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FINANCIAL MANAGEMENT AND BUSINESS TRANSFORMATION AT THE DEPARTMENT OF DEFENSE

HEARING

BEFORE THE

SUBCOMMITTEE ON READINESS AND MANAGEMENT SUPPORT

OF THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

JULY 27, 2011

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FINANCIAL MANAGEMENT AND BUSINESS TRANSFORMATION AT THE DEPARTMENT OF DEFENSE

WEDNESDAY, JULY 27, 2011

U.S. SENATE,
SUBCOMMITTEE ON READINESS AND
MANAGEMENT SUPPORT,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:09 p.m., in room SR–232A, Russell Senate Office Building, Senator Claire McCaskill (chairman of the subcommittee) presiding.

Committee members present: Senators McCaskill, Begich, Manchin, Portman, Ayotte, and Cornyn.

Committee staff members present: Leah C. Brewer, nominations and hearings clerk; and Jennifer L. Stoker, security clerk.

Majority staff member present: Peter K. Levine, general counsel.

Minority staff members present: Pablo E. Carrillo, minority investigative counsel; and Lucian L. Niemeyer, professional staff member.

Staff assistants present: Brian F. Sebold and Breon N. Wells.

Committee members' assistants present: Tressa Guenov, assistant to Senator McCaskill; Lindsay Kavanaugh, assistant to Senator Begich; Joanne McLaughlin, assistant to Senator Manchin; Brent Bombach, assistant to Senator Portman; Brad Bowman, assistant to Senator Ayotte; and Dave Hanke, assistant to Senator Cornyn.

OPENING STATEMENT OF SENATOR CLAIRE MCCASKILL, CHAIRMAN

Senator MCCASKILL. Thank you, everyone, for joining us today for this hearing.

The Readiness and Management Support Subcommittee meets today to address the issues of financial management and business transformation at the Department of Defense (DOD). We are pleased to be joined by the Honorable Robert Hale, DOD Comptroller; the Honorable Elizabeth A. McGrath, the DOD Deputy Chief Management Officer (CMO); the Comptrollers of the three Military Departments; and Mr. Asif A. Khan, Director of Financial Management and Assurance at the Government Accountability Office (GAO).

Welcome to all of you, and thank you for your participation in this very important hearing.

GAO first designated DOD financial management as high risk in 1995, as a result of pervasive financial and related business management systems and control deficiencies. These deficiencies, GAO reported, have adversely affected DOD's ability to control costs, ensure basic accountability, anticipate future costs and claims on the budget, measure performance, maintain funds control, prevent and detect fraud, waste, and abuse, address pressing management issues, and in some ways maybe the most important of all, the ability to prepare auditable financial statements.

Over the last decade, this committee has initiated a series of legislative provisions designed to address these problems as recommended by GAO. Unfortunately, we continue to hear reports that soldiers in the field have received the wrong paychecks, that DOD cannot account for expenditures of billions of dollars in Iraq and Afghanistan, and that DOD cannot reliably determine the number of contractors it employs.

Before leaving office earlier this month, Secretary Gates likened his efforts to find efficiencies and reduce waste in DOD to something akin to an Easter egg hunt. He stated, "My staff and I learned that it was nearly impossible to get accurate information and answers to questions such as 'How much money do you spend?' and 'How many people do you have?' "

The underlying problem is that DOD financial management systems are riddled with decades-old problems that are difficult to reverse. As GAO recently explained, the DOD systems environment that supports its business functions is overly complex and error prone and is characterized by: one, little standardization across DOD; two, multiple systems performing the same tasks; three, the same data stored in multiple systems; and four, the need for data to be entered manually into multiple systems.

According to DOD's systems inventory, this environment—now this is hard to believe—is composed of 2,258 business systems and includes 335 financial management, 709 human resource management, 645 logistics, 243 real property installation, and 281 weapon acquisition management systems.

DOD is endeavoring to address these problems by fielding a series of enterprise resource planning (ERP) programs. I hate acronyms, but it is very hard to function on the Senate Armed Services Committee without getting close and personal with acronyms.

So for everyone, and the public particularly, you should know that ERP is basically shorthand for "We are trying to get our arms around it." Which are intended to provide timely, reliable, accurate, and useful information for management decisions.

Unfortunately, these programs have not lived up to expectations. The Financial Improvement and Audit Readiness (FIAR) plan itself indicates that all three Military Departments have already missed deadlines on the implementation of their ERP systems. Last year, GAO reported that six of DOD's nine largest ERP programs had experienced schedule delays ranging from 2 to 12 years and incurred cost increases ranging from $530 million to $2.4 billion, in significant part because of DOD's failure to follow good management practices.

Similarly, the DOD Inspector General (IG) reported last month that the Army's General Fund Enterprise Business System

(GFEBS), or its ERP system, is at high risk of incurring additional schedule delays, exceeding planned cost, and not meeting program objectives as a result of inadequate planning and integration efforts.

Even if the GFEBS is deployed in a timely manner, the IG reported, it may not meet the Army's financial management objectives. In particular, the IG reported that the Army has not adequately planned for data conversion from existing systems to the GFEBS, failing completely to address the conversion of historical transaction data and the conversion of data from 49 non-Army systems.

According to the IG, these flaws mean that even if the Army fully deploys GFEBS in a timely manner, the Army will not be able to achieve its objective of auditable financial statements. I am deeply concerned that the shortcomings documented by the IG in the Army's GFEBS program are symptomatic of problems with the other ERP systems and that these problems will undermine DOD's efforts to address its financial management issues and achieve an auditable financial statement by 2017.

Sound financial systems and good data are critical to our efforts to provide efficient management, save money, and ensure accountability at DOD. We simply have to do better.

At this time, I would like also to insert a useful document into the record. Thanks to Senator Coburn's efforts, this document was prepared by the Congressional Research Service to chronicle the timeline of DOD's efforts since 1990 to achieve an unqualified audit.

It is a document that I recommend to everyone for their perusal. I think it is an excellent history for the public to know about. So I want it to be added to the record at this time, followed by my prepared statement.

[The information referred to follows:]

MEMORANDUM July 20, 2011

Subject: **Review of Legislation and Associated Events Relating to Requirement that DOD Obtain an Unqualified Audit of its Financial Statement**

From: Thomas J. Nicola, Legislative Attorney, 7-5004
Pat Towell, Specialist in U.S. Defense Policy and Budget, 7-2122

This memorandum was prepared to enable distribution to more than one congressional office.

This memorandum summarizes the evolution from 1990 to the present of the legal requirement that the Department of Defense (DOD) achieve unqualified (or clean) audit of its annual financial statements.

Highlights

- The Chief Financial Officers Act of 1990 (31 U.S.C. § 3515), amended in 1994, required agencies, including DOD, to present auditable financial statements beginning not later than March 1, 1997.
- The National Defense Authorization Act (hereinafter NDAA) for FY2002 required the Secretary of Defense to (1) report to Congress annually on the reliability of DOD's financial statements, (2) minimize resources spent on producing unreliable financial statements, and (3) use those resources, instead, to improve financial management policies, procedures, and internal controls.
- The FY2005 NDAA directed the Secretary to develop an enterprise architecture to cover all defense business systems.
- In 2005, DOD created a Financial Improvement and Audit Readiness (FIAR) Plan, overseen by a directorate within the Comptroller's office to improve DOD business processes with the goal of producing timely, reliable and accurate financial information that could generate an audit-ready annual financial statement. In December 2005, the FIAR Directorate issued the first of a series of semiannual reports on the status of the FIAR Plan.
- The FY2006 NDAA barred the Secretary of Defense from obligating or expending funds for any project intended to improve financial management information statements used to prepare or audit financial statements unless the Secretary affirms to Congress that the project in question is likely to improve the agency's financial management systems and controls.
- In August 2009, DOD Comptroller Robert F. Hale announced that, in DOD's effort to improve its financial management systems, priority would be given to improving those processes and controls that produce information on which DOD managers rely most

heavily to run the agency. In testimony before congressional committees, Hale had expressed concern about spending large amounts of money to improve information used to assign value to major assets such as weapons systems – information which would be required for an auditable financial statement but which, Hale said, is not used by DOD managers for any other purpose.

- The FY2010 NDAA codified in law a requirement for regular status reports on the Financial Improvement and Audit Readiness (FIAR) Plan that DOD had created in 2005, and codified as a legal requirement FIAR Plan's goal of ensuring that DOD financial statements are validated as ready for audit not later than September 30, 2017.
- At a September, 2010 Senate hearing, DOD officials stated that meeting the 2017 deadline may require significant expenditures to acquire and improve audit information, including historical asset valuations. In the same hearing, a GAO official said that DOD's past expenditures of $5.8 billion and billions more of future expenditures on new systems to improve this information will not suffice to achieve full audit readiness and that he could not predict when DOD would reach that condition.
- The FY2011 NDAA required DOD to create interim milestones toward achieving audit-readiness by 2017 and to consider the merits of specific positive and negative incentives to encourage DOD components to meet the deadline. It also required DOD to justify its selection of a method for assigning a value to each of its major assets, including weapons systems, real property, supply inventories, and the like.
- The May, 2011 FIAR Plan Status Report affirmed that DOD was making significant progress toward the goal of an auditable financial statement by 2017. The report also contended that it would not be worth the cost of calculating an auditable value for existing weapons systems which could be incorporated into DOD's an annual financial statement.
- The version of the FY2012 NDAA passed by the House on May 26, 2011 (H.R. 1540) and the version reported by the Senate Armed Services Committee (S. 1253) include provisions that would allow the Secretary of Defense to establish certification and credential standards for DOD financial managers.

Government-wide Requirement for Auditable Financial Statements -- *Chief Financial Officers Act of 1990*

The current requirement that federal agencies prepare an annual financial statement that meets "generally accepted government accounting standards" started as Section 303(a) of the Chief Financial Officers (CFO) Act of 1990 (P.L. 101-576)[1]. This section required the head of each agency covered by the CFO Act, including the Department of Defense, to prepare and submit to the Director of the Office of Management and Budget (OMB) a financial statement for the preceding fiscal year not later than March 31, 1992 and each year thereafter. Section 303 stated that each financial statement should cover each revolving and trust fund of the agency involved and, to the extent practicable, the accounts of each office, bureau, and activity of the agency involved which performed substantial commercial functions during the preceding fiscal year.

[1] 104 Stat. 2838, 2849 (1990). The provision is codified as 31 U.S.C. 3515.

Section 304(a) of the 1990 act also mandated that each financial statement prepared pursuant to this law be audited in accordance with generally accepted government auditing standards, either by the Inspector General (IG) of an agency which has an Inspector General appointed under the Inspector General Act of 1978[2], or by an independent external auditor, as determined by the agency's IG.[3]

Government Management Reform Act of 1994

The scope of the requirement for an annual financial statement was significantly expanded by Section 405(a) of the Government Management Reform Act of 1994[4]. This provision amended 31 U.S.C. section 3515 to require the head of each executive agency, including the Department of Defense, to prepare and submit to the Director of the Office of Management and Budget an audited financial statement for the preceding fiscal year covering all accounts and associated activities of each office, bureau, and activity of the agency not later than March 1, 1997 and each year thereafter.

Federal Financial Management Improvement Act of 1996

Also relevant to the requirement that agencies produce an auditable financial statement is the Federal Financial Management Improvement Act of 1996.[5] Section 803 of that act directs each agency to implement and maintain financial management systems that comply substantially with federal financial management system requirements, applicable accounting standards, and the United States Standard Government Ledger at the transaction level.[6] Each audit required by 31 U.S.C. section 3521(e) must report whether agency financial systems comply with these requirements. If an agency head determines that an agency's financial systems do not comply with them, the agency head, in consultation with the Director of OMB, is required to establish a remediation plan to bring these systems into substantial compliance within three years unless the agency head, in consultation with the Director, determines that a longer period is needed.

Bringing DOD into Compliance With the Requirement for Auditable Financial Statements

Since 1995, the Government Accountability Office[7] (GAO) has designated several DOD business operations and financial management as posing a "high risk" of waste, fraud, abuse or mismanagement.[8]

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[2] 5 U.S.C. Appendix.

[3] This requirement is codified as 31 U.S.C. 3521(e).

[4] P.L. 103-356, 108 Stat. 3410, 3415 (1994).

[5] P.L. 104-208, 110 Stat. 3009-389 (1996), reprinted as a note to 31 U.S.C. section 3512.

[6] 110 Stat. 3009 at 390.

[7] Until 2004, this congressional support agency was known as the General Accounting Office.

[8] On September 29, 2010, Asif A. Khan, Director of GAO's Financial Management and Assurance Division, testified to a Senate subcommittee that DOD had "dominated" GAO's list of "high risk" federal programs and operations for more than a decade. According to Khan, DOD was responsible, in whole or in part, for 15 of the 30 federal programs or activities at the GAO identified as "high risk." All the DOD programs on that list related to business operations, including systems and processes related to management of contracts, finances, the supply chain, support infrastructure, and weapons systems acquisition, Khan said. Statement of Asif A. Khan, Director, Financial management and assurance, GAO, "Financial Management Improvement and Audit Readiness Efforts Continue to Evolve," Testimony before the Subcommittee on Federal Financial Management, Government Information, Federal Services and International Security of the Senate Committee on Homeland Security and (continued...)

In 2010, the director of GAO's Financial Management and Assurance team testified to a Senate subcommittee that "long-standing and pervasive weaknesses in DOD's financial management and related business processes and systems," have resulted in a lack of reliable information needed to make sound decisions and have adversely affected the department's operational efficiency in business areas such as weapons system acquisition, and support and logistics.[9] More specifically, these conditions also have been cited by GAO and by DOD officials as precluding the preparation of an auditable DOD financial statement.

Beginning in 2001, Congress has incorporated into several DOD authorization and appropriations acts provisions of law requiring DOD to strengthen its financial management processes. In many cases, these legislative provisions codified decisions and practices that already had been put in place by DOD. Prominent among the goals these statutes have been intended to meet is the goal of bringing DOD into compliance with the statutory requirement that it produce an annual financial statement that can pass an audit.[10]

FY2002 National Defense Authorization Act—*Financial Statement Reliability Report and Resource Redirection*

Section 1008 of the FY2002 NDAA[11], enacted in December of 2001, directed the Secretary of Defense, not later than September 30 of each year, to report on the reliability of DOD financial statements to the House and Senate Committees on Armed Services, the House Committee on Government Reform[12], and the Senate Committee on Governmental Affairs,[13] as well as to the Director of OMB, the Secretary of the Treasury, and the Comptroller General of the United States. Section 1008 also provided that the Under Secretary of Defense (DOD Comptroller) should take appropriate actions to minimize, consistent with the benefits to be derived, the resources (including contractor support) used to develop, compile, and report the financial statement for each fiscal year that the Secretary of Defense assessed the statement as unreliable. The intent of this provision was to redirect DOD resources from preparing and auditing flawed financial statements to improving financial management systems, policies, and procedures on which these statements are based. In the same vein, Section 1008 also provided that the DOD Inspector General should only perform audit procedures required by generally accepted auditing standards consistent with any representation made by management on each financial statement that an official had asserted as unreliable.

Section 1008 also required the DOD Comptroller and his counterparts in each military department to provide to the auditors of the financial statement of DOD and each military department (respectively), not

(...continued)

Governmental Affairs, September 29, 2010, p. 3.

[9] Ibid., pp. 3-4.

[10] *Fiscal Year 2003 U.S. Government Financial Statements: Sustained Improvement in Federal Financial Management is Crucial to Addressing Our Nation's Future Fiscal* Challenges (testimony of David M. Walker, Comptroller General of the United States, before the Subcommittee on Government Efficiency and Financial Management of the House Comm. on Government Reform), GAO-04-477T at 9 (Mar. 3, 2004) (Walker testimony), available at [www.gao.gov] under Reports and Testimonies by GAO report number. *See High Risk Series: An Overview*, GAO/HR-95-1 (Feb. 1995) and *High Risk Series: An Update*, GAO-03-119 (Jan. 2003) for relevant GAO reports.

[11] P.L. 107-107, 115 Stat. 1012, 1204 (2001).

[12] The House Committee on Government Reform in the 111th Congress is the Committee on Oversight and Government Reform.

[13] The Senate Committee on Governmental Affairs in the 111th Congress is the Committee on Homeland Security and Governmental Affairs.

later than October 31 of each year, the responsible official's representation, in writing, regarding the expected reliability of the financial statement for the year just ended of DOD and military departments. Each representation had to be consistent with guidance issued by the Director of the Office of Management and Budget and had to include the basis for the reliability assessment.

Section 1008 also directed DOD to submit with its annual budget justifications an estimate, for the fiscal year for which the budget was being requested, the preceding fiscal year, and the following fiscal year, of the resources that DOD was saving, or expected to save, by not preparing unreliable financial statements. This submission was to include a discussion of how the saved resources had been redirected or were to be redirected from preparing these statements to improving systems underlying financial management within the Department and to improving DOD's financial management policies, procedures, and internal controls. Section 1008 also required the DOD Comptroller to submit with the annual DOD budget justifications information that the IG had reported to the Comptroller, for the fiscal year in which submitted, the preceding fiscal year, and the following fiscal year, regarding an estimate of the resources that the IG saved, or expected to save, by not fully auditing unreliable financial statements. This submission had to include a discussion of how these estimated savings had been redirected or were being redirected from auditing these statements to overseeing and improving the systems underlying DOD financial management, financial management policies, procedures, and internal controls.

The requirements of section 1008 applied to financial statements for fiscal years after Fiscal Year 2001 and to audits of those statements. The section also provided that these reporting requirements would not apply to a financial statement if the Secretary of Defense certified to the DOD Inspector General that the financial statement for DOD or a DOD component for a fiscal year was reliable, or to a successive DOD or DOD component's financial statement, as the case may be, for any later fiscal year.

Section 1008 of the enacted FY2002 NDAA was a slightly modified version of Section 1006 of S. 1416, which was the Senate-passed version of the bill. In its report on S. 1416, the Senate Armed Services Committee said that the section addressed DOD's "seriously deficient financial management systems and its continuing inability to produce reliable financial information or auditable financial statements."[14] The committee added that this section would authorize the Department to redirect resources from its efforts to prepare and audit financial statements to improving financial management systems, policies and procedures. The Committee recommended establishing a management process through which DOD should be able to address problems with the reliability of its financial systems and data.[15]

9/11 Emergency Supplemental Appropriation for FY2002—*Financial Statement Reporting Requirement Postponement After 9/11/01*

In January of 2002, one month after Congress passed the FY2002 NDAA, it enacted the Department of Defense and Emergency Supplemental Appropriations for Recovery from the Response to Terrorist Attacks on the United States Act, 2002.[16] Section 8152 of that statute authorized the Secretary of Defense to waive any requirement that the DOD Fiscal Year 2001 financial statement include accounts and associated activities of the Department of the Army and the Department of the Navy, to the extent that the Secretary determined necessary due to the effects of the terrorist attack on the Pentagon on September 11, 2001. The section provided, however, that if any of these accounts and associated activities were

[14] S Rept. 107-62, 107th Cong., 1st Sess. at 17 (2001), accompanying S. 1416.

[15] *Id.*

[16] P.L. 107-117, 115 Stat. 2230, 2282 (2002).

excluded from the Fiscal Year 2001 financial statement, the Secretary of Defense should, as soon as practicable after March 1, 2002, prepare and submit to the Director of the Office of Management and Budget a revised financial statement that included all of these accounts and activities. The section clarified that its phrase "Fiscal Year 2001 financial statement" meant the financial statement required by section 3515 of title 31 of the United States Code.

FY2003 NDAA—*Financial Management Enterprise Architecture Development Requirement*

The Bob Stump National Defense Authorization Act for Fiscal Year 2003,[17] passed by Congress in December of 2002, included Section 1004 directing the Secretary of Defense to develop, not later than May 1, 2003, a financial management enterprise architecture for all DOD budgetary, accounting, finance, enterprise resource planning (ERP), and mixed information systems, as well as a transition plan to implement this architecture. This architecture's composition was required to comply with all federal accounting, financial management, and reporting requirements; routinely produce timely, accurate, and reliable financial information for management purposes; integrate budget, accounting, and program information systems; and provide for systematic measurement of performance, including the ability to produce timely, relevant, and reliable cost information. Section 1004 also provided that this architecture should include policies, procedures, data standards, and system interface requirements to apply uniformly throughout the Department.

September 2004 GAO Report -- *DOD's 2007 Goal "Highly Unlikely"*

In November, 2003, DOD's Principal Deputy Under Secretary (Comptroller) testified to the Permanent Subcommittee on Investigations of the Senate Committee on Governmental Reform that the department had a plan to achieve its goal of an unqualified (clean) audit opinion on its Fiscal Year 2007 financial statement.[18] That subcommittee and the Senate Armed Services Subcommittee on Readiness asked GAO to determine whether DOD's plan was consistent with the Department's long-term business enterprise architecture goals and would result in obtaining sustainable progress toward addressing financial management deficiencies in key business process areas such as logistics, finance, and accounting.

The requested report, issued by GAO in September 2004, noted that DOD continued to rely on ". . . a reported 4,000 or more fundamentally flawed finance, logistics, personnel, acquisition, and other management systems to gather the data needed to support day-to-day decisionmaking and reporting."[19] The GAO report added that, "In prior years, DOD expended significant resources and billions of dollars of financial accounting adjustments to derive its financial statements. However, such statements were determined to be unauditable . . . because of weaknesses in DOD's business management systems, operations, and internal control, including an inability to compile financial systems that comply with generally accepted accounting principles."[20] The report concluded by expressing the view that achieving

[17] P.L. 107-314, 116 Stat. 2458, 2629 (2002).

[18] Government Accountability Office, *Financial Management: Further Actions Are Needed to Establish Framework to Guide Audit Opinion and Business Management Improvement Efforts at DOD: DOD Fiscal Year 2007 Audit Opinion*, GAO-04-910R, September 2004.

[19] *Id.* at 1 and 2.

[20] *Id.* at 6.

the goal of an unqualified (clean) audit opinion of a DOD financial statement for Fiscal Year 2007 was "highly unlikely."[21]

FY2005 NDAA – *Business Systems Enterprise Architecture to Cover All DOD Systems*

Section 332 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005,[22] enacted in October of 2004, repealed section 1004 of the Fiscal Year 2003 NDAA and established section 2222 of title 10 of the United States Code. Section 332 directed the Secretary of Defense, acting through the Defense Business Management Committee, not later than September 30, 2005, to develop an enterprise architecture to cover all defense business systems and functions and activities supported by those systems. These systems were required to be sufficiently defined effectively to guide, constrain, and permit implementing interoperable business solutions and to be consistent with policies and procedures established by the Director of the Office of Management and Budget and with a transition plan for implementing this architecture. The elements of this defense business architecture's composition were identical to those of the enterprise architecture in section 1004 of the Fiscal Year 2003 Act identified above. Section 332 also delegated responsibility for approving and accounting for several defense business systems to various DOD officials.

Section 352 of the Fiscal Year 2005 NDAA[23] provided that funds authorized for operation and maintenance could not be used to prepare or implement DOD's Mid-Range Financial Improvement Plan until the Secretary of Defense submitted a report to the congressional defense committees that the enterprise architecture for defense business systems and the transition plan for implementing that architecture had been developed as required by Section 332 of the bill.

December 2005—First Financial Improvement and Audit Readiness (FIAR) Plan Status Report

In 2005, the DOD Comptroller created a Financial Improvement and Audit Readiness (FIAR) Plan to coordinate efforts to improve financial management and business systems for DOD and those of its organizational components that conduct budgeting and financial management functions for their own activities (i.e., the Departments of the Army, Navy, Air Force and other major DOD components). [24] In December 2005, DOD issued the first of a series of semiannual reports on the status of the FIAR Plan.[25] That report outlined that business rules that DOD and its components would use in planning financial management improvements that would comply with the provision of the FY2002 NDAA requiring that DOD minimize the amount spent on audits until improvements were in place that would allow the department's annual financial statement to get a clean audit opinion.[26]

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[21] *Id.* at 17.

[22] P.L. 108-375, 118 Stat. 1811, 1851 (2004).

[23] 118 Stat. at 1858.

[24] The FIAR Directorate's website can be accessed at http://comptroller.defense.gov/FIAR/.

[25] Available at http://comptroller.defense.gov/fiar/documents/FIAR_Plan_Dec_2005Complete.pdf.

[26] Ibid. pp. 10-11.

