand the detailed requirements associated with all facets of that test case and then to ensure that the test will provide the information needed to understand whether the functionality was actually provided.

⁶⁴ An inventory control point is an organizational unit or activity within a DOD supply system assigned a primary responsibility for materiel management of a group of items either for a particular service or for DOD as a whole.

the requirement to conduct the inventory was to be accomplished, for example, by e-mail. Without such specificity, it is unclear how this requirement could be tested since an evaluator would not be able to design a test of the trigger for a physical count because the quantity difference had not been defined.

- For LMP, the operational activity “Manage Assets” did not adequately describe how to maintain visibility over all assets. Specifically, the requirement states that the system “maintains wholesale and retail asset balances and provides visibility of On-Hand Asset Balances by identifying assets being repaired, modified, or tested at depots, contractor and intermediate level repair facilities as well as those on-hand at storage sites, retail activities and other services.” However, there is no further information that specifies how asset visibility is maintained or the sources that are to be used in accumulating these data. Therefore, the risk is increased that the Army will not be able to maintain asset visibility over all Army-managed assets. In fact, in January 2004, the Army reported that it was having difficulty obtaining accurate data related to material movement (in-transit), assets received, and assets issued or shipped.

Requirements Traceability Was Not Maintained

In reviewing the process documents that DLA and Army used to define their requirements, that is, operational requirement, functional scenario, functional design, technical design, and test case, we found that the forward and backward traceability defined by IEEE, and as described by BSM’s and LMP’s hierarchical approaches and management plan, was not always maintained. Traceability allows the user to follow the life of the requirement both forward and backward through these documents and from origin through implementation. Traceability is also critical to understanding the parentage, interconnections, and dependencies among the individual requirements. This information, in turn, is critical to understanding the impact when a requirement is changed or deleted. Without an effective traceability approach, it is very difficult to perform actions such as (1) accurately determining the impact of changes and making value-based decisions when considering requirement changes, (2) maintaining the system once it goes into production, (3) tracking the project's progress, and (4) understanding the impact of a defect discovered during testing. For almost all of the requirements we analyzed, we found that traceability was not maintained. For example:

- An operational requirement stated that BSM maintain the effective date for pricing information. The subsequent requirements document stated

that all amendments/modifications to the award instrument—purchase orders and requisitions—should be documented on the prescribed General Services Administration form. In our analysis, we were only able to trace portions of the requirements through BSM’s hierarchical process. Since traceability was not maintained through the key documents, it was unclear why the testing documents included requirements that were not included in the functional scenarios, technical design, or test conditions, since these documents should have provided the detailed information necessary to test the requirements. Further, since traceability is lacking, it is uncertain how DLA will ensure that BSM will meet this requirement.

- One capability of LMP is to support workload planning for the Army’s depot maintenance facilities. Data related to scheduled and historical depot maintenance activities that should be considered in developing budget requirements, such as assets due in for repair or maintenance, price data, assets in stock, and maintenance schedules, were included in the requirement. However, we found that only the prior month’s sales data were used in designing the test case—not the information specified in the requirement. As a result, the risk is increased that LMP is determining workload-planning requirements for the Army’s depot maintenance facilities using incorrect data. This resulted in the Army reporting in January 2004 that Tobyhanna Army Depot was unable to develop its working capital fund budget submissions for its operations and that it will have to perform complex manual calculations to satisfy its budgetary planning requirements.

System Testing Was Not Effective

BSM and LMP did not implement disciplined testing activities. Not carrying out this recognized best practice materially increases the risk that defects would not be detected until the systems were placed into production and that costly rework will be needed to satisfy end-user requirements, including materiel readiness in support of military operations. Testing is the process of executing a program with the intent of finding errors.⁶⁵ Furthermore, if a requirement has not been adequately defined, it is unlikely that a test will discover a defect. System testing is a critical process utilized by disciplined organizations and improves an entity’s confidence that the system will satisfy the requirements of the end

⁶⁵ U.S. General Accounting Office, *Indian Trust Fund: Challenges Facing Interior’s Implementation of New Trust Asset and Accounting Management System*, GAO/T-AIMD-99-238 (Washington, D.C.: July 14, 1999).

user and will operate as intended. Since requirements provide the foundation for system testing, requirement defects discussed earlier, such as the lack of specificity, significantly impaired and will continue to impair the ability of DLA and the Army to detect defects during system testing. As a result of requirement defects and ineffective testing, DLA and the Army testing activities did not achieve the important goal of reducing the risk that BSM and LMP would not operate as intended. For example:

- One BSM requirement involved preparing customer payments. The system, according to the test case, was required to (1) prepare a summary bill and (2) present the sales summary report in federal supply class sequence. The actual result for one test stated that the system passed this test even though only one item was used to generate the summary bill. It was unclear from this test case whether the system (1) could summarize multiple items and (2) had any limitations on the number of items that could be summarized. Furthermore, the test that evaluated the sorting of items by federal supply class divided the cost of the sales summary report by two. If this result matched the expected result, BSM passed the test. However, documentation was not available to explain why the item cost needed to be divided by two. Based on our review of the test cases linked to this requirement, we could not validate that the requirement had been adequately tested. Therefore, DLA does not have reasonable assurance that BSM can perform this required functionality.
- Based on our analysis of LMP's December 2003 and January 2004 project status reports, we found that the Army continued to experience problems with the accuracy of data related to budgeting; workload planning and forecasting and depot maintenance operations; and accounting records such as customer orders, purchase orders and requisitions, obligations, and disbursements. DFAS and Army officials acknowledged that these problems were attributable to relying on subject matter experts to develop tests for their respective functional areas, such as budgeting, accounting, and workload planning, and not performing testing end to end across the various functional areas. Rather, the testing was stovepiped in that subject matter experts performed tests for their own respective areas.