FY2006 NDAA —*Obligations and Expenditures for Financial Statements Barred Until Financial Management Improvement Plan Submitted*

Section 376 of the National Defense Authorization Act for Fiscal Year 2006,[27] enacted in January of 2006, barred the Secretary of Defense, during fiscal year 2006, from obligating or expending any funds for any financial management activity relating to preparing, processing, or auditing financial statements until the Secretary submitted to the congressional defense committees a comprehensive and integrated financial management improvement plan.[28] This plan was required to describe specific actions to be taken to correct financial management deficiencies which impaired DOD's ability to prepare timely, reliable, and complete financial statements; and systematically tie these actions to process and control improvements and business systems modernization efforts described in the business enterprise architecture mandated by 10 U.S.C. section 2222. Section 376 also directed the Secretary to submit to these committees a written determination that each financial management improvement activity to be undertaken was consistent with that financial management improvement plan and was likely to improve internal controls or otherwise result in sustained improvements in DOD's ability to provide timely, reliable, and complete financial management information.

This limitation on financial management and audit initiatives, applicable during fiscal year 2006 under section 376 of the Fiscal Year 2006 Act, appears to have been made permanent in section 321 of the John Warner National Defense Authorization Act for Fiscal Year 2007,[29] enacted in October of 2006. Section 321 repeated the identical language of section 376, but omitted "during Fiscal Year 2006."

FY2010 NDAA—*Financial Statements to Be Validated as Ready for Audit by September 30, 2017*

Section 1003 of the National Defense Authorization Act for Fiscal Year 2010,[30] which became law in October of 2009, directed the Chief Management Officer of the Department of Defense,[31] in consultation with the Under Secretary of Defense (Comptroller), to develop and maintain a plan to be known as the Financial Improvement and Audit Readiness [FIAR] Plan.[32] It requires that this plan describe specific actions to be taken and costs associated with correcting financial management deficiencies that impair DOD's ability to prepare timely, reliable, and complete financial management information; and with ensuring that DOD financial statements are validated as ready for audit by not later than September 30, 2017. Section 1003 also directs that the FIAR Plan systematically tie actions described in the preceding sentence to process and control improvements and business system modernization efforts described in the business enterprise architecture and transition plan mandated by 10 U.S.C. section 2222.

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[27] P.L. 109-163, 119 Stat. 3136, 3213 (2006).

[28] By the time this legislation was enacted, DOD had established the FIAR Plan. However, 376 of the enacted bill was a modified version of Section 328 of S. 1042, the version of the FY2006 NDAA that the Senate Armed Services Committee had reported May 17, 2005, before the FIAR Plan was promulgated.

[29] P.L. 109-364, 120 Stat. 2083, 2144 (2006).

[30] P.L. 111-84, 123 Stat. 2190, 2439 (2009).

[31] Section 904 of the National Defense Authorization Act for Fiscal Year 2008, P.L. 110-181, 122 Stat. 3, 273 (2008), designated the Deputy Secretary of Defense as the Chief Management Officer of the Department of Defense, established the position of Deputy Chief Management Officer, and designated the undersecretaries of the military departments as CMOs of their respective departments.

[32] This requirement appears to have codified in law a requirement that DOD continue the FIAR Plan it had promulgated in 2005.

The FIAR Plan must establish priorities for improving DOD budgetary information to achieve an unqualified audit opinion on the Department's statements of budgetary resources. As a secondary goal, the Plan must establish priorities for improving the accuracy and reliability of management information on DOD's mission-critical assets (military and general equipment, real property, inventory, and operating materials and supplies) and validating its accuracy through existence and completeness audits. Section 1003 requires that the FIAR Plan include an interim goal of ensuring that financial statements of the Department of the Army, Department of the Navy, Department of the Air Force, and the Defense Logistics Agency each be validated as ready for audit. It also must include a schedule setting forth milestones for military department elements and financial statements to be made ready for auditing. Section 1003 also directs the DOD Comptroller to submit to the congressional defense committees semiannual reports each May and November on the status of implementing the FIAR Plan.

The joint explanatory statement accompanying the conference report to the bill enacted as the Fiscal Year 2010 Act said that a section of the House bill would have required the Secretary of Defense to develop a plan to achieve a full unqualified audit of Department of Defense by September 30, 2013, which would have been four years earlier than DOD's current plan. The Senate amendment had a provision to require the Secretary to develop a plan not later than September 30, 2017. The statement added that the House receded with an amendment to direct the Secretary to ensure that DOD financial statements be validated as ready for audit by not later than September 30, 2017, and to establish interim objectives, including those for audit readiness in each of the military departments and a schedule for military department elements and financial statements to be made ready for audit.[33]

2010 DOD and GAO Hearing Testimony

In September of 2010, the Under Secretary of Defense (Comptroller) and the Deputy Chief Financial Officer in a statement prepared for a Senate hearing acknowledged that the National Defense Authorization Act for 2010 mandates that the Department validate financial statements as ready for audit by 2017. This statement said that under current audit rules and in view of timelines to reach DOD's target business systems environment

> . . . meeting that date would likely require the expenditure of large sums of DOD dollars to acquire and improve information—especially valuation information—that is rarely useful to DOD's managers. We have concerns that the cost of recording, reporting, and auditing this historical information far exceeds any benefits it may provide.
>
> DOD agrees with the need to establish a framework that provides improved cost and management information that will support better management of our assets and also support audits of the information. We are working with OMB, Treasury, and GAO to see if there are more cost-effective ways to reach full auditability, to include considering an interim shift to a cash basis of accounting and evaluating the capabilities inherent in ERP [enterprise resource planning] systems to capture the cost of new acquisitions. Draft language in the Senate authorization bill would require DOD to perform a business case analysis to weigh the costs and benefits of auditing asset historical values and determine the most cost-effective approach to resolve this issue. We will take into account these discussions with OMB, Treasury, and GAO in responding to this congressional request.[34]

[33] H. Rept. 111, 288, 111th Cong., 1st Sess. at 801 (2009), accompanying H.R. 2647. *See also* H. Rept. 111-166, 111th Cong., 1st Sess. at 393-394 (2009), accompanying H.R. 2647; and S. Rept. 111-35, 111th Cong., 1st Sess. at 169 (2009), accompanying S. 1390.

[34] *Improving Accountability at the Department of Defense: Hearing Before the Subcomm. on Federal Financial Management, Government Information, Federal Services, and International Security of the Comm. Senate Comm. on Homeland Security and* (continued...)

In a statement prepared for the same hearing, a Government Accountability Office official said that while the National Defense Authorization Act of 2010 made the Financial Improvement and Audit Readiness (FIAR) Plan a statutory mandate, the DOD Comptroller established the FIAR Directorate administratively in 2005 to develop, manage, and implement a strategic approach to achieve auditability and address the Department's business systems weaknesses. The Directorate, which followed earlier departmental efforts in 1998 and 2003, issued the first DOD FIAR Plan in December of 2005. The GAO official observed that none of the military services have received clean audit opinions of their financial statements, but some DOD components such as the Army Corps of Engineers, the Defense Finance and Accounting Service, the Defense Contract Audit Agency, and the Department of Defense Inspector General have received clean audit opinions.[35]

This official noted that DOD has identified ten enterprise resource process systems (ERP) and has said that as of December of 2009 the Department had invested $5.8 billion in them. One of these systems has been fully implemented and some others have been partially implemented. DOD intends to invest billions more fully to implement the other nine. The GAO official said that DOD has indicated that full implementation of all of these systems will replace over 500 legacy systems and cost millions to operate annually.[36]

The official added that improved budgetary and asset accountability information to be derived from these systems is an important step in demonstrating incremental progress, but "will not be sufficient to achieve full statement auditability. Additional work will be required to ensure that transactions are recorded and reported in accordance with generally accepted accounting principles. At this time it is not possible to predict when DOD's efforts to achieve audit readiness will be successful."[37]

FY2011 NDAA – *Establish Interim Milestones Toward Audit Readiness and Review Incentives for DOD Components*

The first version of the FY2011 NDAA passed by the House (H.R.5136) included two provisions intended to provide incentives for DOD components to meet or beat the 2017 deadline for producing auditable financial statements. In Part D of the House bill, Section 301 would have authorized the DOD Comptroller to afford various types of preferential treatment to any DOD component that was prepared to pass an audit prior to the deadline of 2017 set by the FY2010 NDAA. Among the types of preference the House-passed FY2011 bill would have authorized for an early-to-audit-ready component were: priority in the release of appropriated funds; relief from DOD requirements for more frequent financial reports than were required by law; access for financial and business management personnel in the component to a

(...continued)

Governmental Affairs, 111th Cong., 2d Session, Sept. 29, 2010, prepared statement of the Honorable Robert F. Hale, Under Secretary of Defense, Comptroller, and the Honorable Elizabeth A. McGrath, Deputy Chief Management Officer, Department of Defense.

[35] Government Accountability Office, *Department of Defense: Financial Management Improvement and Audit Readiness Efforts Continue to Evolve*, GAO-10-1059T, September. 2009, prepared testimony of Asif A. Khan, Director, Financial Management and Assurance, Government Accountability Office.

[36] *Id.* at 16. *See id.* at 2, n. 4 for a definition of an ERP solution—"an automated system using commercial off-the-shelf (COTS) software consisting of multiple integrated functional modules that perform a variety of business related tasks such as general ledger accounting, payroll, and supply chain management." *See also id.* at 28, for descriptions of DOD's ERPS such as the Defense Enterprise Audit and Management System, General Fund Enterprise Business System, and the Navy Enterprise Resource Process System.

[37] *Id.* at 12.

larger share of the bonus pool available to civilian DOD employees and higher rates of promotion for those managers.

By the same token, Section 302 of Part D of the House-passed bill would have required the Secretary of Defense to penalize in various ways DOD components that failed to meet the 2017 deadline for producing an auditable statements. Among the penalties that would have been required were: development of a mediation plan to meet the requirement within one year, delay of release of appropriated funds to the component until the Secretary is sure it will meet the requirement within that one-year period, and "specific consequences for key personnel in order to ensure accountability within the leadership of the component."

The Senate-passed version of the FY2011 NDAA included no comparable language. However the enacted version of the FY2011 authorization bill (H.R. 6523) included Section 881[38], elements of which are similar to the House-passed provisions. Section 881(a) requires the DOD Comptroller to establish for each component of the department interim milestones they would meet on the way to producing auditable financial statements by September 30, 2017.

For each component, the Comptroller is to establish at least two interim milestones:

- "for achieving audit readiness for each major element of the statement of budgetary resources, including civilian pay, military pay, supply orders, contracts, and funds balance with the Treasury," and
- "for addressing the existence and completeness of each major category of Department of Defense assets, including military equipment, real property, inventory, and operating material and supplies."

Section 881(c) requires that for any DOD component unable to meet one of the established interim milestones, the Comptroller prepare a remediation plan to ensure that the milestone will be met not later than one year after the original target date.

The two other parts of Section 881, echo the House-passed provisions, although they require DOD to study the advisability of several of the incentives that the House bill would have mandated:

- Section 881(b) of the enacted bill requires the Comptroller to weigh the costs and benefits of alternative approaches to the valuation of Department of Defense assets so they can be reflected in an auditable financial statement, selecting an approach that is "consistent with principles of sound financial management and the conservation of taxpayer resources," and preparing a business case analysis to support the choice.
- Section 881(d) requires the Comptroller to review various options for providing incentives to DOD components and their financial managers to ensure that the components meet the 2017 deadline for producing an auditable financial statement.

[38] P.L. 111-383, 124 Stat. 4137, 4306 (2010).

May 2011 FIAR Plan Status Report – *Proposed Incentives Dropped; Changed Weapons Systems Valuation Rules Proposed*

According to the 11th semiannual FIAR Plan Status Report[39], issued by the DOD Comptroller in May 2011, DOD spent $1.57 billion in FY2010 to carry out the FIAR Plan and had budgeted for that purpose $1.87 billion in FY2011 and $1.80 billion in FY2012. Roughly 90 percent of each year's total was dedicated to acquiring and improving DOD's financial management systems so they will become technically capable of producing an auditable financial statement. Most of the balance of the FIAR-related funding in each year is to organize and scrub the myriad streams of data that feed into DOD's financial management system. The totals also include small amounts ($21 million in FY2011 and $23 million in FY2012) to hire outside auditors to audit DOD financial statements.

The Status Report noted that six DOD components, with total budgetary resources of $96 billion in FY2010, had received unqualified audit opinions on their FY2010 financial statements. It also reported that the Army, Air Force and Marine Corps would be ready to undergo an audit of certain accounting reports that feed into the services' overall financial statements.

The DOD Comptroller also reported that the Department had considered and rejected three of the options proposed in the FY2011 NDAA to provide bureaucratic incentives for DOD components to meet the 2017 deadline for producing an auditable financial statement. The options considered, but rejected as "not useful or needed," were proposals to to give components that meet or beat the deadline (1) priority in the release of appropriated funds; (2) relief from DOD-mandated reporting requirements not required by law, and (3) relief from DOD-imposed spending thresholds that are more restrictive than required by law.

Pursuant to the FY2011 NDAA, the May 2011 status report also reported on DOD's assessment of alternative methods for assigning values to "mission critical assets" (weapons systems, real property, supply inventories and the like) for the purpose of incorporating them into an annual financial statement. For real property and most other tangible items, the report recommended that DOD base its financial reports on the historic cost of existing assets while recording for newly acquired assets the type of data on acquisition cost and depreciation that would meet established auditing requirements.

For weapons systems, however, the report contended that conventional "balance sheet" reporting was inappropriate for several reasons, among which were the following:

- Weapons systems are acquired through complex transactions that may involve hundreds of contracts and contract modifications (plus large amounts of government-furnished equipment) and several upgrades over the service life of a system that typically runs upwards of two decades.
- DOD financial reporting systems do not capture costs in a way that is consistent with federal accounting standards.
- The valuations that are assigned to weapons systems on the basis of their "capitalized cost" so they can be incorporated into DOD's financial statement are used only for that purpose and are not used to inform DOD decision-making.
- The objectives of financial reporting requirements can be met by (1) audits of DOD's statement of budgetary resources and (2) so-called "existence and completeness" audits

[39] http://comptroller.defense.gov/FIAR/documents/FIAR_Plan_May_2011.pdf.

> of military equipment without incurring the cost of tracking the "capitalized cost" of weapons systems for incorporation into an auditable financial statement.

The Comptroller recommended that the Federal Accounting Standards Advisory Board (FASAB), which promulgates accounting rules for federal agencies, revise its rules to allow DOD to record the cost and status of weapons systems in ways that do not require the agency to calculate a valuation that would be incorporated into DOD's financial statement. DOD's argument is that this would allow it to forego the cost of preparing data that is not used in management of the agency. This proposal would reinstate the way DOD tracked the cost and status of weapons prior to an FASAB decision in 2003.

Pending Versions of the FY2012 NDAA – *Credentialing Standards for DOD Financial Managers*

The version of the FY2012 NDAA passed by the House on May 26, 2011 (H.R. 1540) includes two provisions intended to enhance the proficiency of DOD financial managers, 60 percent of whom – according to the House Armed Services Committee report on the bill – hold job classifications other than auditing, accounting and financial management.[40] One provision (Section 1061) would require DOD to establish a training and certification program for financial managers. The other provision (Section 1063) would require DOD's Chief Management Officer (currently the Deputy Secretary) to assess the financial management and budgetary competence of the agency's financial managers and to draw up a plan to remediate any skill gaps that are identified.

The House bill also would require a more detailed explanation of the "interim milestones" toward audit readiness that are required by the FY2011 NDAA (Section 1066b). Another provision of the House bill (Section 1067) would require submission of a plan to correct any deficiencies in execution of the FIAR Plan.

The version of the FY2012 NDAA reported by the Senate Armed Services Committee on June 22, 2011 (S. 1253) also includes a provision (Section 1003) that would authorize the Secretary of Defense to prescribe professional certification and credentialing standards for DOD financial managers.[41]

[40] H.Rept. 112-78, House Armed Services Committee, Report to Accompany H.R. 1540, *National Defense Authorization Act for FY2012*, p. 215.

[41] S Rept. 112-26, Senate Armed Services Committee, Report to Accompany S. 1253, *National Defense Authorization Act for FY2012*, p. 173.

PREPARED STATEMENT BY SENATOR CLAIRE MCCASKILL

The Readiness and Management Support Subcommittee meets today to address the issues of financial management and business transformation at the Department of Defense (DOD). We are pleased to be joined by the Hon. Robert F. Hale, the DOD Comptroller; the Hon. Elizabeth A. McGrath, the DOD Deputy Chief Management Officer; the Comptrollers of the three Military Departments; and Asif A. Khan, Director of Financial Management and Assurance at the Government Accountability

Office (GAO). Welcome to all of you, and thank you for your participation in this important hearing.

The Government Accountability Office first designated DOD financial management as a "high risk" area in 1995, as a result of "pervasive financial and related business management systems and control deficiencies." These deficiencies, GAO reported, have adversely affected the Department's ability to control costs; ensure basic accountability; anticipate future costs and claims on the budget; measure performance; maintain funds control; prevent and detect fraud, waste, and abuse; address pressing management issues; and prepare auditable financial statements.

Over the last decade, this committee has initiated a series of legislative provisions designed to address these problems, as recommended by GAO. Unfortunately, we continue to hear reports that soldiers in the field have received the wrong paychecks; that the Department cannot account for expenditures of billions of dollars in Iraq and Afghanistan; and that DOD cannot reliably determine the number of contractors it employs. Before leaving office earlier this month, Secretary Gates likened his efforts to find efficiencies and reduce waste in the Department to "something akin an Easter egg hunt." He stated: "My staff and I learned that it was nearly impossible to get accurate information and answers to questions such as 'How much money do you spend?' and 'How many people do you have?"

The underlying problem is that DOD's financial management systems are riddled with decades-old problems that are difficult to reverse. As GAO recently explained:

> "[T]he DOD systems environment that supports [its] business functions is overly complex and error prone, and is characterized by: (1) little standardization across the department, (2) multiple systems performing the same tasks, (3) the same data stored in multiple systems, and (4) the need for data to be entered manually into multiple systems. . . . According to the department's systems inventory, this environment is composed of 2,258 business systems and includes 335 financial management, 709 human resource management, 645 logistics, 243 real property and installation, and 281 weapon acquisition management systems."

The Department is endeavoring to address these problems by information for management decisions. Unfortunately, these programs have not lived up to expectations. The FIAR plan itself indicates that all three Military Departments have already missed deadlines on the implementation of their enterprise resource planning (ERP) systems. Last year, GAO reported that six of DOD's nine largest ERPs had experienced schedule delays ranging from 2 to 12 years and incurred cost increases ranging from $530 million to $2.4 billion—in significant part because of the Department's failure to follow good management practices.

Similarly, the DOD Inspector General (IG) reported last month that the Army's General Fund Enterprise Business System (GFEBS) program is at "high risk of incurring additional schedule delays, exceeding planned costs, and not meeting program objectives" as a result of inadequate planning and integration efforts. Even if GFEBS is deployed in a timely manner, the IG reported, it may not meet the Army's financial management objectives. In particular, the IG reported that the Army has not adequately planned for data conversion from existing systems to GFEBS, failing completely to address the conversion of historical transaction data and the conversion of data from 49 non-Army systems. According to the IG, these flaws mean that even if the Army fully deploys GFEBS in a timely manner, the Army will not be able to achieve its objective of auditable financial statements.

I am deeply concerned that the shortcomings documented by the IG in the Army's GFEBS program are symptomatic of problems with other ERP systems and that these problems will undermine the Department's efforts to address its financial management issues and achieve an auditable financial statement by 2017.

Sound financial systems and good data are critical to our efforts to provide efficient management, save money, and ensure accountability at the Department of Defense. We simply have to do better.

Senator MCCASKILL. I will now turn the microphone over to Senator Ayotte if she would like to make an opening statement.

STATEMENT OF SENATOR KELLY AYOTTE

Senator AYOTTE. Thank you very much, Madam Chairman.

I want to welcome our witnesses and thank them for appearing today.

I understand that this is the first hearing the Senate Armed Services Committee has held on defense financial management and

business transformation in several years. So I want to thank the chairman for scheduling this meeting.

This hearing goes to the heart of the fiscal crisis that faces our Nation. As Admiral Mullen has said, the greatest threat to our national security is our national debt. We need to work to address that fiscal crisis, and obviously, with what we are looking at on a national level, DOD needs to be included in that process.

We have to closely scrutinize every single Federal agency, including DOD, to identify and eliminate wasteful or duplicative programs. However, as we reduce defense spending, we must ensure that those reductions do not undercut our warfighters or endanger our readiness for future contingencies.

To distinguish between necessary defense budget cuts and cuts that would harm our troops and damage readiness, we must have reliable financial data and effective business processes and systems in place. Unfortunately, DOD is one of the few agencies in the entire Federal Government that cannot pass an independent audit of its finances. I am skeptical whether DOD will even be ready for an audit by 2017, as required by the law.

DOD's inability to be audited could limit its ability to successfully implement management controls and efficiency initiatives, achieve savings, and redirect increasingly scarce defense dollars to the higher priorities.

Shortly before Secretary Gates left office, he publicly expressed frustration that his efforts to find efficiencies and reduce wastes were "something akin to an Easter egg hunt." He explained: "My staff and I learned that it was nearly impossible to get accurate information and answers, such as 'How much money do you spend?' and 'How many people do you have?'"

In light of the fiscal crisis we are confronting and the many proposals to cut defense spending, these are questions that we must be able to answer. I am encouraged that Secretary of Defense Leon Panetta has said that making DOD auditable is a top priority and that he will look into actually accelerating the current timetable for achieving this important goal.

But it is important to remember that the auditable financial statement is not really the desired objective. It is a means to a more important end. DOD must be auditable and we must have reliable financial data so that we can be responsible stewards of the taxpayers' dollars and so that we can ensure that every dollar supports our warfighters and improves our military readiness.

Let there be no doubt, careful investment in financial management can save money. The Defense Information Systems Agency (DISA), for example, has returned $10 for every $1 spent on financial improvement. The Marine Corps has achieved $3 for every $1 invested in improved financial management.

Senator Tom Coburn estimates, as the chairman has mentioned and, of course, introduced the document that CRS produced, and I want to commend her for doing that. It is a very important document. Senator Tom Coburn estimates that DOD could realize at least $25 billion in savings each year for the next 10 years through improved financial management.

In preparing for this hearing, staff polled several experts inside and outside of Government regarding the most significant struc-

tural impediments to improving financial management and business processes and systems at DOD. There seems to be a consensus regarding the leading impediments to improving financial management, and that is some of these impediments include unclear lines of authority, a workforce not sufficiently trained in key components of financial management, as well as potentially ineffective accountability and oversight.

There are also potential problems related to enterprise architecture and investment controls as well as, the chairman has mentioned, with the implementation of the ERP systems. Here are some important questions I hope to address at this hearing.

Do those leading DOD's financial improvement efforts have the authority needed to influence the Service Secretaries and military chiefs, as well as other political appointees within DOD, to ensure that what is required to succeed actually gets done?

How well are current oversight mechanisms within DOD functioning?

Is DOD's financial management workforce sufficiently trained and certified in accounting, well-versed in Government accounting practices and standards, and experienced in relevant information technology?

Is DOD's FIAR plan on a path to succeed?

I am troubled by cases where we are spending billions of dollars on ERPs that accomplish little more than lining the pockets of contractors who are hired to integrate them into DOD. In a few high-profile cases, new systems have come online at considerable expense to the taxpayers, but the relevant entities are still unable to pass an audit. Every dollar must be spent deliberately and carefully to achieve the desired objective.

Thank you, again, Madam Chairman, for calling this important hearing. I look forward to hearing from the witnesses, and I look forward to working together to improve financial management at DOD. Improved financial management will help us make the tough decisions we need to make, eliminate waste, and support our warfighters.

I want to thank all of you for being here today.

Senator MCCASKILL. Since this topic is rather dry, and typically, we don't have hordes of Senators show up, I want to particularly comment on both Senator Cornyn and Senator Begich being here. I had not planned on giving anyone else an opportunity to make an opening statement, but I am so proud of you for showing up——[Laughter.]

I want to give both of you an opportunity, if you would like, to make a few comments on the record.

Senator Cornyn.

Senator CORNYN. Madam Chairman, thank you for having this very important hearing.

I am called away to the Judiciary Committee to introduce a Texan who is being nominated for a judicial office. So I am going to be leaving now, and I will come back.

I have some questions for the witnesses, but no opening statement.

Thank you for the opportunity.

Senator MCCASKILL. Thank you, Senator.

Senator Begich.

Senator BEGICH. I am glad we could surprise you, Madam Chair. That is always good. [Laughter.]

But I really don't have any opening statement. I am anxious for the testimony. You have a great lineup, as I saw when I decided to be able to make it over here for at least an hour, I think, I can be here for.

Senator MCCASKILL. Great.

Senator BEGICH. So I look forward to it.

Thank you.

Senator MCCASKILL. Thank you, Senator.

We will start with Secretary Hale.

STATEMENT OF HON. ROBERT F. HALE, UNDER SECRETARY OF DEFENSE, COMPTROLLER; ACCOMPANIED BY HON. ELIZABETH A. MCGRATH, DEPUTY CHIEF MANAGEMENT OFFICER, DEPARTMENT OF DEFENSE

Mr. HALE. Good afternoon, Madam Chairman, Senator Ayotte, and Senator Begich.

Thank you for the opportunity to discuss financial management at DOD. Secretary Panetta, as you have said, our new Secretary of Defense, my new boss, shares your interest in financial management, shares my interest in financial management improvements, and has asked that I provide him a comprehensive review of our efforts. I look forward to his personal guidance.

To bring you up-to-date on our progress and also our continued challenges, DOD's Deputy Chief Financial Management Officer (DCMO), Ms. McGrath, and I have prepared a joint statement. I am going to summarize it briefly for the both of us, and then we will turn to the service financial management (FM) executives.

The first thing to note is that as we work to meet national security objectives, DOD financial management has its strengths. I know that is not popular, but I believe it is true.

For one thing, I think it is effective in getting the financial resources that we need to our warfighters, and I view that as my primary job. We do have a dedicated workforce, I think a reasonably well-trained one—let us talk more about that later—more than 60,000 financial management professionals who bring a culture of stewardship, certainly my experience for 7 years in the Air Force, a culture of stewardship to their jobs.

We have effective processes in some key areas. As a result, violations of key financial laws are few. Much better, I might add, than in the non-defense agencies. Timely and accurate payments are the rule. Again, much better than in the non-defense agencies, and interest associated with late payments is low.

We have also made progress on an issue that is of concern to me—I have been working on it for several decades as a professional—and I know to you, improving financial information and moving toward audit readiness. We have auditable financial statements in a couple of large organizations, particularly in the Army Corps of Engineers, several of the large defense agencies, and several of our large trust funds.

But it is also clear that our greatest audit challenges lie ahead, especially the need to move the Military Services to auditability.

We really have been picking around the edges of this problem, to some extent. We have to turn to them because they are the key issue. In addition, there are enterprise-wide weaknesses in DOD financial management, without question, and they require an enterprise-wide response.

To pass an audit, an organization needs systems and processes that record financial results of business events in a consistent and reliable manner. Our current business environment does not always meet that standard. Many of our systems are old, and they weren't designed to handle information that supports audit standards.

The issue is even more challenging because of DOD's enormous size and geographical dispersion, which makes a manual solution of these problems almost impossible. Some of the smaller independent agencies have been able to do that. We simply can't.

To deal with these enterprise challenges and to improve financial information and achieve audit readiness, we have revised the approach that DOD has used in the past. It wasn't working, I think we can all agree.

Since August 2009, our emphasis has been improving the quality of data and moving toward audit readiness for the information that we use every day to manage DOD. Specifically, budgetary information and existence and completeness of assets. Knowing where our assets are and how many we have.

We have also put in place a cost-effective approach to dealing with the other information that is needed to move toward full auditability. Less than 2 years have passed since we launched this new approach. I call it the focused approach. I can tell you that financial auditability is now readily acknowledged as a high priority in DOD. I think it will be even a higher priority under my new boss.

We have made some noteworthy changes, I think, that are moving us in the right direction. We have a clear governance process headed by our DOD CMO, Deputy Secretary, and supported at the Office of the Secretary of Defense (OSD) level by me, the Chief Financial Officer (CFO), and the DCMO, and by the Service FMs and the Service DCMOs.

We have established long-term and, particularly importantly, short-term goals which are actively managed by our governance bodies. We have ensured that each Military Department has programmed adequate resources to support this focused strategy over the entire Future Years Defense Plan.

We now require, and I think this is important, that senior executive performance appraisals for both financial and nonfinancial personnel include financial and audit goals where that is relevant to them. We are assembling teams within each Military Department that will be tasked with improving financial controls because we need to do that if we are going to be successful.

We are establishing a course-based certification program for our defense financial managers that will give us a framework like they have in the acquisition workforce so that we can require certain courses of our personnel and ensure, for example, that they have training in accounting and auditing. We have maintained a close working relationship with our oversight bodies, including GAO and

the DOD IG. I have personally briefed Gene Dodaro, the Comptroller General, and Gordon Heddell, the DOD IG.

In addition, we have focused our improvement on improvements in business systems, and I know you are particularly interested in these. Our goal is a streamlined systems environment made up of information technology (IT) capabilities that work together to support effective and efficient processes and operations.

Ms. McGrath, the DCMO, has the lead for OSD. The Services and agencies are managing overall implementation. We are focusing our system efforts in three areas—improvements in acquiring and implementing IT systems, including those, implementing those ERPs, that word you don't like, Madam Chairman; reducing required data exchanges and system-to-system interfaces while increasing standardization; and use of business enterprise architecture, which provides data standards, business rules, performance metrics, and standard system configurations.

In addition to procedural changes, though, we are actually doing something. We are actually moving and taking tangible steps toward auditability of the service statements that big boys use in the audit world. We have launched an audit of the Marine Corps statement of budgetary resources. If successful, this would be the first time that any military Service has completed an audit of a financial statement.

In May, we began a DOD-wide examination and validation of our funds control and distribution process, known in audit terms as appropriations received. This is being done by an independent public accounting firm. I expect that this validation will yield a positive opinion in August, and periodic validations of our appropriations received will demonstrate to Congress and to me that we are controlling our funds carefully and in ways that ensure we comply with the laws that you enact.

In June, we began a validation by a public accounting organization of the Army's organization and bases that have implemented their ERP, the GFEBS. This will identify any areas that must be improved to ensure that we are using the system in a manner that is auditable. I don't want to get these things deployed throughout DOD and find out that we aren't going to achieve our goal.

In July, we tasked a public accounting firm to validate the Air Force's processes and controls to reconcile their accounts with Treasury, essentially their checkbook with Treasury. It is called Funds Balance with Treasury.

By the end of the calendar year, we expect to begin several other validation efforts, including the accounts and locations of large portions of our military equipment. In short, there is a lot still to do. I make no bones about it. We have a long way to go, but I think we are making progress.

I believe we do have a plan. We are committed to improving financial information and achieving audit readiness in DOD. Our goal is to achieve auditable financial statements by 2017.

Madam Chairman, this concludes my opening statement. I believe we will turn to the Service FMs now, and then we will be glad to answer your questions.

[The joint prepared statement of Mr. Hale and Ms. McGrath follows:]

JOINT PREPARED STATEMENT BY HON. ROBERT F. HALE AND HON. ELIZABETH A. MCGRATH

Chairman McCaskill, Senator Ayotte, members of the subcommittee, thank you for the opportunity to testify today concerning financial management at the Department of Defense (DOD) and our ongoing efforts to improve financial operations. We should note that this is an area of interest to our new Secretary of Defense. Secretary Panetta has asked us to join with other Department leaders to review our plans for financial improvement and report back to him with any suggested improvements.

From our perspective, there are two principal reasons for striving to make DOD as efficient and effective a manager as possible. The first is to ensure that America's service men and women have the resources they need to carry out their mission. The second reason is to satisfy our duty as stewards of the resources entrusted to us by the taxpayers.

As Members of the U.S. Senate, you have a great interest in both purposes. Moreover, your oversight and interest in this subject is a great help to us as we go forward.

BACKGROUND AND CONTEXT

As we pursue these dual goals, we rely on the support of a dedicated professional work force of approximately 60,000 financial management personnel, who provide our warfighters with the resources and financial services they need to meet national security objectives in every area of the world, including Afghanistan and Iraq. We know that you appreciate their efforts as much as we do.

Today, the Department has effective financial processes in many key areas. As a result, our violations of the key financial laws are quite low, timely and accurate payments are produced in a very high percentage of cases, while interest payments have been dramatically reduced.

In fact, there has been significant progress toward improving financial information and audit readiness in several entities. For example, the Army Corps of Engineers has fully auditable financial statements and is maintaining them. Several Defense Agencies maintain auditable statements including the Defense Finance and Accounting Service and the Defense Contract Audit Agency. Several large trust funds managed by DOD are also auditable.

At the same time, it is clear that the most daunting challenges remain ahead, particularly the challenge of moving the Military Services toward auditability. Moreover, we know that there are enterprise-wide weaknesses in DOD financial management, and they demand an enterprise-wide business response. The lack of auditable financial statements for DOD as a whole reflects those weaknesses.

The challenge is more daunting because of DOD's enormous size and geographical dispersion. For example, we obligate an average of $2 billion to $3 billion every business day and handle hundreds of thousands of payment transactions. These financial transactions take place in thousands of locations worldwide, including war zones. Given our size and mission requirements, we are not able to deploy the vast numbers of accountants that would be required to fully meet audit standards.

To pass an audit, an organization is required to have a business environment—including systems and processes—that record the financial results of business events (such as contract signing) in a consistent and reliable manner. Our current business environment does not always meet that standard. Many of our systems are old and handle or exchange information in ways that do not readily support current audit standards. They were designed decades ago to meet budgetary rather than proprietary accounting standards. They tend to be non-standard and sometimes do not include strong financial controls. In these cases, the consistent application of internal controls becomes critical. Many of the legacy systems also do not record data at the transaction level, a capability essential to audit success.

AN ENTERPRISE-WIDE RESPONSE

To address these enterprise-wide issues, we have put in place a strong governance model. As the Department's Chief Management Officer (CMO), the Deputy Secretary is responsible for Department-wide business operations and management issues. He is supported in this by the Deputy Chief Management Officer (DCMO).

The Under Secretary of Defense (Comptroller) (USD(C)) and Chief Financial Officer is responsible for financial management policy and operations for the Department. He has the lead in efforts to improve financial information and audit readiness. But the Comptroller organization cannot improve financial management on its own. The Department will achieve its financial management goals only through an

active partnership involving both the Comptroller and the DCMO. We must also have help from those in acquisition, logistics, and other business areas, as well as the business communities that reside in the Military Departments.

To inject this holistic, integrated way of thinking into the existing fabric of defense management, the DCMO has established a framework for organizing our Business Enterprise Architecture (BEO), business processes, and systems environment into essential end-to-end business processes, such as Budget-to-Report, Order-to-Cash, and Procure-to-Pay. This enterprise-wide approach is building the future business processes and systems environment of DOD, with audit readiness and management information in mind.

IMPROVING THE QUALITY OF THE INFORMATION WE USE EVERY DAY

To deal with these enterprise challenges—and to improve financial information and achieve audit readiness—we revised our approach from those pursued by DOD in the past.

Our strategy revision was shaped by senior leaders in the Comptroller and DCMO organizations and in the Military Departments and Defense agencies. We also solicited input from the Office of Management and Budget, the Government Accountability Office (GAO), and congressional staff.

In August 2009, we issued a memorandum outlining the new approach, which emphasizes improvements in the quality, accuracy, and reliability of the financial and asset information that we use every day to manage the Department. This approach leads to our current concentration on areas that are most important to defense managers while holding down costs in a period of budgetary constraints. Specifically, we are working on two types of information—budgetary information and existence and completeness of assets.

Budgetary information is critical to leadership at all levels, as people make operational and resource allocation decisions. Our new approach on improving budgetary information will lead to audit readiness for our Statements of Budgetary Resources (SBR).

We are also focusing on the accuracy in the numbers and locations of our mission critical assets. The financial audit elements of "existence and completeness" translate directly into knowing "what we have" and "where it is," so we can use the equipment in combat and ensure that our acquisition organization is buying only what DOD needs.

We have not ignored other efforts necessary to achieve fully auditable statements. This spring we completed a business case analysis that was required by key stakeholders and included as a provision in the National Defense Authorization Act (NDAA) for Fiscal Year 2011. This analysis provides a roadmap to a cost-effective way for achieving auditability for financial statements beyond the SBR.

The NDAA for Fiscal Year 2010 and subsequent acts accommodated our new approach to financial improvement and audit readiness. We appreciate the support of Congress and remain committed to have fully auditable statements by 2017.

SYSTEM IMPROVEMENTS ARE CRITICAL TO SUCCESS

To achieve and sustain auditable financial statements, even using this new approach, we must improve our financial systems.

To accomplish this, we must orient the DOD around end-to-end business processes that support audit goals, implement Enterprise Resource Planning (ERP) systems, leverage those investments to the maximum extent practicable, modernize legacy systems when necessary and supported by a business case, and also aggressively sunset legacy systems that are obsolete, redundant, or not aligned with our business objectives. Our goal is to deliver a streamlined, 21st-century systems environment comprised of IT capabilities that work seamlessly together to support effective and efficient business processes and operations. The DCMO and the Military Department CMOs play an integral role in the governance processes overseeing the implementation of these systems and the processes they enable.

We are focusing on three key areas:

First, we have taken steps to improve our current approach to acquiring and implementing IT systems, particularly in the business domain. Important revisions to the Department's standard acquisition process will be included in an update to the DOD Instruction 5000.2, "Operation of the Defense Acquisition System," for IT systems. These revisions will include an improved acquisition model for our defense business systems, called the Business Capability Lifecycle, which is in use today for a growing number of programs and is an essential pilot effort for our broader IT reform effort. The Deputy Secretary has made clear that one of his highest manage-

ment priorities is improving the acquisition, development, and fielding of IT systems.

Further, in addition to improving acquisition policy, the Department is working to improve specific acquisition outcomes of its business Major Automated Information System programs through more rigorous acquisition oversight and investment review. The Department is more closely tying business outcomes to acquisition milestones and specifically requiring that individual programs, such as Army's General Fund Enterprise Business System (GFEBS) and Navy ERP, define the role that they play in their organizations' auditability efforts and end-to-end processes. For example, in the last GFEBS Acquisition Decision Memorandum, signed June 24, 2011, we explicitly required that GFEBS:

- Obtain the USD(C) and DOD DCMO approval of the end-to-end process and system portions of the Army plan to achieve audit readiness by September 2017 as defined in Financial Improvement and Audit Readiness (FIAR) Guidance. Specifically, the Army plan must address the GFEBS role in achieving audit readiness in the work products defined in phases 1 and 3 of the FIAR Guidance Methodology.
- Obtain USD(C) concurrence that the end-to-end business systems and processes within Army control support auditable financial statements where GFEBS has been implemented and integrated. The USD(C) will rely on the opinion of an independent public accounting firm expressed in an examination of the Army audit readiness assertion of a GFEBS entity currently planned for December 31, 2012 and will allow for remaining minor system and process enhancements scheduled for completion within 12 months.

Second, we are defining a target systems architecture that is modeled on the premise of end-to-end business processes and uses the capability inherent in our ERP systems to the maximum extent practicable. This will minimize the number of required data exchanges and system-to-system interfaces, thus reducing the potential for error. It will also increase the degree of process standardization and cut down on unnecessary software development.

Third, we will continue to guide our system investments using the BEA, which defines the necessary data standards, business rules, performance metrics, and standard system configurations that will allow our systems to be interoperable. This, along with our Enterprise Transition Plan, will ensure that when data is exchanged between systems, it happens securely and maintains the integrity of the data.

Improved systems alone, however, will not eliminate our weaknesses or guarantee auditable statements. Achieving auditability requires that we apply a consistent level of process controls that cross organizations and functional areas. Business and financial information that is passed from system to system must also be subject to a control environment to ensure that only authorized personnel are using the system and that these systems protect the data quality and maintain a compliant audit trail within the end-to-end business process. This process must be controlled at the transaction level, from the source to the general ledger postings, accurate trial balances, and reliable period closeouts. Only by completing these steps can we prepare financial statements that an auditor can cost-effectively review and verify. Many elements of our current business environment must be changed to allow us to meet financial audit standards. In the midst of two wars and numerous military operations, implementation of our new approach will continue to be a major challenge.

WHERE WE ARE TODAY

Less than 2 years have passed since we took stock of our previous efforts and decided on new priorities designed to bring the various functional communities together to work toward the common goal of financial auditability. Financial auditability is now accepted as a high priority for the Department. To move forward with our new, focused approach, we have made many changes:

- We established a clear governance process with the Department's CMO in the lead and the USD(C) and DCMO playing key roles.
- We established clear but flexible guidance, so the components can prepare to assert audit readiness by developing detailed plans for their discovery and remediation efforts.
- We have engaged the Department's CMO (the Deputy Secretary), as well as the Military Department CMOs (Under Secretaries) and the Service Vice Chiefs, in a personal commitment to support our goals.
- We have ensured that each Military Department has programmed adequate resources to move forward with this strategy.

• We established a clear and meaningful linkage between major business system investments and the goals of financial auditability.
• We are requiring Senior Executive performance appraisals to include financial audit goals among their criteria, including functional business areas that generate business events with financial impact. This key initiative will help establish audit requirements in business areas outside comptroller.
• We have begun efforts to establish a course-based certification program for defense financial managers that will permit us to emphasize education in key areas including auditability.
• We are assembling teams within each Military Department that will be tasked with improving financial controls.
• We have maintained a close working relationship with key stakeholders and oversight bodies, including GAO and the Department's Inspector General.

While we have made or are making many process changes, we also recognize that we must demonstrate specific progress to reassure ourselves, and Congress, that we are actually moving toward auditable financial statements. To that end, we launched an audit of the Marine Corps' Statement of Budgetary Resources. If successful, this would be the first time that any Military Service has completed an audit of a financial statement. We have already learned a great deal from this effort, and we believe that it will lead to a positive audit opinion.

We are also undertaking a number of other efforts to validate and demonstrate progress. In May of this year we began a DOD-wide examination and validation of our funds control and distribution process (known in audit terms as "appropriations received") by a public accounting firm. Periodic validation of appropriations received will demonstrate to Congress that we are controlling our funds carefully and in ways that ensure we comply with the laws you enact. In June we began a public accounting firm validation of the Army's organizations and bases that have implemented the GFEBS business environment, a key effort to ensure that this new system is being used in a manner that is auditable. In July we began a public accounting firm validation of the Air Force's processes and controls to reconcile their accounts with Treasury. This "checkbook reconciliation" is a key building block to auditable financial statements. By the end of this calendar year we expect to begin several other validation efforts including validations of the counts and locations of large portions of our military equipment.

CONCLUSION

In sum, we recognize the challenges associated with improving financial information and achieving audit readiness at DOD. To meet that challenge, we have developed a workable and promising partnership between the CFO and DCMO communities that will help with implementation. We have also implemented a new, focused approach that includes near-term goals, in addition to the long-term goal of achieving auditable statements by 2017.

As we mentioned at the outset of this statement, we are also currently reviewing plans for financial management improvement at the request of Secretary Panetta. We will report back to him and solicit his guidance about future initiatives.

We would conclude by emphasizing that we are personally committed to this effort as part of our overall commitment to providing the financial resources and business operations necessary to meet our national security objectives.

Senator MCCASKILL. Thank you very much, Secretary Hale.

Secretary—is it Matiella?

Ms. MATIELLA. Matiella.

Senator MCCASKILL. Secretary Matiella.

STATEMENT OF HON. MARY SALLY MATIELLA, ASSISTANT SECRETARY OF THE ARMY, FINANCIAL MANAGEMENT AND COMPTROLLER

Ms. MATIELLA. Thank you.

Madam Chairman, Senator Ayotte, members of the subcommittee, thank you for the opportunity to testify today regarding financial management in the U.S. Army and our commitment to achieving auditable financial statements.

Secretary McHugh, Chief of Staff Dempsey, Secretary Westphal, our CMO, and all of our senior leaders recognize the value and the importance of achieving the mandate of the National Defense Authorization Act (NDAA) for Fiscal Year 2010, which requires the Army to be audit-ready by September 30, 2017.

The Army employs hard-working soldiers and civilian personnel across all functional areas, who are dedicated to achieving audit readiness goals. These professionals are transforming our financial and business systems to improve financial management, to provide timely, accurate, and relevant information for decisionmakers, and to reassure the American taxpayers and Congress that the Army is a trustworthy steward of public funds.

I am confident that we will be audit ready by September 30, 2017, because we have a sound and resourced financial improvement plan, which conforms to DOD's FIAR criteria. We have a solid ERP strategy guiding our business systems development and deployment, and we have effective governance and oversight ensuring accountability.

Our financial improvement plan is fully resourced, contains detailed corrective actions and milestones, incorporates lessons learned from the Army Corps of Engineers audit and the Marine Corps audit, and identifies the organizations responsible for corrective actions. Further, the plan requires significant evaluation and testing to ensure internal controls vital to the audit readiness and ensures that the internal controls are in place and operating effectively.

To ensure that we are audit ready by September 30, 2017, our improvement plan calls for four audit examinations each year from fiscal year 2011 to fiscal year 2014. These examinations culminate with an assertion of audit readiness of the Army's statement of budgetary resources in fiscal year 2015.

These four audit examinations ensure that our financial management practices and corrective actions pass audit scrutiny. To ensure audit readiness is sustained, governance and oversight are being provided by the auditors' senior leaders.

Additionally, management personnel across all business functions are being held accountable for achieving audit readiness milestones. This accountability is included in their fiscal year 2012 performance plans.

In summary, execution of our financial improvement plan and our ERP strategy, combined with our senior-level governance and oversight, enable the Army to be audit-ready by September 30, 2017.

I am personally committed to meeting our national security objectives and mandates of the law requiring auditability. I will continue to collaborate with the members of this committee, your counterparts in the House of Representatives, the GAO, Comptroller Hale, and DCMO McGrath to ensure the continued improvement of the Army's business environment.

I look forward to your questions.

[The prepared statement of Ms. Matiella follows:]

PREPARED STATEMENT BY DR. MARY SALLY MATIELLA

Madam Chairman, Senator Ayotte, and members of the subcommittee, thank you for an opportunity to testify today regarding financial management in the U.S. Army, my assessment of Army's progress toward achieving auditable financial statements, the implementation of Army enterprise resource planning systems, and our ongoing efforts to improve financial management operations.

I share Mr. Hale's belief regarding the importance of audit readiness. With Secretary McHugh's support, the Army intends to achieve the milestones required by section 1003 of the National Defense Authorization Act (NDAA) for Fiscal Year 2010: that is, be audit ready not later than September 30, 2017. The emphasis on audit readiness underscores the transformation in financial management across the Army enterprise. The Army employs extremely hard working individuals across all functional areas, both military and civilian, committed to supporting the soldiers executing their mission and defending our country. However, the improvements we are implementing will require our dedicated soldiers and civilians to execute their business differently. Our financial and business systems, processes, controls and training are all keyed to improved financial management and will result in timely, accurate, and relevant information for decisionmakers.

Our enterprise resource planning systems are in various stages of deployment and include a new transaction-driven, compliant general ledger for our general fund, a compliant general ledger for our working capital fund, a tactical supply system and an integrated pay and personnel system. As these systems are being implemented, legacy systems are being drawn down. Our financial managers and business process owners will employ compliant systems operating with associated internal controls as a part of new business processes, which creates a sustainable business environment when coupled with the ongoing training.

We are following the Department's Financial Improvement and Audit Readiness (FIAR) guidance by executing a detailed, fully resourced Financial Improvement Plan (FIP) which provides detailed corrective actions, associated milestone schedule, and identifies organizations responsible for corrective actions. Our FIP tracks multiple elements including implementation and stabilization of the Army's Enterprise Resource Planning (ERP) systems, testing of internal controls and implementation of corrective actions where controls are not operating effectively, and the execution of multiple audit examinations conducted by Independent Public Accountants (IPAs) to ensure corrective actions will withstand audit scrutiny. Additionally, our FIP incorporates lessons learned from the Army Corps of Engineers' successful audit, and the current audit activity with the U.S. Marine Corps. To ensure we remain on track, all Army senior executives will be held accountable in their fiscal year 2012 performance plans for meeting specific audit readiness milestone requirements.

Our major mid-term goals are to assert audit readiness on the General Fund Statement of Budgetary Resources at the end of fiscal year 2015 and to verify the existence and completeness of mission critical assets by the third quarter of fiscal year 2015. These mid-term milestones support requirements established by Comptroller Hale and the NDAA for Fiscal Year 2010 to focus audit readiness activities on improving the information most useful to the department's managers such as budgetary information reflected in the Statement of Budgetary Resources and the existence and completeness of mission critical assets.