Accuracy of Financial Reporting May Not Be Improved by BSM and LMP

As a result of the specific problems discussed in this report related to BSM and LMP, such as the lack of total asset visibility, DLA and the Army cannot be assured that BSM and LMP will routinely generate timely, accurate, and useful financial information. The inaccuracy and unreliability of financial information has been a long-standing DOD weakness. As mentioned previously, BSM and LMP rely on information received from and sent through the various systems. However, the interfaces with these multiple systems were not fully developed, nor were they tested when BSM and LMP become operational. As a result, DLA and the Army do not have reasonable assurance that their respective systems are capable of providing the intended capability. In fact, the reported operational problems clearly indicate that BSM and LMP are not providing accurate data. For example, the manual workarounds that were required to compensate for the data conversion problems associated with SAMMS caused additional errors, which affected the accuracy of data produced. In the case of LMP, the Army has acknowledged that accurate information on its depot operations is not readily available. This problem severely impairs the Army's ability to develop accurate prices for its depot operations. Inaccurate prices could result in customers being charged too much or too little for the services provided. Furthermore, the overall concerns we raised with regard to DLA and the Army not following disciplined processes in the key areas of requirements management and testing further expose BSM and LMP to unnecessary risks. Specifically, the resulting systems will not provide the accurate and complete information that is crucial to making informed decisions and controlling assets so that DOD's mission and goals are efficiently and effectively accomplished.

Further, although DLA and the Army have asserted that BSM and LMP, respectively, are compliant with the requirements of the Federal Financial Management Improvement Act of 1996⁶⁶ (FFMIA), we have concerns with the methodology followed in reaching that conclusion. FFMIA builds on the foundation laid by the Chief Financial Officers Act (CFO) of 1990⁶⁷ by emphasizing the need for agencies to have systems that can generate reliable, useful, and timely information with which to make fully informed decisions and to ensure accountability on an ongoing basis. FFMIA

⁶⁶ Federal Financial Management Improvement Act of 1996, Pub. L. No. 104-208, div. A., §101(f) title VIII, 110 Stat. 3009, 3009-389 (Sept. 30, 1996).

⁶⁷ Pub. L. No. 101-576, 104 Stat. 2838 (Nov. 15, 1990), (*codified, as amended, in scattered sections of title 31, United States Code*).

requires the 23 major departments and agencies covered by the CFO Act to implement and maintain financial management systems that comply substantially with (1) federal financial management systems requirements, (2) applicable federal accounting standards,⁶⁸ and (3) the *U.S. Government Standard General Ledger* (SGL)⁶⁹ at the transaction level.

DLA's and the Army's assertions are based upon self-assessments of the financial management requirements that were reviewed by independent parties. For both systems, testing of transactions was not performed to validate that they would be able to process the data as intended. For example, in the case of BSM, for one requirement the contractor stated that "a sample of transactions were reviewed, [and] it appears that BSM properly records transactions consistent with the SGL posting rules." However, we found no indication that this requirement was tested, and therefore, we cannot conclude whether BSM has the capability to meet this requirement.

In the case of LMP, we found that the Army relied upon Joint Financial Management Improvement Program (JFMIP)⁷⁰ testing for 147 requirements because JFMIP had validated these requirements when it tested the vendor's commercial software used for LMP during fiscal year 1999. JFMIP testing should not be considered a substitute for individual system testing of the actual data that will be used by the entity. Further, JFMIP's tests of the software do not address entity-specific integrated tests of end-to-end transactions or system interfaces. Because the Army had to make modifications to the basic commercial software package to accommodate some of its business operations, the Army cannot be assured, without retesting, that these 147 requirements will produce the intended results.

⁶⁸ The American Institute of Certified Public Accountants recognizes the federal accounting standards promulgated by the Federal Accounting Standards Advisory Board as generally accepted accounting principles.

⁶⁹ The SGL provides a standard chart of accounts and standardized transactions that agencies are to use in all their financial systems.

⁷⁰ JFMIP is a joint and cooperative undertaking of the Department of the Treasury, the General Accounting Office, the Office of Management and Budget, and the Office of Personnel Management working in cooperation with each other and other agencies to improve financial management practices in government. The Program Management Office, managed by the Executive Director of JFMIP, tests vendor COTS packages and certifies that they meet certain federal financial management systems requirements for core financial systems.

Without adequate documentation to support testing of the FFMIA requirements and based on our findings, it is questionable whether BSM and LMP are substantially compliant with FFMIA. As a result, DLA and the Army cannot provide reasonable assurance that BSM and LMP will routinely generate timely, accurate, and useful information with which to make informed decisions and to ensure accountability on an ongoing basis.

Conclusions

DOD has made limited progress in achieving effective management oversight, control, and accountability over its \$19 billion in business system investments. As a result, DOD cannot provide Congress reasonable assurance that the billions of dollars being spent annually on system modernizations are not being wasted on projects that will perpetuate the current costly, nonintegrated, duplicative systems environment. Our two cases studies—BSM and LMP—are prime examples of DOD business system modernization projects costing billions of dollars that are not directed toward a corporate solution for resolving some of DOD's long-standing financial and inventory management problems. Rather, these efforts are more narrowly focused on DLA's and the Army's business operations, but even within that more restricted scope, weaknesses in project management have resulted in problems in delivering the intended capabilities. As the department moves forward with the continued development and implementation of the business enterprise architecture, it is critical that actions be taken to gain more effective control over business system funding. Maintaining the status quo of permitting each of the military services and DOD agencies to manage and oversee its business systems investments only serves to perpetuate the existing nonintegrated and duplicative systems environment and continues to impede the department's overall transformation as envisioned by the Secretary of Defense.

Matters for Congressional Consideration

The manner in which business system funding is currently controlled hampers the development and implementation of broad-based, integrated corporate system solutions to address DOD-wide problems. Each military service and defense agency receives its own funding and is largely autonomous in deciding how to spend these funds, thereby enabling multiple system approaches to common problems. This funding structure has contributed to the duplicative, nonintegrated, error-prone systems environment that exists today. To improve management oversight,

accountability, and control of the department's business systems funding, Congress may wish to consider the following four legislative initiatives:

- Assign responsibility for the planning, design, acquisition, deployment, operation, maintenance, modernization, and oversight of business systems to domain leaders (e.g., the Under Secretary of Defense for Acquisition, Technology and Logistics and the DOD CIO).
- Direct the Secretary of Defense, in coordination with the domain leaders, to develop a defense business system budget that (1) identifies each business system for which funding is being requested, (2) identifies all funds by appropriation type and whether they are for current services or modernization, and (3) provides justification for expending funds on system(s) that are not in compliance with the department's business enterprise architecture.
- Appropriate funds to operate, maintain, and modernize DOD's business systems to domain leaders rather than the military services and defense agencies.
- Direct that each domain establish a business system investment review board that is to be composed of representatives from the military services and defense agencies who will be responsible for review and approval of all business system investments.

Recommendations for Executive Action

To help improve the department's (1) control and accountability over its business systems investments and (2) future deployments of BSM and LMP, we are making the following four recommendations. We recommend that the Secretary of Defense direct:

- The Under Secretary of Defense (Comptroller) and the Assistant Secretary of Defense for Networks and Information Integration to develop a standard definition for DOD components to use to identify business systems.
- The Assistant Secretary of Defense for Networks and Information Integration to expand the existing IT Registry to include all business systems.
- The Under Secretary of Defense (Comptroller) to establish a mechanism that provides for tracking all business systems modernization

conditional approvals to provide reasonable assurance that all specific actions are completed on time.

- The Director, Defense Logistics Agency, and the Commanding General, Army Materiel Command, to take the following actions:
 - Develop requirements that contain the necessary specificity to reduce requirements-related defects to acceptable levels. The requirements management process used to develop and document the requirements should be adequate to ensure that each requirement (1) fully describes the functionality to be delivered; (2) includes the source of the requirement; (3) is stated in unambiguous terms that allow for quantitative evaluation; and (4) is consistent, verifiable, and traceable.
 - Conduct thorough testing before (1) making further deployment decisions and (2) adding functionality to existing deployment locations.

Agency Comments and Our Evaluation

We received written comments on a draft of this report from the Acting Under Secretary of Defense (Comptroller) (see app. II). DOD agreed with our four recommendations to the Secretary of Defense and two of the four matters for congressional consideration. With regard to the recommendations to the Secretary of Defense, the department identified actions it has under way and planned to address the concerns discussed in the report. For example, the department stated that a system has been developed that will track all business systems modernization conditional approvals until all required actions are completed. In addition, the department acknowledged that the initial implementations of BSM and LMP experienced problems that could be attributed to the lack of adequate requirements determination and system testing. To address these inadequacies, the department noted that requirements analysis had been expanded to include greater specificity and to require the successful completion of comprehensive testing prior to further implementation of either system. The department also stated that industry best practices would be followed.

With regard to our matters for congressional consideration, the department disagreed that (1) responsibility for the planning, design, acquisition, deployment, operation, maintenance, modernization, and oversight of business systems be assigned to domain leaders (e.g., the Under Secretary

of Defense for Acquisition, Technology and Logistics and the DOD CIO) and (2) funds to operate, maintain, and modernize DOD's business systems be appropriated to domain leaders rather than the military services and defense agencies. On the first matter, the department stated that it is developing its business enterprise architecture and its business IT investment management structure and that these structures will provide the necessary management and oversight responsibility. DOD also noted that business system portfolio management would be an integral part of its oversight efforts. Further, DOD noted that the domain leaders will work closely with component acquisition executives and the DOD CIO, who have statutory responsibilities for IT related investment activities.