To ensure we achieve these mid-term milestones, we have established several interim milestones in our FIP. For example the Army asserted audit readiness for all general fund appropriations received, covering about $232 billion fiscal year 2010 appropriations. The Army's entire appropriations received is under audit examination by an IPA. The audit will determine if the Army has the appropriate controls and documentation to properly record and report appropriations received and distributed throughout all Army commands. Appropriations received represents a significant interim milestone covering a substantial reporting element on the Army's financial statements.

Another example of our interim milestones is a second audit examination currently in process by an IPA of multiple business activities conducted at Army Headquarters and several field sites operating the Army's financial management ERP system, the General Fund Enterprise Business System (GFEBS). This is the first of four interim audit examinations planned between now and fiscal year 2015 to ensure our management controls, business processes and documentation, as established in the objective ERP environment supported by GFEBS, are capable of meeting the rigors of a financial statement audit. Collectively, the appropriations received audit, and the interim audit examinations of the ERP environment will enable us to achieve our mid-term objective to assert audit readiness of the Army's

Statement of Budgetary Resources by fiscal year 2015, and to assert audit readiness of all financial statements by September 30, 2107.

In addition to audit examinations conducted by IPAs, we are also mapping all our end-to-end business processes, identifying key controls within each business process, and executing discovery and evaluation activities to ensure controls are properly established and operating effectively. Our discovery and evaluation efforts are led by my audit readiness staff with support provided by the Army Audit Agency and the Army's Internal Review and Audit Compliance network. Our discovery and evaluation efforts comply with the Department's FIAR criteria, and requirements established by Office of Management and Budget Circular A–123 Appendix A. The discovery and evaluation efforts enable us to ensure all business activity within the Army is conducted in a compliant manner, and to isolate non conforming activity for corrective actions. Follow-up audit by the Army Audit Agency and reviews by our Internal Review and Audit Compliance personnel ensure corrective actions are properly implemented.

This strategy enables us to make adjustments to our approach by the early detection and correction of control and process deficiencies. We have several interim milestones that will provide us with appropriate information on our progress for meeting both the 2015 and 2017 goals. In fact, we have already started to achieve some important milestones that will pave the way for full financial statement audit readiness by September 30, 2017. Army will engage the Department of Defense (DOD) Inspector General in fiscal year 2014 to conduct an audit of the existence and completeness of mission critical assets, which includes nearly 700,000 general equipment, military equipment, and real property end items, as well as several million missiles and ammunition assets. We have already completed an existence and completeness assertion of 97 percent of our aviation assets, which accounts for 17 percent of the Army's military equipment line items, and have expanded our audit readiness work to cover all mission critical assets across the Army.

The Army FIP focuses on correcting internal control weaknesses throughout the Army's business processes and business systems. The plan includes corrective actions, milestones and performance measures, and links the replacement of non-standard, non-compliant business information systems with implementation of the Army's Enterprise Resource Planning systems. Establishing and maintaining an auditable organization requires executing standardized business processes and systems, as well as complying with Federal accounting standards and the DOD business enterprise architecture. By linking the FIP with the Army's Enterprise Resource Planning Strategy, we are able to ensure business system development and modernization is synchronized with audit readiness requirements.

Since the Army's Enterprise Resource Planning systems are vital to achieving and sustaining audit readiness, we are conducting internal assessments of our business systems using the Government Accountability Office (GAO) Financial Information Systems Control Audit Manual (FISCAM). Our business system assessment is informed by the Single Army Financial Enterprise architecture which provides all business system components and processes. The FISCAM provides the standards against which an IPA will conduct a financial statement audit.

As an interim milestone, we plan to complete and document our internal assessment of the GFEBS against FISCAM standards by December 2011, and conduct an audit examination by an IPA in fiscal year 2012. The results our fiscal year 2011 internal assessment and the fiscal year 2012 follow-up systems audit will provide assurance that the GFEBS is able to fully support the Army's audit readiness goals, well in advance of our fiscal year 2015 Statement of Budgetary Resources assertion. In the fall of 2011, we will begin similar FISCAM preparation work, using our Single Army Financial Enterprise Architecture as a guide, to ensure all business systems supporting the financial enterprise, including the Army's Enterprise Resource Planning systems are able to support the Army's audit readiness goals.

Since February 2010, we have experienced successes and achieved milestones never accomplished previously. For example, GFEBS has been fielded to over 34,000 users worldwide and is substantially compliant with the Federal Financial Managers' Integrity Act. We have made several assertions in the past 9 months and have IPAs currently conducting two audits. In addition, three of our four Enterprise Resource Planning systems are in deployment providing the Army for the first time a standard, transaction driven general ledger recording and reporting capability enabling auditors to track balances from the financial statements to the detailed transactions supporting these balances. Much of this success can be attributed to the 2 years of consistent Army and DOD leader engagement, the Department's focus and sound audit readiness guidance, and the support provided by Congress.

I am encouraged by preliminary results of the GAO's current audit of the Department's financial improvement efforts. Results indicate the Department has a solid

methodology as established by criteria of the FIAR framework. We are implementing the FIAR methodology in our FIP by taking a controls-based audit readiness approach focused on establishing and sustaining audit readiness by identifying risks, mapping them to the key control objectives established by the GAO Financial Audit Manual and FIAR Guidance, and implementing effective controls throughout the business environment. In addition, we are automating as many controls as possible within the Enterprise Resource Planning systems to minimize manual controls and reduce risks that exist within business processes.

Our strategy is focused on building the internal structure to sustain audit readiness and realize the benefits of an improved and controlled business environment. This corporate knowledge begins with top-down leadership engagement and accountability. The Army recognizes that audit readiness requires engagement throughout the organization and the Army is the first Service to take the bold step holding all Senior Executive Service personnel—not just those in the financial management community—accountable for achieving audit readiness milestones. On May 26, 2011, I established assessment criteria against which all Army Senior Executive personnel will be held accountable in fiscal year 2012 performance plans for achieving audit readiness milestones.

I am confident we are executing a sound plan that will achieve the NDAA 2010 mandate. I do, however, recognize we have many hard challenges ahead and areas for improvement. The feedback we are receiving from our discovery and evaluation efforts, IPA Audit Examinations, and lessons from U.S. Army Corps of Engineers and U.S. Marine Corps audits are all helpful to forming and shaping our audit readiness efforts. We will continue to leverage these resources as we move forward in the execution of our FIP.

In summary, I recognize the challenges associated with improving financial information and achieving audit readiness within Army. However, we are making great progress because of the commitment from senior Army leaders and business process owners. I am personally committed to this effort to meet our national security objectives and the mandates of the law. I look forward to working with the members of this committee, your counterparts in the House of Representatives, GAO, and Comptroller Hale to ensure the continued improvement of the Army's business environment.

Senator MCCASKILL. Thank you.

Secretary Commons.

STATEMENT OF HON. GLADYS J. COMMONS, ASSISTANT SECRETARY OF THE NAVY, FINANCIAL MANAGEMENT AND COMPTROLLER

Ms. COMMONS. Madam Chairman, Senator Ayotte, Senator Begich, thank you for the opportunity to discuss the Navy's efforts to achieve financial audit readiness.

The Navy is fully committed to achieving financial auditability, and our senior leaders have provided the resources to do so. We are moving forward.

As Secretary Hale noted, the Marine Corps is in the second year of audit of the statement of budgetary resources. We hope to have positive results from that audit by the end of the year.

As also noted, the Navy is currently undergoing examination by a private firm of our appropriations received process, and we should have those results in August.

The DOD IG is currently examining the completeness and existence of high-value military equipment—that is, our ships, ballistic missiles, and satellites—to be followed by an examination of the existence and completeness of our aircraft and ordnance inventory.

We have learned many lessons from the Marine Corps audit, and we have incorporated those lessons into our overall Navy financial improvement plan. We are also sharing these lessons with the other Services. They include from the very complex of ensuring the

accuracy of our beginning balances to the simple—maintenance of our supporting documentation and separation of duties.

We are working with our service providers to ensure we all understand what must be done and who is responsible. We have reached across our own aisles to assign responsibility to our business process owners, such as our human resource organizations and our acquisition organizations. Beginning in October, every senior executive responsible for executing our business processes will have an audit readiness objective in his or her performance plan.

We are also engaging our general and flag officers through the Vice Chief of Naval Operations and the Assistant Commandant of the Marine Corps. In August, we will begin training our new general and flag officers specifically on their responsibility as they relate to auditability.

Achieving auditability is challenging, and there is much work to be done. We are committed to this effort and we are making progress.

Thank you for your interest and support of our efforts. I will be pleased to answer any questions you might have later.

[The prepared statement of Ms. Commons follows:]

PREPARED STATEMENT BY HON. GLADYS J. COMMONS

Chairman McCaskill, Senator Ayotte, members of the subcommittee, thank you for the opportunity to discuss the Department of the Navy's efforts to achieve financial audit readiness. Achieving financial auditability is one of my highest priorities and I am personally committed to this objective. The top leaders in the Department, Secretary Mabus, Under Secretary Work, as well as the Chief of Naval Operations, Admiral Roughead, and General Amos, the Commandant of the Marine Corps, are all also committed to our drive to auditability.

Indeed, the Department has demonstrated through performance that we are aggressively moving forward. The Marine Corps is in its second year of audit on its Statement of Budgetary Resources. Our goal is to attain an opinion later this year from the Department of Defense (DOD) Inspector General and the private firm conducting the engagement. This effort has been a significant first-time challenge for us, but the marines have risen admirably to the test, as they always do. This audit has been invaluable because of the lessons we've learned. We have incorporated those lessons into our larger Department of the Navy financial improvement plan and are sharing them with the other Military Departments.

The Department of the Navy is currently undergoing an examination by an outside auditor of its Appropriation Received process; and the DOD Inspector General is conducting an examination on the existence and Completeness of high-value military equipment, including ships, ballistic missiles, and satellites. We also believe that we are ready for an examination of the existence and completeness of our aircraft and ordnance.

In addition to supporting these ongoing audits, we continue to identify the improvements to business processes and systems needed to support an audit of the entire Department's Statement of Budgetary Resources. We know we must comply comprehensively with accounting and auditing standards, just as all financial entities, public or private, are required to do; however, our systems and processes are not yet designed to do so. Internal controls in most areas must be strengthened. Our audit readiness team has refined its detailed plan for audit readiness, based on the extensive lessons we've learned from our Marine Corps audit and from our initial assessments of the auditability of our business processes.

One current focus is bolstering our collaboration with our service providers, particularly the Defense Finance and Accounting Service (DFAS). We know that we must develop several essential capabilities before we can undergo an audit, including reconciling our cash balance with Treasury and tracing transactions from their orgination through the financial statements. Extensive cooperation with DFAS will be required for success in these areas. We have their commitment.

In addition to changing business processes, we need to improve controls in supporting business systems. Navy's Enterprise Resource Planning (ERP) system will make a significant contribution to our auditability efforts. Navy ERP will enhance

these efforts because it establishes a stronger, embedded internal control framework and helps standardize business processes for a sustainably auditable environment. Implementation of Navy ERP continues space and according to schedule.

As a final point, I'd like to reiterate our leadership's commitment to audit readiness. We continue to widen the circle of accountability. Beginning next fiscal year, every senior executive responsible for executing our business processes will have an audit readiness objective in his or her performance plan. These frontline leaders will help the Department transform its business processes and orient its business culture toward auditability. In addition, we continue to have the commitment of our leadership to resource these efforts adequately now and into the future.

I'll be pleased to answer any of your questions at the appropriate time.

Senator MCCASKILL. Thank you very much.

Secretary Morin.

STATEMENT OF HON. JAMIE M. MORIN, ASSISTANT SECRETARY OF THE AIR FORCE, FINANCIAL MANAGEMENT AND COMPTROLLER

Mr. MORIN. Thank you very much, Madam Chair, Ranking Member.

It is a pleasure, as always, to have a chance to come before this committee and the subcommittee. It is a committee I had a lot of chances to work with when I spent 6 years on the staff in the Senate.

If I may, I would like to just summarize the written testimony that I prepared for the committee and have the statement entered in the record.

When I came before the Senate Armed Services Committee 2 years ago as a nominee, I accepted a charge from Senator McCain that for the Air Force, business-as-usual would not be acceptable when it came to the audit readiness effort. That is a charge I have taken to heart and I think the Air Force has stepped forward aggressively on over the last couple of years. Air Force leadership simply will not and cannot accept doing business as usual if we expect to get to audit readiness by the statutory deadline in 2017.

As I promised at that confirmation hearing, I have been a very strong advocate for Under Secretary Hale's effort to really focus our FIAR plan on the information that matters to managers. I said at the time and I agree now that that is a good idea because it builds a positive feedback loop, where the people charged with leading and running DOD on a day-to-day basis see the practical results of the FIAR effort.

They get the better information they need to manage better, and therefore, they are more likely to seek to invest more in getting us to that statutory timeline. It gives the leaders the information they need in order to maximize the value we get out of each taxpayer dollar.

I think this new focus really has delivered in terms of creating stronger managerial incentives, and it has raised the profile of audit readiness across the Air Force. Senator Ayotte's point about auditability as a means to an end of good stewardship is, I think, right on target, and that mindset is really taking hold across the Air Force.

Like my colleagues, I am pleased to report that the Air Force has made some very good and important progress on some of our key interim deliverables over the last year or 2. Some of the wins include our assertions of audit readiness on appropriations received

and distributed; our Funds Balance with Treasury reconciliation process, which Mr. Hale mentioned.

That is a critical challenge, and sort of balancing our checkbook with Treasury, it is over a million transactions a month. We are matching up 99.99 percent of them, which is an essential enabler for our broader audit readiness effort.

The existence and completeness of our entire military equipment portfolio. We are also moving onto a range of operating materials and supplies, things like our cruise missiles and aerial targets and several other items there.

The progress that has been made is a direct result of the exceptional commitment from our CMO, Under Secretary Conaton, and the Air Force senior leadership. They have increased the resources to this—applied to this effort every year, and they have applied the right level of management attention to focus the team on the progress.

Just 2 months ago, Under Secretary Conaton and the Vice Chief of Staff for the Air Force, General Breedlove, wrote to all of our major commands underscoring, first, the overall importance of the FIAR and how it plays into Air Force efficiency efforts; but also charging each of those commands with creating the right incentives in the performance plans of their senior leaders to focus the organization not just at a headquarters level, but down to the field on the financial improvement effort.

But while we have made great progress on some of these interim deliverables, we do still have a long way to go to meet the 2017 deadline. Our ability to achieve audit readiness depends in part on our ability to field our ERPs. These systems are replacing Vietnam-era bookkeeping systems that are not compliant with any of the key requirements that are needed to get to audit readiness.

While ERPs are not a panacea and the fielding of them has not been without challenges, there is no alternative to modernizing Air Force financial management systems. Whether it is ERP or something else, we have to modernize those systems if we are going to get to audit readiness.

In fielding our ERPs, we have benefited greatly in the Air Force from being a little bit behind the other Services. We have had an opportunity to observe their deployments, observe their fielding, and learned quite a few lessons.

So, for example, we have had a heavy focus on data cleanup and data integrity efforts and migrating the historical data over. We continue to push forward, consistent with guidance from the Office of Management and Budget (OMB) and others, to focus on fielding discrete increments and smaller pieces of these ERPs in order to improve accountability, avoid big bang approaches.

Successful deployment of these systems, though, will depend on execution and our ability to work these systems through an acquisition and fielding timeline that is—will strain the system. If we do DOD acquisition business as usual, we will not be able to successfully field these systems.

It is for those reasons that I do see moderate risk in the Air Force's ability to meet that fielding timeline. As a result, we are working to hedge against that risk and explore interim solutions that would help us achieve auditability in a more patchwork way

if the systems do not deliver on the schedule that is currently there.

Again, this is a belt-and-suspenders approach in many cases. But having observed the DOD acquisition of IT systems over quite a few years, while we have a schedule in front of us that I have reasonable confidence in, I know that the historical record of achievement of planned schedules on IT acquisitions is not good, and I feel a need to hedge against that.

But I do want to be very clear. We have a comprehensive plan toward our business systems modernization and toward our business process improvement that is carefully crafted to get us toward an audit-ready environment by 2017. We are pressing forward with a very strong leadership commitment to achieving that deadline.

With that, I am ready for the committee's questions and the testimony of the other witnesses.

[The prepared statement of Mr. Morin follows:]

PREPARED STATEMENT HON. JAMIE M. MORIN

Thank you for the opportunity to brief the subcommittee on your Air Force's efforts and progress towards financial improvement and audit readiness. We recognize that auditable financials will be useful tools helping the Air Force produce the maximum combat capability from each taxpayer dollar invested. The Air Force is implementing the Department of Defense (DOD) Financial Improvement and Audit Readiness (FIAR) guidance through a detailed Financial Improvement Plan (FIP) which includes discovery of problem areas, a set of milestones and interim deliverable, and assignment of corrective actions to accountable parties.

Air Force leadership is engaged and committed to our audit readiness efforts. This engagement extends to the highest levels—for instance, both uniformed and civilian. In May, the Under Secretary of the Air Force, Ms. Conaton, and the Air Force Vice Chief of Staff, General Breedlove wrote to the leadership of all our Air Force Major Commands emphasizing the importance of audit readiness.

A key focus in Air Force audit readiness efforts is individual accountability. Toward that end, the Air Force has led the way requiring senior executives to include audit readiness objectives in their annual performance plans. These goals must be concrete, measurable and individually tailored to ensure accountability. Members of my team, the Air Force Deputy Chief Management Officer and a small number of other key leaders already have these goals in their performance plans. We continue to expand this effort to include executives in acquisition, logistics, and personnel.

Currently, the end date on Air Force's audit readiness schedule comes later than those of the other Services. This is due in part to our reliance on our Enterprise Resource Planning (ERP) systems as part of the solution to several key audit readiness challenges. Over the last 2 years, we have aimed to accelerate our progress by seeking additional funding in our fiscal year 2012 budget request and evaluating legacy systems for audit. Additionally, Air Force leadership placed heavy emphasis on identifying opportunities for interim progress, such as accelerating asserting Existence and Completeness for Medical Equipment and Munitions. Air Force financial managers and other responsible officials are engaging with the Office of the Secretary of Defense (OSD) and the other Services to ensure we benefit from the lessons learned by other organizations in their own audit readiness efforts.

As a result of strong leadership commitment and the changes we have made in the last year, we have made significant progress in Under Secretary Hale's prioritized audit readiness areas—Budgetary Information and Mission Critical Assets.

In September 2010, the Air Force asserted audit readiness on Appropriations received and distributed to our major commands. This assertion covers $165 billion or 94 percent of new budget authority. This assertion provides taxpayers the confidence we have control of appropriations received. In April 2011, KPMG, an Independent Public Accounting firm, was hired to express an opinion on our assertion and we expect completion of this engagement in late August 2011.

In December 2010, we asserted audit readiness for our Fund Balance with Treasury (FBwT) Reconciliation. This is analogous to balancing the Air Force checkbook, albeit one with approximately 1.1 million transactions per month. Since April 2010, we have consistently exceeded the OSD goal of reconciling 98 percent and in June

2011, we reconciled 99.99 percent of the dollar value. Our unmatched disbursements declined from $1.3 billion to $800 thousand since implementing our FBwT reconciliation tool and process.

We also asserted audit readiness for the existence and completeness of Military Equipment in December 2010. This includes satellites, aircraft, remotely piloted vehicles, aircraft pods, and intercontinental ballistic missiles. With a Net Book Value of $103 billion, Military Equipment represents approximately one third of our total assets. Finally, we asserted audit readiness on the existence and completeness of our cruise missiles, aerial targets, and drones in June 2011. Testing will likely reveal a few areas for further cleanup, but this is a major accomplishment.

Standard business rules and data structures defined in comprehensive business architecture are critical to establishing an audit ready environment. The Air Force Chief Management Officer (CMO) is responsible for ensuring comprehensive business enterprise architecture is adopted across the enterprise. The CMO's office exercises oversight of the functional communities' adoption of this architecture through biweekly meetings with representatives from all communities. This enterprise senior working group also reviews systems investments exceeding $1 million ensuring appropriate consideration has been given to business process reengineering as an alternative to system investments.

The Air Force is committed to continuous progress toward audit readiness. For several years, we have deferred enhancements to our legacy systems while we developed more robust IT Solutions, including Enterprise Resource Planning Systems (ERPs) such as Defense Enterprise Accounting Management System (DEAMS), Expeditionary Combat Support System (ECSS), Air Force Integrated Personnel and Pay System (AF–IPPS), and NexGen IT for our real estate and facilities. These ERPs were designed to replace numerous subsidiary systems, reduce the number of interfaces and eliminate redundant data entry, while providing an environment for end-to-end business processes. These systems serve as the foundation for our audit readiness which means that delays in deploying these ERPs will impact our ability to successfully complete an audit. We coordinated our FIAR plan to achieve audit readiness with the deployment of these ERPs.

For example, DEAMS will serve as the General Ledger for our General Fund while ECSS serves as the General Ledger for our Working Capital Fund and the Accountable Property System of Record for our Military Equipment, Operating Materials and Supplies, and Inventory. AF–IPPS integrates our military personnel and pay processes; recording and managing an annual payroll in excess of $33 billion. NexGen IT is our target Accountable Property System of Record for Real Property handling $32 billion or 10 percent of total assets. DEAMS and ECSS have already deployed initial capabilities and are operating at Scott and Hanscom AFB respectively. We are close to completing the requirements definition process for AF–IPPS, including the "clean-audit" standards—and will release an RFP to industry in the next 8 weeks for bids on a technical solution. NexGen IT is our target Accountable Property System of Record for Real Property handling $32 billion or 10 percent of total assets.

These systems clearly will have a material impact on our statements and any delays in their deployment will impact our audit readiness goals. We are working with OSD and the Office of Management and Budget to mitigate these risks and are exploring opportunities to accelerate the acquisition process using a new approach—the Business Capability Lifecycle model rather than the lengthier process outlined in DOD Instruction 5000.

Successfully implementing a more tailored approached to acquisition that works in the fast moving IT environment is key to achieving our audit schedule. I am also concerned about the cost and capabilities of the ERPs and am looking at alternatives for deploying several smaller discrete software releases, regularly competed to incentivize contractors assisting us. We have also encountered integration challenges with the ERPs within our current information technology architecture. While we have taken major steps to get the Air Force ERP systems on track, and I've seen real progress with DEAMS in its initial deployment, there is very little flex in the implementation schedule. Therefore, I see a moderate risk in the Air Force's overall audit readiness schedule. To hedge against the risks either our acquisition process or our systems infrastructure will fall short, I have directed an exploration of interim solutions to achieve auditability by the 2017 deadline.

During fiscal year 2012 we have several important milestones to achieve. We will do an early assessment of DEAMS and ECSS to validate they are configured with the appropriate controls and data to support an audit. I fully expect to find some issues through this review which we will correct as we work towards full deployment, but that is a normal part of the process addressing system weaknesses. Another important fiscal year 2012 milestone is our audit assertion of the Space Based

Infrared System program. Because a program does not typically create stand alone financial statements that are audited, we are working with DFAS to establish the parameters of the audit, but anticipate it covering at least 90 percent of the SIBRS Procurement and R&D expenditures between fiscal year 2008 and fiscal year 2010. Our team had been working to assert existence and completeness for aircraft spare engines and missile motors in June 2011. However, we did not feel that the testing results were sufficient to support audit readiness and are withholding the assertions while additional corrective actions are implemented. We believe that the corrective actions will allow us to submit both assertions during the first quarter of fiscal year 2012 and begin an audit by the third quarter of fiscal year 2012.

The slippage in the assertion on space engines and missile motors underlines the importance of incremental progress and setting stretch goals. We do not expect a perfect batting average the first time through and if we built a process to deliver perfection the first time, it would not be timely. We develop the FIP and schedule primarily at Headquarters based on the best available information, but there are always unknowns due to the Air Force's decentralized operating structure. Our people conduct business at 191 bases across the world organized in 11 major commands. Many processes have evolved differently across our organization, meaning that implementing the required corrective actions sometimes takes longer than expected.

As we work to achieve the 2017 deadline, Air Force leadership is setting numerous stretch goals and setting ambitious goals means occasionally missing them. On the other hand, we have also been able to accelerate some assertions based on better than expected results. We are also striving to strike the right balance between applying resources to robust planning and testing of progress versus hands-on fixing of weaknesses. Both are important. In keeping with best practices, we will rely on the DOD Inspector General or hire an independent public accounting firm to opine on each of our assertions. It is important to note that there are three or more phases of testing enroute to a clean audit—internal Air Force review prior to assertion, external review of the assertion itself, and then the actual audit of Air Force financials.