We continue to believe that Congress may wish to consider assigning to the domains the responsibility for the planning, design, acquisition, deployment, operation, maintenance, modernization, and oversight of business systems. DOD components being responsible for these functions has resulted in the existing business system environment of at least 2,274 systems that are not capable of providing DOD management and Congress accurate, reliable, and timely information on the results of the department's vast operations. DOD has recently stated that the actual number of systems could be twice the amount currently reported.⁷¹ Further, because the various DOD components are largely autonomous, despite DOD's assertion that component acquisition executives will work more closely with domain leaders under current statutory structure, there is no incentive for them to seek corporate solutions to problems. Our two case studies—BSM and LMP—clearly demonstrate that these two system modernization efforts are not directed toward a corporate solution to resolving the department's long-standing weaknesses in areas such as inventory and logistics management. Within the current departmental organization structure, DOD components are able to develop multiple system approaches to common problems.

With regard to the funding being provided to the domains, the department stated that the portfolio management process being established—to include investment review boards—would provide the appropriate control and accountability over business system investments. DOD also noted that beginning with the fiscal year 2006 budget review process, the domains will

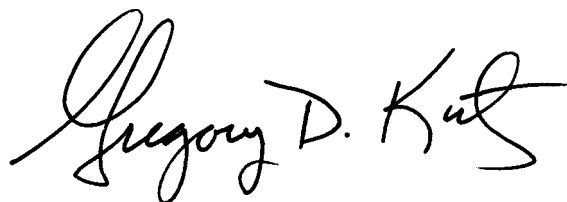
⁷¹ U.S. General Accounting Office, *Department of Defense: Further Actions Needed to Establish and Implement a Framework for Successful Business Transformation*, [GAO-04-626T](#) (Washington, D.C.: Mar. 31, 2004).

be actively involved in business system investment decisions. While the establishment of the investment review boards is consistent with our previous recommendations, we continue to believe that appropriating funds for DOD business systems to the domains will significantly improve accountability over business system investments. DOD's comments indicate that the domains will be more accountable for making business system investment decisions, but unless they control the funding, they will not have the means to effect real change. Continuing to provide business system funding to the military services and defense agencies is an example of the department's embedded culture and parochial operations. As a result of DOD's intent to maintain the status quo, there can be little confidence that it will not continue to spend billions of dollars on duplicative, nonintegrated, stovepiped, and overly costly systems that do not optimize mission performance and accountability and, therefore, do not support the department's transformation goals.

As agreed with your offices, unless you announce the contents of this report earlier, we will not distribute it until 30 days after its date. At that time, we will send copies to the Chairmen and Ranking Minority Members, Senate Committee on Armed Services; Subcommittee on Defense, Senate Committee on Appropriations; House Committee on Armed Services; Subcommittee on Defense, House Committee on Appropriations; Senate Committee on Governmental Affairs; and House Committee on Government Reform. We are also sending copies to the Director, Office of Management and Budget; the Under Secretary of Defense (Comptroller); the Under Secretary of Defense (Acquisition, Technology and Logistics); the Assistant Secretary of Defense (Network and Information Integration); the Director, Defense Logistics Agency; and the Commanding General, Army Materiel Command. Copies of this report will be made available to others upon request. The report is also available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions on matters discussed in this report, please contact Gregory D. Kutz at (202) 512-9505 or kutzg@gao.gov or

Keith A. Rhodes at (202) 512-6412 or rhodesk@gao.gov. GAO contacts and key contributors to this report are listed in appendix V.



Gregory D. Kutz
Director
Financial Management and Assurance



Keith A. Rhodes
Chief Technologist
Applied Research and Methodology Center for Engineering and Technology

Scope and Methodology

We reviewed the Department of Defense's (DOD) \$28 billion fiscal year 2004 information technology (IT) budget request to determine what portion of the budget relates to DOD business systems. We reviewed the budget to determine, of the approximately \$19 billion related to the department's business systems, the amount allocated for operation, maintenance, and development. Additionally, we reviewed DOD's business systems inventory, as reported by the department in April 2003, to ascertain if the systems were identified in the budget request. To obtain an overview of how an IT budget request is developed, we also met with officials in the offices of the DOD Comptroller and DOD Chief Information Officer (CIO), as well as CIO and financial management officials from the military services.

To determine the effectiveness of DOD's control and accountability over its business systems investments, we met with DOD officials to obtain an update on the status of our prior recommendations. We also met with appropriate officials in the DOD Comptroller and DOD CIO offices to discuss the status of various draft policies and guidance that are aimed at improving the department's control and accountability over business system investments. We also reviewed and analyzed the DOD budget requests for fiscal years 2003 through 2005 to identify the business systems investments that could be subject to the requirements of the Bob Stump National Defense Authorization Act for Fiscal Year 2003,¹ which requires the DOD Comptroller to review all system improvements with obligations exceeding \$1 million and make a determination whether the improvement is in accordance with criteria specified in the act. To assess DOD's compliance with the act, we also obtained and reviewed departmental guidance, memorandums, DOD Comptroller review decisions, and other documentation provided by the Business Management Systems Integration (BMSI) office. Additionally, we requested that DOD provide us obligational data in excess of \$1 million for business systems for fiscal years 2003 and 2004, as of December 2003. We received obligational data from the military services, but did not receive any information from the defense agencies. We then compared the obligation data provided by the military services with the information from the BMSI office to determine if the modernizations were reviewed as stipulated by the act. To augment our document reviews and analyses, we interviewed officials from various DOD organizations, including the Office of the Under Secretary of Defense (Comptroller);

¹ Bob Stump National Defense Authorization Act for Fiscal Year 2003, Pub. L. No. 107-314, § 1004, 116 Stat. 2630 (Dec. 2, 2002).

Office of the Under Secretary of Defense (Network and Information Integration)/Chief Information Officer; Office of the Under Secretary of Defense (Acquisition, Technology and Logistics); and CIO and financial management officials from the military services.

To determine if selected DOD business system projects are being effectively managed and will help resolve some of DOD's long-standing business operation problems, we selected the logistics domain from which we chose individual case studies for detailed review. We selected the logistics domain because it represents \$770 million, or 16 percent, of modernization funding requested in fiscal year 2004 for the department's business systems. The logistics domain was also selected because of its significance to DOD operations and its long-standing and inherent inventory and related financial management weaknesses, such as the inability to support its inventory balances and provide total asset visibility. We selected the Defense Logistics Agency's (DLA) Business Systems Modernization (BSM) and the Army's Logistics Modernization Program (LMP) for detailed review. For these two business systems, we focused on two key processes, requirements management and testing.

To assess whether DLA and the Army had established and implemented disciplined processes related to requirements management and testing, we

- reviewed DLA's and the Army's procedures for defining requirements management frameworks and compared these procedures to their current practices;
- reviewed guidance published by the Institute of Electrical and Electronics Engineers and the Software Engineering Institute and publications by experts to determine the attributes that should be used for developing good requirements;
- reviewed BSM's system requirement documents related to finance, order fulfillment, planning, and procurement and LMP's system requirement documents related to planning and budget development, asset management, inventory management, and maintenance analysis and planning; and
- selected 13 of BSM's 202 system requirements and 12 of LMP's 293 system requirements and performed an in-depth review and analysis to determine whether they had the attributes normally associated with

good requirements and whether these requirements traced between the various process documents.

To augment these document reviews and analyses, we interviewed DLA and Army program officials and Defense Finance and Accounting Service (DFAS) officials. To identify the costs associated with BSM and LMP, we reviewed data provided by DLA and Army program officials. We also reviewed prior GAO, DOD Inspector General, and service auditors' reports, as well as DOD's agencywide financial statements to obtain further information on inventory costs.

We conducted our work at the Office of the Under Secretary of Defense (Comptroller); the Office of the Under Secretary of Defense (Acquisition, Technology and Logistics); the Office of the Assistant Secretary of Defense (Network and Information Integration)/Chief Information Officer; DLA; the Army Materiel Command; and the CIO and financial management offices for the military services. We also visited two locations—the Defense Supply Center in Richmond, Virginia, and the Army's contractor site (Computer Sciences Corporation) in Moorestown, New Jersey—to gain an understanding of user involvement in the development and operation of BSM and LMP, as well as the business processes associated with each system.

We conducted our work from August 2003 through March 2004 in accordance with U.S. generally accepted government auditing standards. We did not verify the accuracy and completeness of the cost information provided by DOD for the two projects we reviewed.

We requested comments on a draft of this report from the Secretary of Defense or his designee. We received written comments on a draft of this report from the Acting Under Secretary of Defense (Comptroller), which are reprinted in appendix II.

Comments from the Department of Defense



UNDER SECRETARY OF DEFENSE
1100 DEFENSE PENTAGON
WASHINGTON, DC 20301-1100

MAY 6 2004

COMPTROLLER

Mr. Gregory Kutz
Director
Financial Management and Assurance
United States General Accounting Office
Washington, DC 20548

Dear Mr. Kutz:

Enclosed is an updated response by the Department of Defense (DoD) to the General Accounting Office (GAO) Draft Report, "DoD Business Systems Modernization: Billions Continue to be Invested with Inadequate Management Oversight and Accountability," (GAO-04-615), dated April 7, 2004. The Department concurs with all four of the GAO's recommendations for executive action (see Enclosure).

At this time, however, we do not concur with two of the four matters for congressional consideration. The Department has made significant progress during the past 2 years regarding its business transformation efforts in general, and our efforts regarding the Business Management Modernization Program (BMMP) in particular. Within the BMMP, the Department is developing both a DoD Business Enterprise Architecture (BEA) and a business Information Technology (IT) investment governance structure. Both the BEA and the business IT investment governance structure depend significantly on business system portfolio management by the Department's key business areas at the Office of the Secretary of Defense (OSD) level, called Domains. The Domains will act as an initial Investment Review Board, and they will provide strong management oversight to the Department's upcoming business IT investment decisions. Beginning with the Department's fiscal year 2006 program and budget development process, the Domains will influence greatly the business system investment decisions being made by the DoD Components.