Thank you for the committee's interest and focus on this important effort. The continued involvement of Congress, OSD, and the Government Accountability Office as well as the very strong commitment of today's Air Force leadership is crucial to ensuring continued progress towards an unqualified audit opinion no later than 2017.

Senator MCCASKILL. Thank you, Secretary Morin.

Mr. Khan.

STATEMENT OF ASIF A. KHAN, DIRECTOR, FINANCIAL MANAGEMENT AND ASSURANCE, GOVERNMENT ACCOUNTABILITY OFFICE

Mr. KHAN. Thank you.

Madam Chairman and members of the subcommittee, good afternoon. It is a pleasure to be here today to discuss the status of DOD financial management improvement and business transformation efforts.

At the outset, I would like to thank the subcommittee for holding this hearing and acknowledge the importance of focused attention on the corrective actions needed to meet difficult challenges.

In my testimony today I will provide GAO's perspective on the status of DOD financial management weaknesses and its efforts to resolve them. In addition, I will also address the challenges DOD continues to face in improving its financial management operations. My testimony today is based on our prior work at DOD.

Regarding the status, like, Madam Chairman, you had mentioned, more than a decade DOD has dominated GAO's list of Federal programs and operations at high risk due to their susceptibility to fraud, waste, abuse, and mismanagement. In the last 20 years, as a result of significant financial management weaknesses, none of the DOD components—including the Army, Navy, or the

Air Force—have been able to prepare auditable financial statements.

DOD's past strategies for improving financial management have generally been ineffective. But recent initiatives are encouraging, specifically recent changes, as Mr. Hale laid out, to the DOD's plan for FIAR plan, if implemented effectively, could result in improved financial management and progress toward our auditability. The Army, Navy, Air Force, and the Defense Logistics Agency have key roles in implementing this plan.

DOD faces many challenges in overcoming its longstanding management weaknesses. I am going to highlight six of these challenges, which very much resonate what you have mentioned in your opening statements.

First, one of the toughest challenges in implementing the FIAR plan is sustaining committed leadership. The DOD Comptroller has expressed commitment to the FIAR plan, and he has established a focused approach to achieve FIAR's long-term goals. This is intended to help DOD achieve near-term successes as well.

To succeed in the long-term, efforts to improve financial management need to be cross-functional. DOD agencies and offices that perform business functions—for example, weapon system acquisitions and supply chain management—are highly dependent on financial management.

However, within every administration and, of course, between administrations, there are changes in senior leadership. Therefore, it is paramount that the FIAR plan and other current initiatives be institutionalized throughout DOD at all levels.

Second, a competent financial management workforce with the right knowledge and skills is needed to implement the FIAR plan. Effective financial management requires a knowledgeable and skilled workforce that includes individuals who are trained as well and well-versed in Government accounting practices and experienced information technology. Analyzing skill needs and then building and retaining an appropriately skilled workforce are needed to succeed in DOD's transformation efforts.

The third challenge is to assure accountability and effective oversight to the improvement efforts. DOD has established bodies responsible for governance and oversight of the FIAR plan implementation. It will be critical for senior leadership at each DOD component to ensure that oversight of financial management improvement projects is effective and that responsible officials are held accountable for progress.

Fourth, a well-defined business architecture is the fourth challenge. For DOD, a key element of modernizing financial management and business operations is the use of integrated information systems with the capability of supporting the vast and complex business operations that DOD has.

A well-defined enterprise architecture will be needed as DOD's blueprint for modernizing its business systems. However, DOD has yet to address previously identified issues associated with both architecture and investment management.

The fifth challenge, like we have mentioned, is the ERP systems. They are expected to form the core of business information systems and DOD components. Their effective implementation is essential

to improving DOD financial management and related business operations, and they will be key to becoming auditable.

However, the components have largely been unable to implement ERPs that deliver the needed capabilities and on schedule and within budget. Effective business system modernization across DOD is a key to achieving hundreds and millions of dollars in annual savings.

Finally, weaknesses in DOD internal control over financial management are pervasive and primary factor in DOD's ability to become auditable. DOD needs a practical approach to prioritizing actions to correct these weaknesses.

In closing, I am encouraged by the recent efforts and commitments the DOD leaders have shown towards improving DOD's financial management. However, DOD's ability to address these six major challenges that I have highlighted today will be critical to improving its financial management operations and achieving auditability.

These challenges are significant. They deal with the very basic building blocks of sound financial management. However, it is absolutely critical at the same time that DOD continues with its current efforts, commitments, and momentum going forward.

Madam Chairman, this concludes my remarks. I will be happy to answer questions you may have.

Thank you.

[The prepared statement of Mr. Khan follows:]

PREPARED STATEMENT BY ASIF A. KHAN

Chairwoman McCaskill, Ranking Member Ayotte, and members of the subcommittee:

It is a pleasure to be here today to discuss the status of the Department of Defense's (DOD) efforts to improve its financial management operations and achieve audit readiness. At the outset, I would like to thank the Subcommittee for holding this hearing and to acknowledge the important role of such hearings in the oversight of DOD's financial management efforts.

DOD is one of the largest and most complex organizations in the world. For fiscal year 2012, the budget requested for the department was approximately $671 billion—$553 billion in discretionary budget authority and $118 billion to support overseas contingency operations. The fiscal year 2012 budget request also noted that DOD employed over 3 million military and civilian personnel—including Active and Reserve servicemembers. DOD operations span a wide range of defense organizations, including the Military Departments and their respective major commands and functional activities, 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 operation. To execute its operations, the department performs interrelated and interdependent business functions, including financial management, logistics management, health care management, and procurement. To support its business functions, DOD has reported that it relies on over 2,200 business systems,[1] including accounting, acquisition, logistics, and personnel systems.

The department's sheer size and complexity contribute to the many challenges DOD faces in resolving its pervasive, complex, and longstanding financial management and related business operations and systems problems. Numerous initiatives and efforts have been undertaken by DOD and its components to improve the department's financial management operations and to arrive at a point where the reliability of its financial statements and related financial management information

[1] DOD excludes from its business systems those designated as national security systems under section 2222(j) of title 10, U.S.C. National security 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.

would be sufficient to pass an audit with favorable (clean) audit opinions. To date, DOD has not achieved effective financial management capabilities or financial statement auditability.[2]

Today, I will discuss the status of DOD's financial management weaknesses, its efforts to resolve those weaknesses, and the challenges DOD continues to face in its efforts to improve its financial management operations. In addition, I will outline the status of the department's efforts to implement its Enterprise Resource Planning (ERP) systems,[3] which represent a critical element of the department's Financial Improvement and Audit Readiness (FIAR) strategy. My statement today is based on our prior work related to the department's FIAR plan[4] and ERP implementation efforts.[5] Our work was conducted in accordance with generally accepted government auditing standards and our previously published reports contain additional details on the scope and methodology for those reviews. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

BACKGROUND

The department is facing near- and long-term internal fiscal pressures as it attempts to balance competing demands to support ongoing operations, rebuild readiness following extended military operations, and manage increasing personnel and health care costs as well as significant cost growth in its weapon systems programs. For more than a decade, DOD has dominated GAO's list of Federal programs and operations at high risk of being vulnerable to fraud, waste, abuse.[6] In fact, all of the DOD programs on GAO's High-Risk List relate to business operations, including systems and processes related to management of contracts, finances, supply chain, and support infrastructure,[7] as well as weapon systems acquisition. Longstanding and pervasive weaknesses in DOD's financial management and related business processes and systems have: (1) resulted in a lack of reliable information needed to make sound decisions and report on the financial status and cost of DOD activities to Congress and DOD decisionmakers; (2) adversely impacted its operational efficiency and mission performance in areas of major weapons system support and logistics; and (3) left the department vulnerable to fraud, waste, and abuse.

Because of the complexity and long-term nature of DOD's transformation efforts, GAO has reported the need for a chief management officer (CMO) position and a comprehensive, enterprisewide business transformation plan. In May 2007, DOD

[2] DOD's auditors have reported material financial management weaknesses in the following areas: (1) Financial Management Systems, (2) Fund Balance with Treasury, (3) Accounts Receivable, (4) Inventory, (5) Operating Materials and Supplies, (6) General Property, Plant, and Equipment, (7) Government-Furnished Material and Contractor-Acquired Material, (8) Accounts Payable, (9) Environmental Liabilities, (10) Statement of Net Cost, (11) Intragovernmental Eliminations, (12) Other Accounting Entries, and (13) Reconciliation of Net Cost of Operations to Budget.

[3] An ERP system uses commercial off-the-shelf software consisting of multiple, integrated functional modules that perform a variety of business related tasks such as general ledger accounting, payroll, and supply chain management.

[4] GAO, Financial Management: Achieving Financial Statement Auditability in the Department of Defense, GAO–09–373 (Washington, DC: May 6, 2009).

[5] GAO, DOD Business Transformation: Improved Management and Oversight of Business Modernization Efforts Needed, GAO–11–53 (Washington, DC: Oct. 7, 2010); Defense Logistics: Actions Needed to Improve Implementation of the Army Logistics Modernization Program, GAO–10–461 (Washington, DC: Apr. 30, 2010), DOD Business Transformation: Air Force's Current Approach Increases Risk That Asset Visibility Goals and Transformation Priorities Will Not Be Achieved, GAO–08–866 (Washington, DC: Aug. 8, 2008), DOD Business Systems Modernization: Important Management Controls Being Implemented on Major Navy Program, but Improvements Needed in Key Areas, GAO–08–896 (Washington, DC: Sept. 8, 2008), and DOD Business Transformation: Lack of an Integrated Strategy Puts the Army's Asset Visibility System Investments at Risk, GAO–07–860 (Washington, DC: July 27, 2007).

[6] DOD bears responsibility, in whole or in part, for 14 of the 30 Federal programs or activities that GAO has identified as being at high risk of waste, fraud, abuse, and mismanagement. The eight specific DOD high-risk areas are: (1) approach to business transformation, (2) business systems modernization, (3) contract management, (4) financial management, (5) supply chain management, (6) support infrastructure management, and (7) weapon systems acquisition. The seven governmentwide high-risk areas that include DOD are: (1) disability programs, (2) interagency contracting, (3) information systems and critical infrastructure, (4) information sharing for homeland security, (5) human capital, (6) real property, and (7) ensuring the effective protection of technologies critical to U.S. national security Interests.

[7] Support infrastructure includes categories such as installations, central logistics, the defense health program, and central training.

designated the Deputy Secretary of Defense as the CMO. In addition, the National Defense Authorization Acts for Fiscal Years 2008 and 2009 contained provisions that codified the CMO and Deputy CMO (DCMO) positions, required DOD to develop a strategic management plan, and required the Secretaries of the Military Departments to designate their under secretaries as CMOs and to develop business transformation plans.

Overview of DOD's Accounting and Finance Activities

DOD financial managers are responsible for the functions of budgeting, financing, accounting for transactions and events, and reporting of financial and budgetary information. To maintain accountability over the use of public funds, DOD must carry out financial management functions such as recording, tracking, and reporting its budgeted spending, actual spending, and the value of its assets and liabilities. DOD relies on a complex network of organizations and personnel to execute these functions. Also, its financial managers must work closely with other departmental personnel to ensure that transactions and events with financial consequences, such as awarding and administering contracts, managing military and civilian personnel, and authorizing employee travel, are properly monitored, controlled, and reported, in part, to ensure that DOD does not violate spending limitations established in legislation or other legal provisions regarding the use of funds.

Before fiscal year 1991, the Military Services and Defense agencies independently managed their finance and accounting operations. According to DOD, these decentralized operations were highly inefficient and failed to produce reliable information. On November 26, 1990, DOD created the Defense Finance and Accounting Service (DFAS) as its accounting agency to consolidate, standardize, and integrate finance and accounting requirements, functions, procedures, operations, and systems. The Military Services and defense agencies pay for finance and accounting services provided by DFAS using their operations and maintenance appropriations. The Military Services continue to perform certain finance and accounting activities at each military installation. These activities vary by Military Service depending on what the Services wanted to maintain in-house and the number of personnel they were willing to transfer to DFAS. As DOD's accounting agency, DFAS records these transactions in the accounting records, prepares thousands of reports used by managers throughout DOD and by Congress, and prepares DOD-wide and service-specific financial statements. The Military Services play a vital role in that they authorize the expenditure of funds and are the source of most of the financial information that allows DFAS to make payroll and contractor payments. The Military Services also have responsibility over all DOD assets and the related information needed by DFAS to prepare annual financial statements required under the Chief Financial Officers Act.[8]

DOD accounting personnel are responsible for accounting for funds received through congressional appropriations, the sale of goods and services by working capital fund businesses, revenue generated through nonappropriated fund activities, and the sales of military systems and equipment to foreign governments or international organizations. DOD's finance activities generally involve paying the salaries of its employees, paying retirees and annuitants, reimbursing its employees for travel-related expenses, paying contractors and vendors for goods and services, and collecting debts owed to DOD. DOD defines its accounting activities to include accumulating and recording operating and capital expenses as well as appropriations, revenues, and other receipts. According to DOD's fiscal year 2012 budget request, in fiscal year 2010 DFAS

- processed approximately 198 million payment-related transactions and disbursed over $578 billion;
- accounted for 1,129 Active DOD appropriation accounts; and
- processed more that 11 million commercial invoices.

PERVASIVE FINANCIAL MANAGEMENT PROBLEMS CONTINUE TO AFFECT THE EFFICIENCY AND EFFECTIVENESS OF DOD OPERATIONS

DOD financial management was designated as a high-risk area by GAO in 1995. Pervasive deficiencies in financial management processes, systems, and controls, and the resulting lack of data reliability, continue to impair management's ability to assess the resources needed for DOD operations; track and control costs; ensure basic accountability; anticipate future costs; measure performance; maintain funds control; and reduce the risk of loss from fraud, waste, and abuse.

[8] Sec. 31 U.S.C. § 3515(a),(c); PMB Bulletin No. 07–04, Audit Requirements For Federal Agencies Statements, Appendix B (Sept. 2004).

Other business operations, including the high-risk areas of contract management, supply chain management, support infrastructure management, and weapon systems acquisition are directly impacted by the problems in financial management. We have reported that continuing weaknesses in these business operations result in billions of dollars of wasted resources, reduced efficiency, ineffective performance, and inadequate accountability. Examples of the pervasive weaknesses in the department's business operations are highlighted below.

- DOD invests billions of dollars to acquire weapon systems, but it lacks the financial management processes and capabilities it needs to track and report on the cost of weapon systems in a reliable manner. We reported on this issue over 20 years ago,[9] but the problems continue to persist. In July 2010, we reported[10] that although DOD and the Military Departments have efforts underway to begin addressing these financial management weaknesses, problems continue to exist and remediation and improvement efforts would require the support of other business areas beyond the financial community before they could be fully addressed.
- DOD also requests billions of dollars each year to maintain its weapon systems, but it has limited ability to identify, aggregate, and use financial management information for managing and controlling operating and support costs. Operating and support costs can account for a significant portion of a weapon system's total life-cycle costs, including costs for repair parts, maintenance, and contract services. In July 2010, we reported[11] that the department lacked key information needed to manage and reduce operating and support costs for most of the weapon systems we reviewed[12]—including cost estimates and historical data on actual operating and support costs. For acquiring and maintaining weapon systems, the lack of complete and reliable financial information hampers DOD officials in analyzing the rate of cost growth, identifying cost drivers, and developing plans for managing and controlling these costs. Without timely, reliable, and useful financial information on cost, DOD management lacks information needed to accurately report on acquisition costs, allocate resources to programs, or evaluate program performance.
- In June 2010, we reported[13] that the Army Budget Office lacked an adequate funds control process to provide it with ongoing assurance that obligations and expenditures do not exceed funds available in the Military Personnel-Army (MPA) appropriation. We found that an obligation of $200 million in excess of available funds in the Army's military personnel account violated the Antideficiency Act. The overobligation likely stemmed, in part, from lack of communication between Army Budget and program managers so that Army Budget's accounting records reflected estimates instead of actual amounts until it was too late to control the incurrence of excessive obligations in violation of the act. Thus, at any given time in the fiscal year, Army Budget did not know the actual obligation and expenditure levels of the account. Army Budget explained that it relies on estimated obligations—despite the availability of actual data from program managers—because of inadequate financial management systems. The lack of adequate process and system controls to maintain effective funds control impacted the Army's ability to prevent, identify, correct, and report potential violations of the Antideficiency Act.
- In our February 2011 report[14] on the Defense Centers of Excellence (DCOE), we found that DOD's TRICARE Management Activity (TMA) had misclassified $102.7 million of the nearly $112 million in DCOE advisory and assistance contract obligations. The proper classification and recording

[9] GAO, Financial Audit: Air Force Does Not Effectively Account for Billions of Dollars of Resources, GAO/AFMD 90–23 (Washington, DC: Feb. 23, 1990).

[10] GAO, Department of Defense: Additional Actions Needed to Improve Financial Management of Military Equipment, GAO–10–695 (Washington, DC July 26, 2010).

[11] GAO, Defense Management: DOD Needs Better Information and Guidance to More Effectively Manage and Reduce Operating and Support Costs of Major Weapon Systems, GAO–10–717 (Washington, DC: July 20, 2010).

[12] GAO reviewed the following seven major aviation systems: the Navy's F/A–18E/F; the Air Force's F–22A, B–1B, and F–15E; and the Army's AH–64D, CH–47D, and UH–60L.

[13] GAO, Department of the Army—The fiscal year 2008 Military Personnel, Army Appropriation and the Antideficiency Act, B–318724 (Washington, DC: June 22, 2010).

[14] GAO, Defense Health: Management Weaknesses at Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury Require Attention, GAO–11–219 (Washington, DC: Feb. 28, 2011).

of costs are basic financial management functions that and are also key in analyzing areas for potential future savings.

Without adequate financial management processes, systems, and controls, DOD components are at risk of reporting inaccurate, inconsistent, and unreliable data for financial reporting and management decisionmaking and potentially exceeding authorized spending limits. The lack of effective internal controls hinders management's ability to have reasonable assurance that their allocated resources are used effectively, properly, and in compliance with budget and appropriations law.

DOD'S PAST STRATEGIES FOR IMPROVING FINANCIAL MANAGEMENT WERE INEFFECTIVE BUT RECENT INITIATIVES ARE ENCOURAGING

Over the years, DOD has initiated several broadbased reform efforts to address its longstanding financial management weaknesses. However, as we have reported, those efforts did not achieve their intended purpose of improving the department's financial management operations. In 2005, the DOD Comptroller established the DOD FIAR Directorate to develop, manage, and implement a strategic approach for addressing the department's financial management weaknesses and for achieving auditability, and to integrate those efforts with other improvement activities, such as the department's business system modernization efforts. In May 2009,[15] we identified several concerns with the adequacy of the FIAR plan as a strategic and management tool to resolve DOD's financial management difficulties and thereby position the department to be able to produce auditable financial statements.

Overall, since the issuance of the first FIAR plan in December 2005, improvement efforts have not resulted in the fundamental transformation of operations necessary to resolve the department's longstanding financial management deficiencies. However, DOD has made significant improvements to the FIAR plan that, if implemented effectively, could result in significant improvement in DOD's financial management and progress toward auditability, but progress in taking corrective actions and resolving deficiencies remains slow. While none of the Military Services has obtained an unqualified (clean) audit opinion, some DOD organizations, such as the Army Corps of Engineers, DFAS, the Defense Contract Audit Agency, and the DOD Inspector General, have achieved this goal. Moreover, some DOD components that have not yet received clean audit opinions are beginning to reap the benefits of strengthened controls and processes gained through ongoing efforts to improve their financial management operations and reporting capabilities. Lessons learned from the Marine Corps' Statement of Budgetary Resources audit can provide a roadmap to help other components better stage their audit readiness efforts by strengthening their financial management processes to increase data reliability as they develop action plans to become audit ready.

In August 2009, the DOD Comptroller sought to further focus efforts of the department and components, in order to achieve certain short- and long-term results, by giving priority to improving processes and controls that support the financial information most often used to manage the department. Accordingly, DOD revised its FIAR strategy and methodology to focus on the DOD Comptroller's two priorities—budgetary information and asset accountability. The first priority is to strengthen processes, controls, and systems that produce DOD's budgetary information and the department's Statements of Budgetary Resources. The second priority is to improve the accuracy and reliability of management information pertaining to the department's mission-critical assets, including military equipment, real property, and general equipment, and validating improvement through existence and completeness testing. The DOD Comptroller directed the DOD components participating in the FIAR plan—the departments of the Army, Navy, Air Force and Defense Logistics Agency—to use a standard process and aggressively modify their activities to support and emphasize achievement of the priorities.

GAO supports DOD's current approach of focusing and prioritizing efforts in order to achieve incremental progress in addressing weaknesses and making progress toward audit readiness. Budgetary and asset information is widely used by DOD managers at all levels, so its reliability is vital to daily operations and management. DOD needs to provide accountability over the existence and completeness of its assets. Problems with asset accountability can further complicate critical functions, such as planning for the current troop withdrawals.

In May 2010, DOD introduced a new phased approach that divides progress toward achieving financial statement auditability into five waves (or phases) of concerted improvement activities (see appendix I). According to DOD, the components'

[15] GAO, Financial Management: Achieving Financial Statement Auditability in the Department of Defense, GAO–09–373 (Washington, DC: May 6, 2009).

implementation of the methodology described in the 2010 FIAR plan is essential to the success of the department's efforts to ultimately achieve full financial statement auditability. To assist the components in their efforts, the FIAR guidance, issued along with the revised plan, details the implementation of the methodology with an emphasis on internal controls and supporting documentation that recognizes both the challenge of resolving the many internal control weaknesses and the fundamental importance of establishing effective and efficient financial management. The FIAR Guidance provides the process for the components to follow, through their individual financial improvement plans (FIP), in assessing processes, controls, and systems; identifying and correcting weaknesses; assessing, validating, and sustaining corrective actions; and achieving full auditability. The guidance directs the components to identify responsible organizations and personnel and resource requirements for improvement work. In developing their plans, components use a standard template that comprises data fields aligned to the methodology. The consistent application of a standard methodology for assessing the components' current financial management capabilities can help establish valid baselines against which to measure, sustain, and report progress.

NUMEROUS CHALLENGES MUST BE ADDRESSED IN ORDER FOR DOD TO SUCCESSFULLY REFORM FINANCIAL MANAGEMENT

Improving the department's financial management operations and thereby providing DOD management and Congress more accurate and reliable information on the results of its business operations will not be an easy task. It is critical that the current initiatives being led by the DOD Deputy Chief Management Officer and the DOD Comptroller be continued and provided with sufficient resources and ongoing monitoring in the future. Absent continued momentum and necessary future investments, the current initiatives may falter, similar to previous efforts. Below are some of the key challenges that the department must address in order for the financial management operations of the department to improve to the point where DOD may be able to produce auditable financial statements.

Committed and sustained leadership. The FIAR plan is in its 6th year and continues to evolve based on lessons learned, corrective actions, and policy changes that refine and build on the plan. The DOD Comptroller has expressed commitment to the FIAR goals, and established a focused approach that is intended to help DOD achieve successes in the near term. But the financial transformation needed at DOD, and its removal from GAO's high-risk list, is a long-term endeavor. Improving financial management will need to be a cross-functional endeavor. It requires the involvement of DOD operations performing other business functions that interact with financial management—including those in the high-risk areas of contract management, supply chain management, support infrastructure management, and weapon systems acquisition. As acknowledged by DOD officials, sustained and active involvement of the department's Chief Management Officer, the Deputy Chief Management Officer, the Military Departments' Chief Management Officers, the DOD Comptroller, and other senior leaders is critical. Within every administration, there are changes at the senior leadership; therefore, it is paramount that the current initiative be institutionalized throughout the department—at all working levels—in order for success to be achieved.

Effective plan to correct internal control weaknesses. In May 2009, we reported[16] that the FIAR plan did not establish a baseline of the department's state of internal control and financial management weaknesses as its starting point. Such a baseline could be used to assess and plan for the necessary improvements and remediation to be used to measure incremental progress toward achieving estimated milestones for each DOD component and the department. DOD currently has efforts underway to address known internal control weaknesses through three interrelated programs: (1) Internal Controls over Financial Reporting (ICOFR) program, (2) ERP implementation, and (3) FIAR plan. However, the effectiveness of these three interrelated efforts at establishing a baseline remains to be seen. Furthermore, DOD has yet to identify the specific control actions that need to be taken in Waves 4 and 5 of the FIAR plan, which deal with asset accountability and other financial reporting matters. Because of the department's complexity and magnitude, developing and implementing a comprehensive plan that identifies DOD's internal control weaknesses will not be an easy task. But it is a task that is critical to resolving the longstanding weaknesses and will require consistent management oversight and monitoring for it to be successful.