My point of contact for this matter is Dr. Paul Tibbits, Director for Business Modernization and Systems Integration (BMSI). Dr. Tibbits may be contacted by email: Paul.Tibbits@osd.pentagon.mil or by telephone at (703) 607-3370.

Sincerely,

A handwritten signature in cursive script that reads "David L. Norquist".

David L. Norquist
Acting

Enclosure:
As stated

DoD Update to GAO Draft Report, dated April 7, 2004:
“DoD Business Systems Modernization: Billions Continue to be Invested with Inadequate
Management Oversight and Accountability,” (GAO-04-615)

A. Recommendations for Executive Action:

A.1. GAO Recommendation: The Secretary of Defense direct the Under Secretary of Defense (Comptroller) and the Assistant Secretary of Defense for Networks and Information Integration to develop a standard definition that DoD Components use to identify business systems.

DoD Response to GAO Recommendation A.1: Concur. The Under Secretary of Defense (Comptroller) (USD(C)) and the Assistant Secretary of Defense (Networks and Information Integration) (ASD(NII)) currently are leading the process to jointly develop a standard definition for systems that DoD Components will be directed to use to identify both their business information technology (IT) systems as well as their National Security Systems (NSS). This definition is planned to include a comprehensive set of discriminators that will provide a baseline for a common understanding of what is meant by a “system.” The USD(C) and the ASD(NII) are developing the definition of a system in conjunction with the Department’s key business areas, called “Domains,” and with the Department of Defense (DoD) Components. The Department is developing the definition within the context of the Domain Owners Integration Team (DO/IT), part of the governance process for the DoD Business Management Modernization Program (BMMP). Expected completion date: June 2004.

A.2. GAO Recommendation: The Secretary of Defense direct the Assistant Secretary of Defense for Networks and Information Integration to expand the existing IT registry to include all business systems.

DoD Response to GAO Recommendation A.2: Concur. The ASD(NII) issued guidance in December 2003 requiring all DoD Component nonmission critical and nonmission essential information systems be reported to the IT Registry by September 30, 2006. This guidance will be implemented in stages. Starting with the existing IT Registry baseline of DoD mission critical and mission essential systems, additional systems will be reported to the IT Registry in fiscal year (FY) 2004, based on the standard definition of systems that currently is being developed (see DoD Response to GAO Recommendation 1, above), and that is within the dollar threshold mandated by statute.

A.3. GAO Recommendation: The Secretary of Defense direct the Under Secretary of Defense (Comptroller) to establish a mechanism that provides for tracking all business systems modernization conditional approvals to provide reasonable assurance that all specific actions are completed in a timely manner.

DoD Update to GAO Recommendation A.3: Concur. The Department has developed a tracking system for all requests to the USD(C) for business system certification. The tracking system monitors all requests for USD(C) certification from receipt through completion/approval. The tracking system consists of electronic access, storage, and retrieval, and permits report generation for Departmental or congressional staff requests. Requests for USD(C) certification

are monitored weekly, so that requests provided “conditional” approval are monitored until all remaining required actions are completed.

A.4. GAO Recommendation: The Secretary of Defense direct the Director, DLA and Commander, Army Materiel Command to develop requirements that contain necessary specificity to reduce requirements related defects to acceptable levels (with guidance), and conduct thorough testing before making further deployment decisions or adding additional functionality to existing deployment locations.

DoD Update to Recommendation A.4: Concur. The Department shares GAO’s concerns regarding improved requirements management and testing practices on the Defense Logistics Agency (DLA) Business Systems Modernization (BSM) program and the Army Logistics Modernization Program (LMP). Initial implementation of these programs experienced problems that could be attributed to requirements and testing. We are incorporating the lessons learned from these programs into our processes. For example, we have expanded requirements analysis to include greater specificity and require the successful completion of comprehensive testing be conducted prior to implementation. The Department will ensure that the BMMP, via the Logistics Domain, will work with the ASD(NII) and the Army to ensure continued oversight and management of the issues identified by GAO and that industry best practices are implemented.

BSM and LMP were initiated prior to the creation of the business domain structure and its associated governance process and prior to the existence of the Business Enterprise Architecture (BEA) and the Global Information Grid (GIG) as guides to ensure testing to specific requirements. However, OSD oversight of the LMP program now is in place. The Department has placed the LMP program into Major Automated Information System (MAIS) management processes. That structure, coupled with the Logistics Domain providing effective architecture-based oversight, governance and portfolio management, will provide the USD(AT&L), USD(C), and ASD(NII) with direct oversight on that system’s decision-making processes.

OSD oversight of the BSM program already is in place via the MAIS IPT requirements. Before future deployments are approved, both the LMP and BSM programs will be required to comply with the BEA and the Department’s Global Information Grid (GIG) requirements, successfully satisfy third party assessments of Federal Financial Management Integrity Act (FFMIA) requirements, provide satisfactory business case investment justification, obtain certification by the USD(C) that the system meets statutory investment requirements and confirmation by the Chief Information Officers that the program are being managed and developed in accordance with the Clinger-Cohen Act.

Additional Domain mitigation plans and architectural requirements have been implemented to address the requirements definition and testing issues. Increased awareness of the ERP programs in the Overarching Integrated Process Team (OIPT) structure and in the program management has enabled improved oversight.

B. GAO Matters for Congressional Consideration:

The Department has made significant progress during the past two years regarding its business transformation efforts in general, and our efforts regarding the Business Management Modernization Program (BMMP) in particular. Within the BMMP, the Department is developing both a DoD Business Enterprise Architecture (BEA) and a business Information Technology (IT) investment governance structure.

B.1 GAO Matter: Assign to the domain leaders the responsibility for the planning, design, acquisition, deployment, operation, maintenance, modernization, and oversight of business systems.

DoD Response to GAO Matter B.1: Nonconcur. Domain leaders should not have direct responsibility for acquisition, deployment, operation and maintenance. However, OSD has assigned significant oversight responsibilities to the Domains for their respective business systems. Within the past two years, DoD has made significant progress regarding its business transformation efforts in general, and its efforts regarding the Business Management Modernization Program (BMMP) in particular. Within the BMMP, the Department is developing both a DoD Business Enterprise Architecture (BEA) and a business Information Technology (IT) investment governance structure that we believe will provide the recommended management and oversight responsibility. Both the BEA and the Business IT investment governance structure depend significantly on business system portfolio management and oversight by the Department's key business areas at the Office of the Secretary of Defense (OSD) level, called Domains. We are working with the Domains to initiate their portfolio management roles and responsibilities with respect to business systems, and expect to continually refine this process. In accordance with statute, the ASD(NII) and the DoD Component Acquisition Executives (CAEs) are responsible for acquisition oversight of IT acquisition programs, including serving as the Milestone Decision Authority for the programs under their cognizance. We and the Domains work closely with the ASD(NII) and the CAEs to ensure that Domain oversight and acquisition oversight are conducted in an integrated manner. Statute also gives the Components responsibility for deployment, operation and maintenance.

B.2 GAO Matter: Direct the Secretary of Defense to develop a defense business system budget that (1) identifies each business system for which funding is being requested, (2) identifies all funds by appropriation types and whether it is for current services or modernization, and (3) provides justification for expending funds on system(s) that are not in compliance with the department's business enterprise architecture.

DoD Response to GAO Matter B.2: Concur. The FY 2003 National Defense Authorization Act and the FY 2004 National Defense Appropriation Act required USD(C) certification of business IT system investments in excess of \$1 million. The Department has begun certifying business IT system investment based on those statutory requirements, which have the effect of meeting the intent of GAO Matter B.2. Combined with the Department's recently established Business IT Portfolio Management policy, DoD will more fully accomplish the recommendations of GAO Matter B.2, beginning with the development of the FY 2006 DoD

budget process. The FY 2006 budget development process will occur between July and December 2004.

B.3 GAO Matter: Appropriate funds to operate, maintain, and modernize DoD business systems to domain leaders rather than the military services and defense agencies.

DoD Response to GAO Matter B.3: Nonconcur. Both the BEA and the Business IT investment governance structure, discussed above, depend significantly on the revolutionary business system portfolio management process being established within the Department's key business areas at the Office of the Secretary of Defense (OSD) level, called Domains. Beginning with the FY 2006 DoD program budget development process, the Domains will be acting as an initial Investment Review Board, and will provide strong management oversight to the Department's upcoming business IT investment decisions. Therefore, the Domains also will be influencing greatly the business system investment decisions being made by the DoD Components. The DoD Components have had significant participation in the establishment of the Domains and of the portfolio management process, and we consider the support of the DoD Components in this matter to be essential. Therefore, we seek to accomplish a smooth transition to the Domains' portfolio management roles and responsibilities, and their investment review activities. We believe that the Department will begin to realize the productive results of our joint efforts later this year, in the development of the FY 2006 program and budget development process. The Department will report back to the Congress on our accomplishments in January 2005, when the FY 2006 DoD program budget has been finalized and sent to the President.

B.4 GAO Matter: Direct that each domain establish a business system investment review board that is to be comprised of representatives from the military services and defense agencies that shall be responsible for review and approval of all business systems investments.

DoD Response to GAO Matter B.4: Concur. The Department supports the intent of this recommendation. We believe that our business transformation efforts, complemented by the BEA, the BMMP governance process, and the Department's recently established portfolio management process will accomplish this effort. The Domains are working with the DoD Components to finalize an effective and acceptable business IT system investment review process. We will report back to the Congress on our accomplishments in January 2005, when the FY 2006 DoD program budget has been finalized and sent to the President.