[16] GAO–09–373.

Competent financial management workforce. Effective financial management in DOD will require a knowledgeable and skilled workforce that includes individuals who are trained and certified in accounting, well versed in government accounting practices and standards, and experienced in information technology. Hiring and retaining such a skilled workforce is a challenge DOD must meet to succeed in its transformation to efficient, effective, and accountable business operations. The National Defense Authorization Act for Fiscal Year 2006[17] directed DOD to develop a strategic plan to shape and improve the department's civilian workforce. The plan was to, among other things; include assessments of: (1) existing critical skills and competencies in DOD's civilian workforce, (2) future critical skills and competencies needed over the next decade, and (3) any gaps in the existing or future critical skills and competencies identified. In addition, DOD was to submit a plan of action for developing and reshaping the civilian employee workforce to address any identified gaps, as well as specific recruiting and retention goals and strategies on how to train, compensate, and motivate civilian employees. In developing the plan, the department identified financial management as one of its enterprisewide mission-critical occupations.

In July 2011, we reported[18] that DOD's 2009 overall civilian workforce plan had addressed some legislative requirements, including assessing the critical skills of its existing civilian workforce. Although some aspects of the legislative requirements were addressed, DOD still has significant work to do. For example, while the plan included gap analyses related to the number of personnel needed for some of the mission-critical occupations, the department had only discussed competency gap analyses for three mission-critical occupations—language, logistics management, and information technology management. A competency gap for financial management was not included in the department's analysis. Until DOD analyzes personnel needs and gaps in the financial management area, it will not be in a position to develop an effective financial management recruitment, retention, and investment strategy to successfully address its financial management challenges.

Accountability and effective oversight. The department established a governance structure for the FIAR plan, which includes review bodies for governance and oversight. The governance structure is intended to provide the vision and oversight necessary to align financial Improvement and audit readiness efforts across the department. To monitor progress and hold individuals accountable for progress, DOD managers and oversight bodies need reliable, valid, meaningful metrics to measure performance and the results of corrective actions. In May 2009, we reported[19] that the FIAR plan did not have clear results-oriented metrics. To its credit, DOD has taken action to begin defining results-oriented FIAR metrics it intends to use to provide visibility of component-level progress in assessment; and testing and remediation activities, including progress in identifying and addressing supporting documentation issues.

We have not yet had an opportunity to assess implementation of these metrics—including the components' control over the accuracy of supporting data—or their usefulness in monitoring and redirecting actions.

Ensuring effective monitoring and oversight of progress—especially by the leadership in the components—will be key to bringing about effective implementation, through the components' Financial Information Plans, of the department's financial management and related business process reform. If the department's future FIAR plan updates provide a comprehensive strategy for completing Waves 4 and 5, the plan can serve as an effective tool to help guide and direct the department's financial management reform efforts.

Effective oversight holds individuals accountable for carrying out their responsibilities. DOD has introduced incentives such as including FIAR goals in Senior Executive Service Performance Plans, increased reprogramming thresholds granted to components that receive a positive audit opinion on their Statement of Budgetary Resources, audit costs funded by the Office of the Secretary of Defense after a successful audit, and publicizing and rewarding components for successful audits. The challenge now is to evaluate and validate these and other incentives to determine their effectiveness and whether the right mix of incentives has been established.

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[17] Pub. L. No. 109–163, div. A, § 1122, 119 Stat. 3136, 3452 (Jan. 6, 2006). The National Defense Authorization Act for Fiscal Year 2010 made this strategic plan into a permanent annual requirement. Pub. L. No. 111–84, div. A, § 1108, 123 Stat. 2190, 2488 (Oct. 28, 2009), codified at 10 U.S.C. § 115b.

[18] GAO, DOD Civilian Personnel: Competency Gap Analysis and Other Actions Needed to Enhance DOD's Strategic Workforce Plans, GAO–11–827T (Washington, DC: July 14, 2011).

[19] GAO–09–373.

Well-defined enterprise architecture. For decades, DOD has been challenged in modernizing its timeworn business systems. Since 1995, we have designated DOD's business systems modernization program as high risk. Between 2001 and 2005, we reported that the modernization program had spent hundreds of millions of dollars on an enterprise architecture and investment management structures that had limited value. Accordingly, we made explicit architecture and investment management-related recommendations. Congress included provisions in the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 that were consistent with our recommendations. In response, DOD continues to take steps to comply with the act's provisions and to satisfy relevant system modernization management guidance. Collectively, these steps address best practices in implementing the statutory provisions concerning the business enterprise architecture and review of systems costing in excess of $1 million. However, longstanding challenges that we previously identified remain to be addressed. Specifically, while DOD continues to release updates to its corporate enterprise architecture, the architecture has yet to be federated[20] through development of aligned subordinate architectures for each of the Military Departments. In this regard, each of the Military Departments has made progress in managing its respective architecture program, but there are still limitations in the scope and completeness, as well as the maturity of the Military Departments' architecture programs. For example, while each department has established or is in the process of establishing an executive committee with responsibility and accountability for the enterprise architecture, none has fully developed an enterprise architecture methodology or a well-defined business enterprise architecture and transition plan to guide and constrain business transformation initiatives. In addition, while DOD continues to establish investment management processes, the DOD enterprise and the Military Departments' approaches to business systems investment management still lack the defined policies and procedures to be considered effective investment selection, control, and evaluation mechanisms. Until DOD fully implements these longstanding institutional modernization management controls its business systems modernization will likely remain a high-risk program.

Successful implementation of the ERPs. The department has invested billions of dollars and will invest billions more to implement the ERPs. DOD officials have said that successful implementation of ERPs is key to transforming the department's business operations, including financial management, and in improving the department's capability to provide DOD management and Congress with accurate and reliable information on the results of DOD's operations. DOD has stated that the ERPs will replace over 500 legacy systems. The successful implementation of the ERPs is not only critical for addressing longstanding weaknesses in financial management, but equally important for helping to resolve weaknesses in other high-risk areas such as business transformation, business system modernization, and supply chain management.

Over the years we have reported[21] that the department has not effectively employed acquisition management controls to help ensure the ERPs deliver the promised capabilities on time and within budget. Delays in the successful implementation of ERPs have extended the use of existing duplicative, stovepiped systems, and continued funding of the existing legacy systems longer than anticipated. Additionally, the continued implementation problems can erode savings that were estimated to accrue to DOD as a result of modernizing its business systems and thereby reduce funds that could be used for other DOD priorities.

To help improve the department's management oversight of its ERPs, we have recommended[22] that DOD define success for ERP implementation in the context of business operations and in a way that is measurable. Accepted practices in system development include testing the system in terms of the organization's mission and operations—whether the system performs as envisioned at expected levels of cost and risk when implemented within the organization's business operations. Developing and using specific performance measures to evaluate a system effort should help management understand whether the expected benefits are being realized. Without performance measures to evaluate how well these systems are accom-

[20] A federated architecture consists of a family of coherent but distinct member architectures in which subsidiary architectures conform to an overarching corporate architectural view and rule set.

[21] GAO–10–461; DOD Business Systems Modernization: Navy Implementing a Number of Key Management Controls on Enterprise Resource Planning System, but Improvements Still Needed, GAO–09–841 (Washington, DC: Sept. 15, 2009); GAO–08–896; GAO–08–866; DOD Business Systems Modernization: Key Marine Corps System Acquisition Needs to Be Better Justified, Defined, and Managed, GAO–08–822 (Washington, DC: July 28, 2008); GAO–07–860.

[22] GAO, DOD Business Transformation: Improved Management and Oversight of Business Modernization Efforts Needed, GAO–11–53 (Washington, DC Oct. 7, 2010).

plishing their desired goals, DOD decisionmakers including program managers, do not have all the information they need to evaluate their investments to determine whether the individual programs are helping DOD achieve business transformation and thereby improve upon its primary mission of supporting the warfighter.

Another key element in DOD efforts to modernize its business systems is investment management policies and procedures. We reported in June 2011[23] that DOD's oversight process does not provide sufficient visibility into the Military Department's investment management activities, including its reviews of systems that are in operations and maintenance made and smaller investments. As discussed in our information technology investment management framework and previous reports on DOD's investment management of its business systems,[24] adequately documenting both policies and associated procedures that govern how an organization manages its information technology projects and investment portfolios is important because doing so provides the basis for rigor, discipline, and repeatability in how investments are selected and controlled across the entire organization. Until DOD fully defines missing policies and procedures, it is unlikely that the department's over 2,200 business systems will be managed in a consistent, repeatable, and effective manner that, among other things, maximizes mission performance while minimizing or eliminating system overlap and duplication. To this point, there is evidence showing that DOD is not managing its systems in this manner. For example, DOD reported that of its 79 major business and other IT investments, about a third are encountering cost, schedule, and performance shortfalls requiring immediate and sustained management attention. In addition, we have previously reported[25] that DOD's business system environment has been characterized by: (1) little standardization; (2) multiple systems performing the same tasks; (3) the same data stored in multiple systems; and (4) manual data entry into multiple systems. Because DOD spends billions of dollars annually on its business systems and related IT infrastructure, the potential for identifying and avoiding the costs associated with duplicative functionality across its business system investments is significant.

CLOSING COMMENTS

In closing, I am encouraged by the recent efforts and commitment DOD's leaders have shown toward improving the department's financial management. Progress we have seen includes recently issued guidance to aid DOD components in their efforts to address their financial management weaknesses and achieve audit readiness; standardized component financial improvement plans to facilitate oversight and monitoring; and the sharing of lessons learned. In addition, the DCMO and the DOD Comptroller have shown commitment and leadership in moving DOD's financial management improvement efforts forward.

The revised FIAR strategy is still in the early stages of implementation, and DOD has a long way and many longstanding challenges to overcome, particularly with regard to sustained commitment, leadership, and oversight, before the department and its military components are fully auditable, and DOD financial management is no longer considered high risk. However, the department is heading in the right direction and making progress. Some of the most difficult challenges ahead lie in the effective implementation of the department's strategy by the Army, Navy, Air Force, and DLA, including successful implementation of ERP systems and integration of financial management improvement efforts with other DOD initiatives.

GAO will continue to monitor the progress of and provide feedback on the status of DOD's financial management improvement efforts. We currently have work in progress to assess implementation of the department's FIAR strategy and efforts toward auditability.

As a final point, I want to emphasize the value of sustained congressional interest in the department's financial management improvement efforts, as demonstrated by this Subcommittee's leadership.

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[23] GAO, Department of Defense: Further Actions Needed to Institutionalize Key Business Systems Modernization Management Control, GAO–11–684 (Washington, DC: June 29, 2011).

[24] GAO, Business Systems Modernization: DOD Needs to Fully Define Policies and Procedures for Institutionally Managing Investments, GAO–07–538 (Washington, DC: May 11, 2007); Business Systems Modernization: Air Force Needs to Fully Define Policies and Procedures for Institutionally Managing Investments, GAO–08–52 (Washington D.C.: Oct. 31, 2007); Business Systems Modernization: Department of the Navy Needs to Establish Management Structure and Fully Define Policies and Procedures for Institutionally Managing Investments, GAO–08–53 (Washington, DC: Oct. 31, 2007).

[25] GAO, Opportunities to Reduce Potential Duplication in Government Programs, Save Tax Dollars, and Enhance Revenue, GAO–11–318SP (Washington, DC: Mar. 1, 2011).

Chairwoman McCaskill and Ranking Member Ayotte, this concludes my prepared statement. I would be pleased to respond to any questions that you or other members of the subcommittee may have at this time.

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APPENDIX I: FIAR PLAN WAVES

The first three waves focus on achieving the DOD Comptroller's interim budgetary and asset accountability priorities, while the remaining two waves are intended to complete actions needed to achieve full financial statement auditability. However, the department has not yet fully defined its strategy for completing waves 4 and 5. Each wave focuses on assessing and strengthening internal controls and business systems related to the stage of auditability addressed in the wave.

Wave 1—Appropriations Received Audit focuses on the appropriations receipt and distribution process, including funding appropriated by Congress for the current fiscal year and related apportionment/reapportionment activity by the OMB, as well as allotment and sub-allotment activity within the department.

Wave 2—Statement of Budgetary Resources Audit focuses on supporting the budget-related data (e.g., status of funds received, obligated, and expended) used for management decision making and reporting, including the Statement of Budgetary Resources. In addition to fund balance with Treasury reporting and reconciliation, other significant end-to-end business processes in this wave include procure-to-pay, hire-to-retire, order-to-cash, and budget-to-report.

Wave 3—Mission Critical Assets Existence and Completeness Audit focuses on ensuring that all assets (including military equipment, general equipment, real property, inventory, and operating materials and supplies) that are recorded in the department's accountable property systems of record exist; all of the reporting entities' assets are recorded in those systems of record; reporting entities have the right (ownership) to report these assets; and the assets are consistently categorized, summarized, and reported.

Wave 4—Full Audit Except for Legacy Asset Valuation includes the valuation assertion over new asset acquisitions and validation of management's assertion regarding new asset acquisitions, and it depends on remediation of the existence and completeness assertions in Wave 3. Also, proper contract structure for cost accumulation and cost accounting data must be in place prior to completion of the valuation assertion for new acquisitions. It involves the budgetary transactions covered by the Statement of Budgetary Resources effort in Wave 2, including accounts receivable, revenue, accounts payable, expenses, environmental liabilities, and other liabilities.

Wave 5—Full Financial Statement Audit focuses efforts on assessing and strengthening, as necessary, internal controls, processes, and business systems involved in supporting the valuations reported for legacy assets once efforts to ensure control over the valuation of new assets acquired and the existence and completeness of all mission assets are deemed effective on a go-forward basis. Given the lack of documentation to support the values of the department's legacy assets, Federal accounting standards allow for the use of alternative methods to provide reasonable estimates for the cost of these assets.

In the context of this phased approach, DOD's dual focus on budgetary and asset information offers the potential to obtain preliminary assessments regarding the effectiveness of current processes and controls and identify potential issues that may adversely impact subsequent waves.

Senator MCCASKILL. Thank you, Mr. Khan, and thank you for all of your work in this area.

We will begin questions now. Let me start with using an example, because the challenge of this hearing is to make this product consumable to the public and to my fellow Senators in a way that allows us to keep attention and pressure on this issue.

I think one of the reasons that DOD has failed at this for so long is because it never received the kind of attention and emphasis that it should have through the years, particularly as it relates to sun-setting legacy systems and interfacing between the various

functions of the military. The military, I think, is famous for its silo capability, and no place has the silo been more prevalent than in the management of financial information within DOD.

But there are real consequences to the failures that have continued to plague DOD in terms of financial management. It caught my eye that there was a report just issued a few days ago, and this is from the IG of DOD. The cost of war data for Marine Corps contingency operations were not reliable.

What this report said is that the data—out of $4.3 billion in Marine Corps transactions, the IG found that 86 transactions valued at $1.82 billion were not properly supported. In addition, almost $1.5 billion in transactions were reported in the wrong operation or cost category. As a result, data provided to Members of Congress and other decisionmakers did not reflect how funds were really actually spent.

Now, it is astonishing to me that we would have almost half of the transactions in a contingency operation not properly supported and that we would have $1.5 billion in those transactions in the wrong cost or operations category.

I want to give you a chance, Secretary Commons, to respond to the report. I know that management has been asked to provide completion date for the recommendations on this audit by August 22. I would ask you that this committee would also like to receive the completion date for the recommendations that have been made in this audit.

But I want to give you a chance to respond to this recent report that Congress is not getting accurate information about how we are spending our money in Iraq and Afghanistan when it comes to Marine Corps operations.

Ms. COMMONS. Madam Chairman, I believe for that report, it was a matter of establishing a cost code to report those costs, and we had not promulgated that information to all of our field activities. So some of them did, in fact, record it in the wrong category.

We are in the process of correcting that and putting out policy so that they will know exactly how to report the costs in the proper category. We will work with that. We will be happy to give you the information about the completion date and the precise actions that we will take to make sure that that does not happen in the future.

Senator MCCASKILL. It is very troubling that we are not getting cost codes to people in the field. The taxpayers of this country have spent an enormous amount of money on these contingency operations. I don't need to go through the record as to how many different ways we have figured out that we weren't keeping good track of the money in contingency operations.

So we will look forward to responses on this and, most importantly, look forward to a signal from the IG that they are more comfortable that we are keeping track of contingency operations spending.

Let me now briefly go to the Global Combat Support System (GCSS)-Army and GCSS-Marine Corps systems. One of the elements of the FIAR plan, which is the FIAR plan that people have referred to, is the existence and completeness of critical assets.

In a report that is scheduled to be issued tomorrow, GAO says that DOD's business systems make it difficult to obtain timely and

accurate information on the assets that are present in theater and operations, and DOD lacks a comprehensive plan for addressing the problem.

They go on to say ongoing efforts to modernize or replace DOD business information systems, including systems supporting supply chain management, are intended to improve data quality. However, we have found that data quality problems persist, and these systems are not designed to routinely share data across organizational boundaries, such as among Military Departments.

So this is the situation we have. We have the Army and the Marine Corps sharing equipment in theater. Anybody disagree with that—that they are sharing equipment in theater, the Army and the Marine Corps?

Okay. They both are designing systems to track real-time equipment in theater, equipment that they are sharing. Now, $3.9 billion we are planning to pay for this system for the Army, almost $4 billion for a system to track equipment for the Army. We are paying another $934 million, or another $1 billion, to develop and field the same kind of system for the Marine Corps to track the same equipment.

Now, here is the punch line. They don't speak to each other. Now, how does this happen? How do we end up buying $5 billion worth of systems to track the same equipment that don't talk to each other? That is for, obviously, the Army and the Navy, but also I would love to hear from Ms. McGrath or Secretary Hale on this question also.

Ms. MCGRATH. I am happy to start.

The two systems, although they sound very similar in the capabilities they deliver for the respective organizations, are embedded into very different, I will say, business processes that they execute their both supply and maintenance infrastructures.

So, although they sound very much the same, they do operate within two very different infrastructures and processes, and they are not one-for-one used by the same people. So, although, as I mentioned, they sound very similar, there is a lot more detail behind the execution of those systems and those capabilities that those systems enable.

Senator MCCASKILL. They couldn't use the same system?

Ms. MCGRATH. That said, I do believe that because the Marine Corps has fielded, GCSS-Marine Corps—they are certainly further ahead in their implementation than the Army is to date—that the Army did, as part of their analysis of alternatives (AoA), it is my understanding, take a look at the GCSS-Marine Corps capability as part of their AoA prior to making the decision to go with a different application to deliver their capability.

Senator MCCASKILL. I would like to find out who that person was that made that decision, that looked at the Marine Corps. I would like the analysis as to why the Marine Corps system was not adequate and why we had to spend another $4 billion.

That is a significant price tag, and it is—there better be damned good reasons as to why the Marine Corps system was inadequate, if it was so inadequate that you had to spend another $4 billion to get the job done.

So, I would appreciate knowing who the decisionmakers were on that item. I would like to have a written analysis of why the Marine Corps system was inadequate and why it remains inadequate today.

In light of our current fiscal climate, why they cannot suck it up and use the same system the Marine Corps is using to track equipment since it has been fielded.

Ms. MCGRATH. Yes, ma'am. There is an AoA that is required to be done on every one of those business systems. So, for us to provide to you, we could do that in the very near-term.

[The AoA for the Global Combat Support System Army, follows:]

[See annex printed at the end of this hearing].

Senator MCCASKILL. Okay, great. Thank you very much.

Senator Ayotte.

Senator AYOTTE. Thank you, Madam Chairman.

I wanted to follow up on the IG's report. I know that you are going to report back to this committee, but I think what that report showed is that the reconstruction money, defense dollars, are particularly susceptible to waste, fraud, and mismanagement, in conjunction with the Overseas Contingency Operations (OCO) funding.

What is it that—I know we are going to get a report back. But Secretary Hale, what is it that you see, having reviewed that report, that needs to be done to DOD to improve that process, the financial management of the OCO funding?

Also, I guess in conjunction with that, the other piece of that report, which I am deeply interested in, had to do, of course, with the money that was going to our enemy because we were contracting in some instances with those that were collaborating with our enemy. Senator Brown and I have a bill that is incorporated in the NDAA.

But I think also recently when we asked General Dempsey in his confirmation hearing about this topic, he pointed out that there was a need for more contracting officers, better-trained contracting officers.

So I throw all of that at you and would ask you to say, when you reviewed that report, what was the impression you had in terms of what we need to do differently? I would like to have Mr. Khan also comment on that.

Mr. HALE. Let me focus on the corruption issues in Afghanistan. There are major problems, Senator Ayotte. I think you know that. We have established a task force to try to reduce it where we can. We are dealing with a culture that is just different than ours.

But I believe they are having some success. They have started vetting contractors and subcontractors to try to weed out those that have bad records. They are trying to work with Afghan officials, the ones that we can work with well, to minimize corruption.

We have gotten most of the cash off the battlefield. We pay for hardly anything in U.S. cash now in Afghanistan. It is almost all electronic funds transfer. Where we can, we pay in afghanis, which are a lot harder to export to outside the country.

So I think there is some progress. But it is an uphill fight, and we are dealing with just a very different culture than the one we

have. So the best answer I can give you, it is going to be an ongoing issue, I think, as long as we are involved in Afghanistan.

Senator AYOTTE. Can you also follow up to the issue that the chairman raised in terms of the misallocation of funds in terms of the OCO funding?

Mr. HALE. I am going to defer that one to Ms. Commons. I, frankly, have not reviewed that particular report. I think she answered it. I will look at it, but I have not.

Senator AYOTTE. I know that you had answered to it, but I thought maybe you might have some insight on that as well.

Mr. HALE. I would underscore what she said. We need to fix it, and I think what I heard Gladys say was we need to get the right codes out there.

I don't know that we violated the Anti-Deficiency Act or anything like that. But we need to get it in the right category so we are supporting and providing the information that we all need. Not just you, I need it, and we all need it. So we need to fix it.

Senator AYOTTE. I also wanted to ask you about the milestones that have been completed since you submitted your last report on DOD's FIAR plan in November 2010. According to your most recent report, which you submitted in May, DOD accomplished only 1 milestone and 11 were pushed out to future dates.

So, as I understand the math, 1 for 12. Your report also identifies another set of milestones called the interim goals for initial FIAR opportunities—excuse me, priorities—and the results here aren't much better, with four milestones being met and nine pushed out to later dates.

So if we put that all together, we are basically 4 for 13 on these interim goals, and DOD has been citing those as things that it has been focusing on. But if we look at it as 5 for 25, shouldn't we be concerned about this? What does it suggest in terms of DOD's ability to meet the 2017 deadlines?

If Mr. Khan can also comment on this, I would appreciate it.

Mr. HALE. I haven't counted them in the fashion you have, but I will accept your math. I like to look at the ones we have actually started, and I think they are so important. We haven't done any in the past in terms of validations. We haven't had any goals, nor have we done any to speak of.

We actually have an audit of a Military Service underway. First time that has ever happened in DOD. I won't go through them all again, but we have a number of the validations.

I don't want to waste the money by pushing if we are not ready, but I hear your point that we need to pick up the pace in terms of meeting these deadlines. I share your concern.

Again, I haven't counted them quite that way, but I will accept your math and accept the challenge that we need to pick up the pace.

Senator AYOTTE. Is there anything more that we can be doing as Congress to help this process move forward? Because, obviously, you are working toward it. Are there obstacles that we have put in place, or can we better give you the tools that you are missing right now?

Mr. HALE. I rarely ask for hearings, but I think some steady pressure, hopefully moderate pressure, is a good idea. It focuses us,

just as I had a boss early in my career who said to me when I became confirmed, "Yours is the power to call meetings."

That sounded very bureaucratic, but I learned that he was right because it focused attention. Well, yours is the power to call hearings, and it also focuses attention.

There are some things you can do. One in particular. We haven't talked about it, but we have proposed a course-based certification program for defense financial managers, similar to the one in acquisition. It will establish a framework we don't have now. It will allow us to require courses.

We want it to be mandatory with appropriate waivers. That will require legislation. It is in the House bill. I believe it is in the Senate Armed Services Committee (SASC) bill. I think the SASC language is very good, and I hope that it survives in conference. So I would appreciate your help there.

I will say one more thing you can do, and I know you can't do this personally. Don't put us on another Continuing Resolution for 6 months. I can't tell you how much time that drained from financial managers. It is very difficult to manage, and it also was devastating, I think, to our contracting workforce.

So if there is any way we can avoid that, I would hope you would try.