DOD Business Systems Obligations in Excess of \$1 Million Approved by the DOD Comptroller

Name of system	Approval date
Air Force Financial Information Resource System	January 2003
Navy Enterprise Resource Planning Pilots	February 2003
National Security Agency Pilot Initiative	March 2003
Reserve Component Automation System	March 2003
Navy Enterprise Resource Planning Program	April 2003
Defense Integrated Military Human Resources System	April 2003
DFAS Mechanization of Contract Administration Services Rehost	May 2003
DFAS PowerTrack (SCR) ^a	May 2003
Army Integrated Facilities System (SCR) ^a	May 2003
Navy Enterprise Maintenance Automated Information System	July 2003
Global Combat Support System—Army	August 2003
DFAS e-Biz Capital Investment Reprogramming	August 2003
Defense Travel System	October 2003
Standard Procurement System	October 2003
DFAS Operational Data Store (SCR) ^a	October 2003
Composite Health Care System II	November 2003
DFAS General Accounting and Finance System Rehost	November 2003
Air Force Reserve Travel System	December 2003
DFAS Automated Time, Attendance and Production System (SCR) ^a	December 2003
DFAS Defense Joint Military Pay System—Active Component (SCR) ^a	December 2003
DFAS Defense Joint Military Pay System—Reserve Component (SCR) ^a	December 2003
DFAS Defense MilPay Office (SCR) ^a	December 2003
DFAS Defense Retired and Annuitant Pay System (SCR) ^a	December 2003
DFAS Marine Corps Total Force System (SCR) ^a	December 2003

Source: GAO analysis of DOD data.

^aA system change request (SCR) is a system life cycle documentation standard that documents a formal request for a change to an automated information system. The change may be for either a "fix" to a problem or an enhancement.

DOD Business Systems Obligations in Excess of \$1 Million for Modernizations Not Submitted to the DOD Comptroller

Dollars in millions

Component	Name of system	Amount		Total
		2003	2004	
Army				
	Logistics Modernization Program	\$52.4	\$7.4	\$59.8
	Transportation Coordinators' Automated Information for Movements System II	\$21.7	\$10.4	\$32.1
	Total Distribution Program	\$21.9	^a	\$21.9
	Army Recruiting Information Support System	\$24.3	\$1.6	\$25.9
	Electronic Military Personnel System	\$10.2	\$3.4	\$13.6
	Personnel Transformation	\$11.0	^a	\$11.0
	Defense Civilian Personnel Data System-Sustainment	\$3.4	\$6.1	\$9.5
	MEPCOM Management Information Reporting System	\$6.0	^a	\$6.0
	Installation Support Modules	\$1.7	^a	\$1.7
	Joint Computer-Aided Acquisition and Logistics Support	\$19.7	\$1.6	\$21.3
	Subtotal Army	\$172.3	\$30.5	\$202.8
Navy				
	Navy Tactical Command Support System	\$21.8	\$20.3	\$42.1
	Marine Corps Common Hardware Suite	\$27.1	^a	\$27.1
	Defense Message System	\$21.3	\$7.2	\$28.5
	Electronic Military Personnel Records System	\$17.8	\$5.8	\$23.6
	Electronic Commerce/Electronic Data Interchange	\$8.9	\$2.6	\$11.5
	Shipboard Management Information System	\$8.4	^a	\$8.4
	One Touch Supply	\$2.1	^a	\$2.1
	Navy Standard Integrated Personnel System	\$2.2	^a	\$2.2
	Conventional Ammunition Integrated Management System	\$4.3	\$2.0	\$6.3
	Shipyards Management Information Systems-Financials	\$3.1	^a	\$3.1
	SPAWAR Financial Management - ERP	\$3.7	\$1.1	\$4.8
	MSC Afloat Personnel Management Center	\$5.3	\$2.2	\$7.5
	NAVSEA Depot Maintenance System-L03	\$1.2	^a	\$1.2
	Transportation Coordinators' Automated Information for Movements System II	\$4.4	^a	\$4.4

Appendix IV
DOD Business Systems Obligations in Excess
of \$1 Million for Modernizations Not
Submitted to the DOD Comptroller

(Continued From Previous Page)

Dollars in millions

Component	Name of system	Amount		Total
		2003	2004	
	Business Process Reengineering	\$2.8	^a	\$2.8
	Depot Maintenance System	\$2.4	^a	\$2.4
	Joint Simulations System	\$4.3	^a	\$4.3
	Military Sealift Command Financial Management System	\$1.4	^a	\$1.4
	New Order Writing System	\$4.0	^a	\$4.0
	Asset Tracking Logistics and Supply System	\$2.3	^a	\$2.3
	USMC Operational Support Systems	\$17.5	\$5.4	\$22.9
	Subtotal Navy	\$166.3	\$46.6	\$212.9
Air Force				
	Integrated Maintenance Data System	\$9.2	\$3.7	\$12.9
	Stock Control System	\$8.0	^a	\$8.0
	Integrated Logistics System – Supply	\$7.1	\$2.3	\$9.4
	Depot Maintenance Accounting and Production System	\$28.6	^a	\$28.6
	Supply Working Capital Fund Decision Support System (Keystone)	\$1.1	^a	\$1.1
	Reliability and Maintainability Information System	\$3.5	^a	\$3.5
	Subtotal Air Force	\$57.5	\$6.0	\$63.5
Total		\$396.1	\$83.1	\$479.2

Source: GAO analysis of DOD data.

^aFor fiscal year 2004, DOD did not report obligational data.

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