Senator AYOTTE. Secretary Hale, I have to tell you, this is music to my ears because I am the newest appointment to the Senate Budget Committee, and I am anxious for us to actually get down to the hard work of putting together a budget. I couldn't agree more that this short-term funding is not the best way to fund a government, nor is it the best to deal with the fiscal crisis that we face.

Mr. HALE. A debt ceiling agreement would help, too.

Senator AYOTTE. Well, there you go. [Laughter.]

I don't know if Mr. Khan had any comments? My time is up. But if you had any comments?

Mr. KHAN. Just to add to what Mr. Hale said, I think there have been slippages in milestones. The more important ones to view and to keep track of are the slippages in the ERP milestones.

2017 is going to be upon us very soon, sooner than we expect. Without the implementation or effective implementation of those ERPs within the Services, it will be a challenge reaching the 2017 milestone to be audit ready.

Thank you.

Senator AYOTTE. Thank you.

Senator MCCASKILL. Thank you.

I do want to say for the record that the irony is not lost on at least the subcommittee chairman that it does take some nerve for us to call a hearing calling you to task for your lack of fiscal management in light of what we are busy trying to get done here in the halls of Congress this week.

Clearly, this could be in the category of, "Hello, pot, this is kettle." [Laughter.]

So I do get that part.

Senator Begich, questions?

Senator BEGICH. Thank you very much, Madam Chair.

Let me, if I can, and whoever can answer this, and then I may have some additional follow-up to it.

First, we know the Corps of Engineers—and maybe this is for Secretary McGrath and Secretary Hale. I am not sure which one. But the Corps of Engineers and Defense Contract Audit Agency have auditable financial statements. I heard you mentioned a little bit, but I want to follow through on this. They are able to be audited. What are we learning from that?

I guess, just so you know, I am just a little frustrated. I know a lot of you folks are new to the process here. But I am frustrated that we are not—it is one of the largest units, and we can't audit ourselves. So I won't go through that lecture.

But how does the Corps do it? What are you doing to replicate or improve on that? Why is it going to take you 6 years?

Mr. HALE. The Corps is a lot smaller. I don't take away from their accomplishment one bit. It took them about 8 years, I might add, to get there. But they are a lot smaller, and that makes it easier.

We have learned, I think, from what they have done and are trying to copy their successes. Even more importantly, we are finally, as I have said, auditing the financial statement, one of them, of a Service, the Marine Corps statement of budgetary resources. We are learning a great deal from that.

It is discouraging in some ways because I think we have learned that our business processes are simply not standard, sufficiently standard to accommodate an audit, and I believe that is going to be true throughout all of the Military Services.

To start to fix that, I have asked the Services to assemble teams, probably from their audit agencies, that should go out to the commands and get a report on financial processes and make an assessment for us about what we have to do to improve them so that they are auditable. I hope that we can get that started soon. We are working internally to move ahead.

So that is an important lesson learned. The other reason it takes so long are the systems. We simply have to have them. I think it is particularly true in the Army and the Air Force. Their systems are sufficiently old that they just aren't going to support what an audit requires.

They take time to implement and money, and both are in short supply, particularly the money. I am not making excuses. I know it sounds like whining. I would like to go faster, too.

Senator BEGICH. No, let me walk through this. Are you going to do within each one of those kind of—and it sounds like you are, to some extent—but instead of waiting for the whole thing to be developed, are you going to do subaudits?

Mr. HALE. Yes.

Senator BEGICH. I know when I was on my local assembly, I was chair of the Budget and Audit Committee for, I think, 2 or 3 years. We were given a presentation to change the system and do the whole thing.

They were going to do the whole thing all at once, which was going to be a disaster. You could see it coming. We forced them into kind of these micro elements so we could actually refine it as it moved along. Is that the game plan?

Mr. HALE. Yes. That is the game plan and a focused strategy. So let us focus on the information we most use to manage, which makes sense, let us start with the stuff that we actually need, which would include the budget, because we manage the place based on budgets, and also knowing where our assets are and how many we have because that is critical to warfighters.

So we focused first on that. We will take pieces within that as well. These validations that I spoke of are essentially mini audits. Pick a section they think we are ready to go. We will hire an independent public accountant or, in some cases, the IG, and ask him to go in and give us advice.

We are already finding that we are learning a lot from those because they can tell us, "Hey, you are doing okay here, but you are not doing okay there. You have to change."

Senator BEGICH. Let me ask you in regards to assets. I am trying to follow up on what the chairwoman was getting to. That is so the Army versus the Air Force versus the Marine Corps, is their management of their assets systems different, or will be different? I am seeing a head shake "yes" here. So it wasn't your words, but I saw a head over here——

Mr. HALE. I would say they have different processes.

Senator BEGICH. That is not what I am asking. I am not sure—an asset is an asset, okay? As a former mayor, I had a police department, a fire station. We had the same system. They had different missions. They had sub-missions. Then I had public works, libraries. Everyone had a different mission, but the asset management was the same.

So, as a mayor, if I wanted to know, at any given point, what my capacity is in an emergency, what kind of equipment was available department-wide, city-wide, I could do that.

Ms. MCGRATH. So their total asset visibility is what you are talking about, and the GCSS capabilities that we have discussed, both the Army and the Marine Corps, are their respective contributors, if you will, to that total asset picture.

There is another, I will call it a command-and-control system that has a responsibility to bring that asset visibility from the respective components into that common operating picture. Today, my understanding is that we don't have that total asset visibility in the aggregate because we don't have defined, I will call them standards across DOD.

Senator BEGICH. That is your goal?

Ms. MCGRATH. Yes, absolutely. Moving toward not only the standards within the logistics space for asset visibility, but total asset visibility, period, irrespective of commodity, be it a ship or a plane or a piece part.

That is tied to the overarching logistics, I will call it road map, so that they have that common operating picture, both on the field and in the business space.

Senator BEGICH. Let me ask you another question in regards to the layers. As you guys are doing your work, and not to be disrespectful, but like us, we come and go. It is the layers deeper down.

What is going to change in that culture after how many years of no audits, forever? So how are you going to change that?

I know you are going to say you are going to do training. You are going to do this and do that. But the reality is some of those people will have to go. That is just the way it is. Because I know this—you cannot retrain 100 percent of the people to change the way they have been doing business for the last umpteen years.

One, are you going to do that? Do you have the systems to do it and a process that is going to be immediate, not just, well, we have to kind of move them over here and move them over there to survive?

Because if you don't do that, it doesn't matter what system you have. Because the people—and this is my simplistic way of saying it—at the front desk, putting the data in, wherever they may be stretched across the globe, wherever our assets are—if they are not trained or understand the new culture, you are going to still have problems down the road.

So to me, it is going to be those layers deeper down. What are you going to do to dramatically change that culture? Are you going to be able to do and have the wherewithal to say to them we are not doing business that way. If you don't like working here, then get the hell out because we have to change the way we do business.

Who wants to take that one?

Ms. MCGRATH. Again, I will start. The change management challenge, I think, is the largest challenge. There are many challenges——

Senator BEGICH. The change—the culture?

Ms. MCGRATH. The culture, right. The change management challenge, articulating both the business value and the need to change so that people understand what their contribution is to the overall business outcome you are trying to achieve. Here we are talking about financial auditability.

Some of the things that have been discussed in terms of taking a cross-functional look at achieving auditability we are putting in place largely due to a lot of the tools that Congress has provided us in the NDAA legislation, ensuring that we have done appropriate business process reengineering. So the front desk individual can't do things the way they are accustomed to doing. They must change.

Senator BEGICH. So my question is, if you can't get them to change, do you have the mechanisms to get rid of them? That is the ultimate question because the human element is what starts the train moving.

Ms. MCGRATH. I think, through the systems implementations and the drive to the business outcomes driven by not only the top leadership but layers down is what is required to make those changes happen. I think that all of the tools we are putting in place, institutionalizing where we can, wherever we can, will help enable that sustained practice.

Senator BEGICH. Simple question—I am going to end here. Do you have the capacity to get rid of people who are not—it is human nature in any organization change that you are going to have a percentage that will not adapt. That will want to keep their job, but will not adapt.

That is the ultimate question, because if you don't get that information flowing on the front end, I guarantee you, whatever you see

on the top, it is going to be a problem. That is my only question—yes or no?

It is a pretty—you should say yes to this. I am trying to help you.

Ms. MCGRATH. Well, no, no——

Mr. HALE. Yes, but this is not a strength of the Federal Government. It is very difficult to terminate employees. But, yes, the process exists. It is just it is cumbersome, and it tends to take a long time.

Senator BEGICH. But you understand the problem?

Ms. MCGRATH. Absolutely, and I think that driving a change management through efficiencies and effectiveness at the organization will enable those people to I want to say get out of the way, whether——

Senator BEGICH. Think about their future?

Ms. MCGRATH. Think about their future—much better words.

Senator BEGICH. Okay. I will leave it at that.

Thank you, Madam Chair.

Senator MCCASKILL. Senator Cornyn?

Senator CORNYN. Thank you, Madam Chairman.

Thank you all for coming today.

I am here because I am concerned about our national security. During tight budgetary times, I know DOD is going to have to be doing more with less. I intend to make it one of my responsibilities to make sure it is adequate to the task and the challenges we face.

But as someone who believes that national security is the number one responsibility of the Federal Government, I simply can't explain to my constituents some of the anecdotes that we have heard with regard to financial mismanagement. I appreciate what you said, Secretary Hale, that a little firm pressure is a good thing, and I just wanted to show up and let you know I am going to be contributing to that. [Laughter.]

That pressure is going to get firmer and firmer and firmer, using every tool that I have, whatever that may be.

But when I read an interview in 2008 that the Comptroller at the DISA gave to Federal News Radio where he acknowledged both the problems with the financial management discipline that you talked about, as Senator Ayotte identified, the 10-to-1 savings, $10 basically saved for every dollar invested in financial management system improvement.

But they actually, in this radio interview, said that they found $400 million at DISA. This is for an agency that has 16,000 personnel. So, if you multiply that across all the personnel, assuming you could do that, it is shocking, to say the least.

I was delighted to hear Secretary Panetta testify, both informally and at his hearing, that he intended to make this a priority. I appreciate all the work that each of you are doing to make it a reality. But it strikes me along the lines that Senator Begich mentioned, that what is critical is to have goals, resources, and accountability.

I know the chairwoman well enough and Senator Ayotte and the rest of us enough to know that we intend to provide you with not only the goals, but the resources and also the accountability that is going to be necessary for your success and our collective success.

Secretary Hale, in 2006, you headed up a task force to look into the possibility of creating a CMO for the Secretary of Defense. In your report, your task force recommended creating a position with responsibility and authority to be the CMO/Chief Operating Officer for DOD, a principal under the Secretary of Defense for management and CMO.

There continues to be difficulty with not having senior-level managers armed with appropriate budgetary and organizational authority needed to direct Under Secretaries and Service Secretaries responsible for the day-to-day management of DOD's financial improvement and business transformation efforts across all the functions within DOD.

Why isn't the approach that you recommended when you headed up the task force needed today?

Mr. HALE. I think DOD chose another route, which is to vest that authority in the Deputy Secretary. They wanted one Secretary, and I understand that.

They did create a DCMO. She is sitting to my left. I think it has been very valuable to DOD. It has given somebody who has the experience, the time to focus on the systems.

They used to fall as a collateral duty to the Comptroller, in many respects, and it wasn't happening because the budget was so overwhelming in terms of time. It has given somebody who has the experience and the time the opportunity to focus on performance management and other things that Beth does.

So I believe it has worked out well. They did choose a different route, and I accept that. We were an advisory group when I issued that report. I wasn't, I think, the lead, but I was on the team. But I think it is working reasonably well.

I am pleased with the DCMOs—and not just, I might add, at OSD. Let me add something maybe, Madam Chairman. We had a hearing on efficiencies. We just finished a review with each of the Services and the defense agencies.

I confess I was skeptical going in about how well we were doing with the plans for those—that is $178 billion in fiscal year 2012 to fiscal year 2016. I am much more encouraged. The Services are clearly taking this very seriously. They all have management structures. Generally, they have plans for the fiscal year 2012 and fiscal year 2013, or where they can't meet them, and there are cases, they are looking actively to substitute other efficiencies.

So I believe I teamed with Beth, the DCMO, in that effort, and I think she was very helpful, and her office. So I am feeling better about the $178 billion, and I know that we are going to have to look for more and that we will need to continue that oversight.

So I just wanted you to know that we are working the issue, and wherever Secretary Gates is, I want to tell him, too.

Senator CORNYN. Ms. McGrath, since you are the DCMO, how do you feel about the recommendations of Secretary Hale's task force and the alternative direction DOD has taken? Do you feel that you have the resources you need not only to do your job, but to hold other people in DOD accountable?

Mr. HALE. Can I just clarify one thing? I wasn't the Secretary at the time. That was an advisory group. I just want to make sure

that I didn't make the recommendation as the Secretary. I was on the Defense Business Board.

Senator CORNYN. If I misspoke, I apologize. I knew you headed up the task force, or at least that is in my notes here.

But Ms. McGrath?

Ms. MCGRATH. I feel that the DCMO has the authority through the CMO, or the Deputy Secretary of Defense, where I am going to say all of this conversation comes together to execute both the priorities, some of the oversight that Mr. Hale talked about in terms of efficiencies, both the follow-through and execution, and the identification of new ones.

I work very closely with the Under Secretaries of the Military Departments, as the CMOs of the Military Departments. Again, they are looking from a corporate perspective how do things integrate. So, I actually do think it is an effective structure and that DOD has capitalized on the opportunity and is using it effectively.

Senator CORNYN. Mr. Khan, do you agree or disagree?

Mr. KHAN. The positions have been established, and people have filled those offices. We are waiting for how these particular offices are going to result in specific actions.

One of the positives that maybe I can point out, and that is the example we are looking for, was the recent removal of the DOD personnel security from DOD high risk. That is a positive. We are looking for the same type of intensity, same type of commitment and leadership for the removal of the other high-risk areas.

So we are much more focused on results. There have been plans. There have been governance boards. The role of the CMO or the CMO organization at the Military Departments is to drive the transformation.

As far as from what we can see, it is a start, but we want to see the results. The results would be how it impacts, how the role, responsibilities, and action impact some of the other longstanding and pervasive weaknesses. We would like to see some more action on the other high-risk areas—financial management being one area.

Senator CORNYN. Thank you. My time is up.

Senator MCCASKILL. Thank you, Senator.

Senator Manchin.

Senator MANCHIN. Thank you, Madam Chairman.

I am so sorry that I was running late. I had another meeting to be at, but I wanted to fill in a few things.

First of all, the concern, I think, that Senator Ayotte talked about is what we have is with what is happening and what we are hearing about happening as far as the corruption, outright thievery that goes on over in Afghanistan and Pakistan and every place else that we seem to be doing business over there.

It is hard for me to understand how $10 million can go missing in cash. The report, I think, is $10 million a day, up to about $10 million a day. Did you touch on this, Kelly?

Senator AYOTTE. I didn't touch on the numbers, but, yes, talked about it.

Senator MANCHIN. But $10 million, that is $3.6 billion a year. This has been going on for I don't know how long. I have been over there a few times. So we see a lot of concerns we had. But I can

follow up with another question that might be something more on your line, if that is not in your line on the money.

Mr. HALE. It is in my line. Anything to do with money. I am not familiar with the specific numbers. I will say what I said earlier.

There is a problem in Afghanistan. It is a different culture. We are doing our best to push for less corruption. We have established a task force under the command now of General Allen. It has done a number of specific things—vetting of contractors and subcontractors to try to be sure that we are dealing with people that are reliable, working with the officials where we can work with them to try to minimize this problem.

We don't use American cash anymore in Afghanistan. Almost all of it is electronic funds transfer. We are trying wherever we can to pay local vendors in afghanis. It is a lot harder to export those to other nations.

All of these are good things, and we need to continue, and we need to push this hard. I think we probably won't fully solve the cultural issues. We will do our best.

Senator MANCHIN. No, I know that. I can give you a few examples.

I have a constituent who is in the military and working with the Afghanistan Ministry of Interior, Public Affairs. He tells me that 250 to 1,000 vehicles that we purchased through U.S. tax dollars are missing. That is a lot of vehicles that go just missing.

I was a former Governor, and all of us have had former positions we were responsible for offices. I was responsible for the State budget and how we procured. It all starts with how you purchase. If you don't have a good purchasing system, you are not going to have good auditing because you can't follow it.

We revamped our whole purchasing, and we had to have a purchase order. It had to be one that was of need. The purchase order followed into a purchasing agreement. The purchasing agreement followed into basically a complete auditing system that had to show how we disposed of it also.

I don't know why it is so complicated, and why you—has it just morphed into something so large that it is just unmanageable for you all?

Mr. HALE. I think we are just dealing with different attitudes than we do in the United States toward accountability.

Senator MANCHIN. I am not even saying over there. I am just saying how we do our business.

Mr. HALE. Oh, here.

Senator MANCHIN. Yes, I mean——

Mr. HALE. I am not dealing with 250,000 vehicles missing in the United States. I need to know about that.

Senator MANCHIN. Well, I am——

Mr. HALE. Is that here? Is that what you are saying?

Senator MANCHIN. I am just asking when was the last time we had a really good audit for the entire DOD?

Mr. HALE. Well, we have never had a successful one.

Senator MANCHIN. That is what I thought.

Mr. HALE. A financial audit. I hear your point. But I do believe that—I mean, I am not aware of——

Senator MANCHIN. I am brand new. I am the new kid on the block here. I can't—it is just inconceivable for me how DOD, being one of our largest, and you can see the amount of money we put into it. We were told yesterday that we spend more money on defense than all the other nations combined.

I don't know if that is accurate or not, but it might be right close.

Mr. HALE. Might be.

Senator MANCHIN. How we don't have a handle on this thing.

Mr. HALE. Let me come at that differently. I believe we do have reasonable financial controls—and I know this probably won't be a popular statement—in DOD on the budgetary—on the money you give us. I think we aren't over there spending your $671 billion that you gave us any way we want.

I say that for two reasons. One, we have 60,000 people who do have a culture of stewardship. I have a lot of personal familiarity with them, and I know they do.

But we also have external auditors. We have about 3,000 auditors in DOD watching our every program and financial move. It is really a notch in their belt to find that we violate the law or the rules. That should be. That is their job.

Over the last 5 years, if you look at violations of the major Federal law governing financial management, the Anti-Deficiency Act (ADA), 20 cents out of every $1,000—20 cents out of $1,000—actually resulted in an ADA violation. That is 20 cents too much. My goal is zero, and it is the only right goal. But it is 200th of 1 percent.

I don't think it suggests a system that has no reasonable controls. I think we do. We have problems. We need to pass an audit. But we do, I believe, have reasonable controls.

I might add that the amount of ADA violations are significantly less than in the non-defense agencies, taken as a whole.

Senator MANCHIN. Let me just say this, that you know that with the financial challenges we are having right now, and we have our problems, too. So none of us are immune from those problems. But you know there are going to be some adjustments as far as the budget—and your budget and everybody's. I think you——

Mr. HALE. Say it is not so, Senator.

Senator MANCHIN. You see that coming. To what extent everyone believes—everyone believes since you all really don't have an accurate audit, then whatever we have to cut, we could cut there, and it could probably be made up in the waste or fraud or abuse.

What do you believe truly is feasible through fraud, waste, and abuse right now before you start cutting into what we call the quick of the matter?

Mr. HALE. I can't give you a number. I think that fraud that goes on——

Senator MANCHIN. We are going to cut—let us say we can cut $400 billion.

Mr. HALE. I certainly don't think you can get anywhere near that from fraud, and waste is in the eye of the beholder.

Senator MANCHIN. I am saying over a 10-year period. I have heard anywhere from $400 billion to maybe $800 billion over 10 years. That is $40 billion to $80 billion a year.

Mr. HALE. I don't think you can get anywhere near $400 billion with fraud, waste, and abuse by any reasonable definition.

Senator MANCHIN. Over a 10-year period?

Mr. HALE. Over a 10-year period. We will have to make changes in our strategy in order to accommodate those kinds of cuts. We will also look for efficiencies of the sort that we identified and that we are now monitoring, $178 billion over 5 years in that case. But it is not going to do it by itself.

We will have to cut back numbers of troops. We will have to delay investments, and we will have to look at that in a strategic context.

Senator MANCHIN. Then what you are saying, out of a $700 billion a year budget, you don't believe that there is 5 to 7 percent of waste or fraud or abuse in that?

Mr. HALE. I certainly don't think there is 5 to 7 percent of fraud. Waste is always in the eye of the beholder. There are some who feel some of our programs are wasteful, even though——

Senator MANCHIN. I agree.

Mr. HALE.—we believe they contribute to national security. That is a debate we need to have. But, no, I absolutely don't think that we are sitting there with $400 billion over 10 years of fraud. I don't know of any evidence.

If that were true, how come those 3,000 auditors are only finding 20 cents out of every $1,000 that violates the ADA? Because it is a violation—it would be. Fraud is almost certainly going to be a violation.

Senator MANCHIN. So you are basically thinking it might be more policy, deciding on what we think we need and what we don't need?

Mr. HALE. Absolutely. We are looking at it carefully, and we will be responsive. But it is not going to be—it will be fewer troops and less investments.

Senator MCCASKILL. I know you can't put a number on it. I think that sometimes that waste part is in the eye of the beholder. I would say that two systems tracking assets that can't speak to each other, even if one has much more capability than the other, a $5 billion price tag on IT that is tracking assets is a huge number in any private sector enterprise, even as big as DOD.

But let me ask about accountability. Who is the single official within DOD who is responsible for the FIAR plan?

Mr. HALE. It would be the Secretary of Defense. But he has basically delegated that to the CMO, the Deputy Secretary.

But in an organization our size and with the scope of the responsibility, I think you are looking at the rascals who have the day-to-day responsibility—the CFO and the DCMO at the OSD level; the Service FMs and the Service DCFOs—DCMOs, I should say, at the Service level.

Senator MCCASKILL. Who has the primary responsibility on all the feeder systems?

Mr. HALE. That would be the Service—you want to take a shot at that?

Ms. MCGRATH. So the systems that really, I am going to say, it depends where they are in their respective life cycle in terms of who has the day-to-day operational control and then investment decisions.

Through the investment review board process, we have been able to obtain greater visibility in terms of development and modernization, and so that we do have an oversight process required by statute, where we are reviewing the development, any modernization to the legacy environment, so we have a better understanding on how those investments fit into the broader picture.

The proposed legislation—the revision to the section 2222 actually provides—we very much support. It provides greater visibility into total investment for those systems. So it is not just development modernization. It is the total investment.

So that we can, from in particular a perspective have a better view of all of the investments to then drive both IT rationalization, any changes that are made, any changes over $1 million to that business environment so that we can better drive elimination of duplication from a legacy to an ERP, the future, to look at duplication of existing systems across DOD.

So we very much support the draft legislation that has been proposed.

Senator MCCASKILL. The reason I ask about the feeder systems is I review all this. As I look at the plans and I look at the ERPs, I am always on the watch for that moment in this—I know we have some issues about all the things that are going to happen all at once in some years and some of the Services in 2015 and 2016. I am realistic about whether there is going to be a pushback on the 2017 number.

But what I am really worried about is we are going to get to the end of this process, and they are going to say, "Well, there is the feeder system problem." That no one is going to say, "Well, that really wasn't my problem. That feeder system wasn't my problem."

I want to make sure that, right now, we know who to hold accountable on the feeder system problem. Mr. Khan, could you speak to that issue as to from where you sit can you make any observations about who you think is the logical person to have responsibility over all these feeder systems that are going to ultimately either provide or not provide the ability for us to get to an auditable system?

Mr. KHAN. Feeder system is a huge problem because of the data which comes in from the feeder systems has to be fed eventually into the ERPs. So the data conversion would be an issue.

I think that is critical that when investment decisions are made for giving additional funding to a particular system or a program, that it has to be looked at very carefully as to how they are going to be linked with their transformation within DOD itself.

One of the elements of transformation which is linked with the business—or the enterprise architecture is how it is going to address the legacy systems and the feeder systems. So that is the point in time when the investment decisions are being made that those hard questions have to be asked.

Senator MCCASKILL. Right.

Mr. HALE. Can I address that?

Senator MCCASKILL. Yes.

Mr. HALE. I think we—I am very worried about that, too. I don't want to get all these systems deployed at great cost and in consid-

erable time find out we are not using them in the right way or the feeders.

So what we have done is asked each Service—and the Army has started, and I will ask Ms. Matiella if she will comment on that—with these validations. We have taken—is it three bases you are starting with?

Ms. MATIELLA. Yes.

Mr. HALE. We are actually asking an independent public accountant to go out, look at GFEBS, which is their ERP.

Senator MCCASKILL. Right.

Mr. HALE. Say, "Are we using it in a way to include the feeder systems that is auditable?" I suspect we are going to have problems and that we will have to fix them, but at least we are finding out now.

So do you want to add to that?

Ms. MATIELLA. Yes. As the auditors go onto a specific installation, they look at GFEBS and the integrity of the data and the processes in GFEBS. Of course, what that includes is the data that came in.

So, as they come up with their recommendations and their findings, it will include that data that came in from other feeder systems. So, we will be alerted to the fact that it may be that it is an HR feeder system or logistic feeder system that may be creating a data integrity problem within GFEBS.

Of course, I am in charge of, to a large extent, making sure that the end-to-end processes will end up in auditability. For example, I am the process owner for procure-to-pay. So I have to make sure that whatever goes through a procurement system, in fact, does result in good, auditable data in the end.

So, we are in the Army looking at end-to-end processes to make sure that whatever goes into the accounting system, into GFEBS, is auditable at that transaction level, does have supporting documentation.

I work with the other Assistant Secretaries very, very closely to make sure that they are working their systems to make sure that in the end, the Army is successful in auditability. So we are looking at things end-to-end.

Senator MCCASKILL. Okay, good.

Mr. HALE. We will do it with the Navy. I hope this year to start one with the Navy ERP in the context of a major defense acquisition program. As the Air Force's system matures, we will do the same thing there.

Senator MCCASKILL. Okay, good. I just want to make sure that we are prepared. Obviously, you are concerned about it, Secretary Hale, for the right reasons.

It could be all of this effort and all of this money is only as good as the data feed-in.

Mr. HALE. I might add, the processes that we use and the training of the people, it is all a package.

Senator MCCASKILL. It is all included. Yes.

Mr. MORIN. Madam Chairman?

Senator MCCASKILL. Yes?

Mr. MORIN. Thank you, ma'am.

I wanted to highlight just one thing that I think is important in the context of our overall business systems modernization. It is that these new systems are much more intolerant of bad data.

So, whereas the legacy systems have tolerated feeder systems that have bad data, and it has skated sometimes below the radar screen, with our implementation of DEAMS at Scott Air Force Base, we found instances where feeder systems are providing bad information in large quantities because the business processes in those nonfinancial systems were bad.

But the system highlighted that for us directly. It told us thousands of transactions were not meeting standards, which instantly brought the level of management attention in order to fix the problem. So there is an advantage to these new systems in that we catch those problems.

Senator MCCASKILL. Yes, that is good. That is great. Thank you for that.

Senate Ayotte.

Senator AYOTTE. Thank you.

Ms. McGrath, I just wanted to ask you about something that had happened. One of the Business Transformation Agency's (BTA), largest initiatives is the Defense Agencies Initiative (DAI), an ERP system for the defense agencies. BTA, in fact, was the first agency to implement DAI for itself and, from what we understand, was a small-scale effort but one that was very successful in terms of following the best practices that we are talking about today.

Now we have heard that as BTA is being shut down and about half of that agency or so is being folded into your office, that you are going to stop using DAI for your new business in fiscal year 2012 and force the BTA folks that you are inheriting to go back to the old, antiquated system supplied out of DOD.

Is that what is happening? If so, why would we want to go backwards when we have this new system that we have piloted?

Ms. MCGRATH. BTA was the first user, if you will, of the DAI, which is the financial—ERP solution for the defense agencies. There are other agencies who are also using the DAI solution today and has a complete implementation schedule.

The OSD team, if you will, uses a legacy system called WAAS today. Instead of having, I am going to say, my office on a standalone system as part of the overall OSD footprint, we are not moving toward implementation for just my office, but rather moving toward implementation with the rest of OSD when we move on to DAI. We are scheduled to implement DAI as part of OSD.

It is just I would not have my own office do it, whereas my budget is rolled up into the overall OSD budget. So, I would be the anomaly, if you will, and not standard with the rest of OSD. So I guess my overall message is we are moving to DAI. We are not doing it today because I am a component of the broader OSD budget, but we are certainly aligned and on track to do that.

Senator AYOTTE. As the DCMO, you are leading the transformation of business operations across DOD. What problems, if any, have you had in convincing folks in DOD to get on board and to start using the new system that has already been up and running for a few years and is completely ready for them to use? Are you having problems convincing DOD to use the new system?

Ms. MCGRATH. I am sorry. Is your question specific to utilization of DAI?

Senator AYOTTE. Yes.

Ms. MCGRATH. So there is no problem convincing DOD, if you will. The Washington Headquarters Services actually executes the budget for OSD. We are on the implementation schedule for DAI.

It is just more of a timing issue than a convincing them to do that. So there is no, I will say, challenge in terms of the business benefit for the solution. We will align to the rest of the implementation, just like I would have otherwise before the——

Senator AYOTTE. But if you have folks that have already used this system successfully, why are you farther down on the list rather than farther up on the list?

Ms. MCGRATH. BTA—my office is an OSD element today. Before any of the functions from BTA moved into my office, I today am part of OSD. So, my budget today is done as part of the broader OSD budget.

BTA, as a defense agency, used an ERP-based solution to do their financials. So, with the disestablishment of the defense agency, all of their systems, which they use to executive the operations of their defense agency, aren't needed to run that. Again, I am a member of the OSD element.

OSD is on a path to move to DAI. We are moving there. I am just part of the implementation for OSD. So, I don't view it as a challenge in terms of the business value. It is just a—it is a timing——

Senator AYOTTE. So when would——

Mr. HALE. Would I help if I made it clear, her office was never on DAI. It was the agency that was on it. She will move to it, along with all our offices, I hope, fairly soon. I can't remember when it is scheduled.

Senator AYOTTE. Right. So what is the timing then?

Ms. MCGRATH. I don't have it, I am sorry, off the top of my head. I know it is not the beginning of fiscal year 2012. I believe it is fiscal year 2013, but I would like to come back and tell you what the very specific date is.

Senator AYOTTE. I would appreciate that.

[The information referred to follows:]

The current implementation schedule for Defense Agencies Initiative (DAI), for fiscal years 2012 through 2016, continues to include 25 Defense Agencies. The Office of the Deputy Chief Management Officer is part of the Office of the Secretary of Defense (OSD), which is currently supported by Washington Headquarters Service (WHS). WHS is scheduled to begin implementation of DAI in fiscal year 2015 and become operational in early fiscal year 2016. It did not make sense for DOD to significantly alter the implementation schedule for DAI because of a small number of Business Transformation Agency employees moving into OSD.

Senator AYOTTE. I just wanted to ask Mr. Khan. Overall, we are going to have to make some tough choices around here, no matter what the deficit plan that goes forward. It is going to cause us to have to make some difficult choices across every agency.

How sufficient is the quality of our financial data to ensure that we are not making cuts that undercut our warfighters or endanger readiness? Can you help us, just in terms of where we are on the financial management end of when we need to make these difficult decisions, how reliable is the information we are going to receive?

Mr. KHAN. Thank you for that question.

That question really goes to the heart of the importance of a financial statement audit, which really trues up the internal controls and the infrastructure which provides reliable financial information.

So the challenge in answering your question is that without having adequate internal controls, adequate processes, it is difficult to say how reliable the information that we are making decisions on. In part, it also touches upon some of the other questions you had earlier on about information coming from other areas, which feed into DOD, about the internal controls, about how that information is processed, how that information is reported.

So just want to link that to the importance of the improvement in financial management infrastructure itself. The proof of that is going to be successfully passing an audit, which will give management comfort that the information that they are using for decision-making is reliable.

It has reasonableness of having gone through internal controls. It has the rigor of an audit. Even though you may not be using the financial statements for making decisions, but the information that goes into them, which is much more detailed, that is reasonable, reliable.

Mr. HALE. May I add to that? Oh, go ahead.

Senator AYOTTE. Sure. No, I thank you for that answer. Go ahead, Mr. Secretary.

Mr. HALE. You have heard me say, and I believe it is true, we have reasonable controls. We are not over there spending this money wherever we want. If we were doing that, you would get wholesale ADA violations. It is just not happening.

So I will use the colorful language of my former boss, Secretary Gates. Maybe it was an Easter egg hunt to get the information. But I guess he found the eggs because he made the decision—and I am not trying to be silly.

In the end, I think we got him enough so that he felt comfortable making those decisions in a way that wouldn't damage the troops. He would never do that.

So it is not pretty. We need better financial systems. We need audits. But we are not over there just randomly spending this money. We are spending it the way you tell us.

I think we can establish that. In August, we will establish it for our funds distribution process through an independent auditor. I will go back to my ADA violations to say, overall, I believe we have reasonable controls.

Senator AYOTTE. One of, I think, the overall fears we have is that we are in a position, if you are looking to 2017 and the best scenario of being audit ready, we just don't want to be in a position here where we are getting—instead of taking the rotten eggs, we are taking the chocolate eggs, so to speak.

So, that is where we want to make sure that we are making some good decisions. So, I appreciate your commenting on that, and that kind of goes to the whole——

Mr. HALE. We share your concerns. We are heading towards some difficult times. We need to work with you and with less than

perfect information, unquestionably. But I believe we can make the right decisions.

Senator AYOTTE. Thank you.

Senator MCCASKILL. Senator Portman.

I will let the witnesses know that we are planning on having a vote at 4 p.m. So I am sure we will be able to wrap this up by about 10 minutes after the hour.

Senator Portman.

Senator PORTMAN. Thank you, Madam Chair. We have to stop having these meetings together like this.

Senator MCCASKILL. I know.

Senator PORTMAN. My chair on every committee.

Senator MCCASKILL. It is because you are a wonk, too.

Senator PORTMAN. Yes. [Laughter.]

First of all, thank you all for being here. I appreciated the comments from my colleague from New Hampshire, and your answers to her.

I am sure that you have heard this today already, but we think what you do is incredibly important. As some of you know, I offered an amendment, which was later accepted, to ensure that you all continue to have the stature that comes with being a confirmed position.

Now that you are all in position, you probably think that is okay. Maybe if you have to go through it again, you would disagree with that. But, seriously, we really believed, as a Congress, that it was important to hold you all up and to empower you so that in dealing with other confirmed appointees, you had the ability to ensure that financial management and the critical roles you play were given adequate consideration.

With that comes a lot of responsibility, and we expect you to utilize that full power that we were trying to empower you with. When I was the OMB director, I met regularly with the CFOs in the hopes of doing just that, empowering people, letting them know that, at least in my role as OMB director, I viewed what you do in the agencies as incredibly important.

I think what Senator Ayotte said is true. We are going to be under enormous budget pressure here. So, it is more important than ever. We want the money to go to our troops, and we want it to be as efficiently and effectively spent as possible.

That is going to be your job in a tight budget environment, where there will be tremendous pressures on the budgets of every one of the Services. So, with that in mind, let me ask a couple of questions about accountability and specifically as it relates to the audits.

I think Senator McCaskill and, I am told, Senator Cornyn also raised this accountability issue earlier today. But Secretary Hale, I saw in your prepared remarks, you talked about the audit process, and you said, "The department will achieve its financial management goals only through the active partnership involving both the Comptroller"—you—"and the DCMO. We also have to have help from those in acquisitions, logistics, other business areas as well as business communities that reside in the department."

You said you have "engaged the department's CMO as well as Military Department CMOs and the Service Vice Chiefs in a personal commitment to support the goals."

I am just, to be honest with you, a little concerned about some of these terms. Active partnership? Help, engage, personal commitment? It doesn't sound like a mission with a whole lot of accountability and responsibility.

I thought that the whole point of having the CMO or at least an identifiable leader, a single leader, who puts his or her weight behind this problem and can hold people accountable, was the intent of Congress.

I know Secretary Panetta has said this is a priority of his. But again, from your comments, I get the sense it is going to take more than just prioritization to make audits happen.

Can you speak a little to the accountability issue and how we ensure that, at the very highest level, there is a commitment to this and that someone is held accountable?

Mr. HALE. I think there is clear accountability. It starts with the Secretary of Defense. But his focus is, he has so many things to do. I think the CMO, who will be the Deputy Secretary of Defense, Bill Lynn for the moment, is the primary accountable official.

I meet weekly with him. I have discussed this issue a number of times. We have had several formal meetings. But we have to get this out farther than OSD. So, there has to be a process. So we have set up one.

Beth McGrath and I chair a governance board, meets quarterly, has the Service FMs there. So we get down to that level. Also has many of the defense agency leaders. It has senior representatives from acquisition, technology and logistics, and from personnel. Increasingly, where we are going with that FIAR governance board, as we call it, is kind of stoplight charts of how we are doing on our various milestones.

Then there is a monthly meeting at a level down with my Deputy CFO and the financial operations personnel in the Services so that we get it a level down. This is a big organization. No one person—Bill Lynn can't manage this day-to-day. He just doesn't have time. I don't have enough time. I can't devote all my time to it.

Senator PORTMAN. I can't believe he has——

Mr. HALE. But he is responsible for it, and he understands that.

Senator PORTMAN. Yes. You think there is an understanding of that and the accountability thing, how you talked about the, in a sense, I guess, performance measures that you are using? Then you have some green, yellow, and red lights, since you said stoplights, attached to those. Do you feel like that is something that, at the highest level, there is a commitment to? Is there an alignment that people understand at Mr. Lynn's level?

Mr. HALE. Yes. Maybe Beth wants to add to this. We have monthly meetings of the Defense Business Systems Management Group (DBSMG) and we review all the major priorities. This is one of the top nine business priorities in DOD. There are stoplight charts.

Is it perfect? No. Could we do better? I am sure we could. But there is a commitment to this. I spent 7 years as the Air Force FM.

It is a whole lot different. There was no commitment, frankly, at that point, no strong senior commitment.

It is going to get more senior because, obviously, Secretary Panetta cares about this. I mentioned these testimonies to him, and he is just busy with a lot of other things. But I am scheduled to see him next week, and I will give him an overview of where we are and get his personal guidance.

Senator PORTMAN. Tell him that the former OMB directors are all relying on him.

Mr. HALE. Okay. [Laughter.]

Senator PORTMAN. I am a former OMB director, too.

Mr. HALE. His heart is in the right place, and I am looking forward to his help. Even if it is—just his support will be very important, and just his stating that it is important will be very important.

Senator PORTMAN. Given your background, do you feel there are enough green and yellow lights on your charts to indicate that you are going to meet your 2017 date?

Mr. HALE. I am cautiously optimistic, but I know we have to pick up the pace. You look at the timing, there is a lot toward the end of that. We are going to have to find ways to move that back in order to meet it.

I am more optimistic that we will meet these requirements for the high-priority information. I know you weren't here, but we have a plan that focuses on the information we most use to manage, and we are focusing heavily on that. It is budgetary information because we manage the Government, and certainly DOD, by budgets.

Also, our accounts and availability of assets because they are so critical to the warfighter. I am more confident that we will meet it there because we are focusing heavily on it. But we have an approach for full auditability, and as I say, I will choose my words carefully, I am cautiously optimistic.

Senator PORTMAN. Thank you all very much.

One quick final question and just a nodding of heads or shaking of heads. How much time do you spend ensuring financial standards—the CFO role—as opposed to just getting through the budget process and preparing the budget? Do you all feel like you have enough time to spend on the broader CFO role?

Ms. MATIELLA. Absolutely. We focus a lot on auditability, as well as the budget. Basically, it is a long, long day, but both things are important. We have to focus on both things, the budget side and the accounting side.

So, I believe, not only does it have my attention as a senior leader, but it has the attention of the CMO and the Secretary of the Army and all the senior leadership. Definitely accountability is there and ownership is there at many, many levels.

Senator PORTMAN. Good to hear.

Ms. Commons.

Ms. COMMONS. I spend a considerable amount of my time focused on the auditability effort. By and large, the budget process is one that has worked very well for us, and I can spend a little less time focused on it. So I do spend a lot more time focused on auditability.

As Secretary Hale said, I was also here in 1995 working as the Principal Deputy, and certainly, there was no real senior leader-

ship focus on these issues. The senior leaders are really focused on this issue now. They have given us the resources that we need to make progress here.

Even the business owners are now aligned with us and focused on improving our business processes. I believe that is the key to sustainability for this effort. We are focused on actually look at our business processes end-to-end, standardizing those processes and making the changes that we need in order to sustain this even when I leave as the Assistant Secretary.

I believe that is the only way that we will become auditable and keep that auditability forever.

Mr. MORIN. Sir, I would also agree. The three priorities that I am working pretty much every day are rebalancing the Air Force budget to get the maximum combat capability out of each taxpayers' dollar, the FIAR effort and the broader transformation of our financial operations to have actionable accurate information and quality service to the airmen who depend on it, and then the reinvigoration of our cost-estimating capability so that we make the right decisions on our acquisition programs with the best possible information as we make those long-term investment commitments.

Senator PORTMAN. Thank you.

Mr. Khan, you are welcome to—I am over my time here. So the chair is being very generous.

Mr. KHAN. Maybe I can just comment on the commitment of the leadership. We have been impressed by the current team. Like I mentioned in my opening statement, I think the leadership is an important element to have a plan in there to be able to sustain it and to be able to work together across the different functions.

Thank you.

Senator MCCASKILL. Thank you, Mr. Portman.

I just have two other areas I want to discuss and one of them we may not have time to get time for and take for the record. But the first is interfacing.

We have—one of the problems is that we can't take commercial off-the-shelf systems because everybody wants to hold onto the legacy systems, and then we have to like adjust them and customize them to try to do interfaces. It is expensive. It is very, very expensive.

GAO has looked at the data on the planned interfaces in the ERP systems. I am a little surprised at how many interfaces are planned. It is a huge number in every branch.

The winner goes to the Air Force, and so I am going to focus this question for you and ask you to get back with an answer. You all are planning on having an interface with your system, the Expeditionary Combat Support System (ECSS), 157 interfaces in Phase 1, growing to 673 interfaces.

Now I don't know how you get to 673 interfaces. I can't figure out why you would need to get to 673 interfaces. So I would like you to look into that and get back to us with an explanation and maybe a plan to reduce the number of interfaces. Because the more interfaces you have, the more unwieldy it is in terms of getting systems that work efficiently and effectively that don't cost $5 billion to develop.

Mr. MORIN. Yes, ma'am. We will get back to you with details on the interfaces that are involved.

[The information referred to follows:]

As the Expeditionary Combat Support System (ECSS) design has matured, we have determined there are 141 currently planned interfaces established for Increment 1. For Increments 2–4 we have identified 423 currently planned interfaces, for a total of 564 interfaces; this is an update to the 830 as reported in the October 2010 GAO Report. This number was revised during our May 2011 Government Accountability Office audit. ECSS Increment 1 is projected to interface with over 30 discrete systems, and each transmission of data to and from the ECSS application is counted as an interface. For example, ECSS interfaces with the Defense Communications Security Material System, a supply chain system that requires 5 separate interfaces. Therefore, the 30+ systems that ECSS interacts with are what creates the 141 data exchanges or interfaces with ECSS Increment 1. The refinement of the number of interfaces is a normal part of Enterprise Resource Planning design and development activities. The Air Force will continue to eliminate or consolidate interfaces as data needs are challenged and/or duplication is uncovered.

Mr. MORIN. I will say at a top level, and recognizing that ECSS is a system to run essentially the entire logistics enterprise of the Air Force. So it is a very broad all-encompassing system.

But there is always a tradeoff in developing these ERPs between do you make it truly the entire enterprise, thereby doing away with lots of the interfaces, but accepting much more development risk in building a more complicated system to address different business processes? Or do you constrain the size of that system, accept the need to build interfaces to legacy systems, and all of the data interface problems that you have alluded to earlier?

There is no one good answer there. But the process that we have in DOD for looking at these systems and challenging those sorts of assumptions that Ms. McGrath and Mr. Hale are very intimately involved on, forces discussion on exactly those design decisions.

Senator MCCASKILL. We need some kind of clarification. I think all of you have 40, 50, 100 planned, but nobody has anywhere near 657 planned. So we need to understand why there is this wide disparity and why there are so many. Because it is trouble. It is trouble to have that many interfaces. It is not going to happen.

Now, finally, asset valuation. In the grand scheme of public accounting and Government accounting and yellow book standards, asset valuation has obviously been controversial and difficult in terms of auditing and determining what asset valuation is. I was there for the wars over asset valuation in terms of infrastructure in State government.

So I know that, Mr. Hale, you have said that the asset valuation, you are asking the Federal Accounting Standards Advisory Board (FASAB) to change the Federal accounting standards to prevent the expensing of military acquisition costs.

I am curious what OMB and GAO, if they agree with this approach. I would particularly like your input, Mr. Khan, about what GAO thinks about the approach that DOD is recommending, saying it is too expensive to get at some of the legacy aspects in terms of valuation. We would just like briefly your input on that.

Mr. HALE. Yes, briefly. We will ask—we haven't yet—but we will ask the FASAB for military equipment, to allow us to expense it. For other assets, we will pursue our waiver phased approach.

We are going to wait until we get the statement of budgetary resources because it feeds the information once it is auditable. That

will help. We need the ERPs, especially the logistics ones, to do this.

Finally, we plan to do it only prospectively. That is, we won't go back and try to figure out every building we ever built. We will start with the ones that—which means that we will get qualifications on our opinions for a while. But I think it is a more effective use of the taxpayers' money.

Bottom line is we don't use it much to manage. It is of low value, very low value, and very different than a private company where asset valuation allows them to depreciate, and they can use it to offset taxes. I don't pay any taxes. They need the book values, especially if they were going to sell it. I am not going to plan to sell the Pentagon.

It is just not information we use. So we need a cost-effective way, and we think we found it. I did brief Mr. Dodaro on this, and I believe he was generally supportive. I am not going to sign him up to saying he would agree to everything. But I believe he was generally supportive.

Senator MCCASKILL. Is OMB okay with it?

Mr. HALE. Say again?

Senator MCCASKILL. OMB okay with it?

Mr. HALE. Yes. We believe they are comfortable. I don't have anything signed, and we will have to go through a formal coordination process when we get to FASAB. But yes, we have briefed Danny Werfel, and I believe he is generally supportive.

Senator MCCASKILL. Mr. Khan, do you want to let Mr. Dodaro speak for GAO here, since his name has been brought up? I don't want to put you in an awkward position where you state one thing, and maybe Gene disagrees.

Mr. KHAN. No, I don't. I wouldn't do that, speak for Mr. Dodaro.

But essentially, in our discussions with Mr. Hale's office and OSD, certainly we agreed with the current approach of continuing with the existence and completeness of the mission-critical asset. We feel that is going to provide important information.

At the same time, we feel that maybe going to FASAB may be premature. Going down the existence and completeness approach may provide more information in the next few years, which may impact what sort of standards you may really need to have to address. Primarily, this is the issue of military equipment, accounting for that, because that is largest part of the assets which has different viewpoints of how that may be accounted for.

The other point is that having the standards changed in the near future is not really going to impact the auditability. Because before going through existence and completeness, valuation is going to be a stage after that.

Mr. HALE. We accept to wait a year or 2.

Senator MCCASKILL. Right. I understand.

Mr. HALE. We are going to focus on the higher-priority stuff at the moment, as we are doing.

Senator MCCASKILL. I understand that. The vote has been called. So we will close the hearing here. I will say that I will look forward to an opinion, even if it is qualified. I would be thrilled with a qualified opinion.

Mr. HALE. So, if we get a qualified opinion, we are going to have a party. Will you come? [Laughter.]

Senator MCCASKILL. I think you can assume it will be a qualified. I don't think that any of us are expecting a clean audit the first time around.

Mr. HALE. But how about the party, Madam Chair? [Laughter.]

Senator MCCASKILL. I am just looking forward to an audit.

Thank you all for this hearing, and we will continue to follow up and provide the pressure we think is necessary.

Thank you. We are adjourned.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR KELLY AYOTTE

DEFENSE AUDIT READINESS

1. Senator AYOTTE. Secretary Hale and Ms. McGrath, today, what are the most significant impediments to making the Department of Defense (DOD) auditable by the 2017 statutory deadline?

Secretary HALE and Ms. MCGRATH. DOD's legacy financial processes and systems were established many years ago and were designed to ensure budgetary accountability—not meet the proprietary or commercial accounting standards called for in the Chief Financial Officer (CFO) Act, which are necessary to achieve auditability. To meet these standards, there is a substantial amount of work to be done. Some of the most significant impediments include:

- DOD business and financial management systems are not fully integrated and do not always collect data at the necessary transaction level.
- Reliable end-to-end processes and internal controls have not fully been defined to support financial reporting.
- DOD lacks sufficient operational and financial personnel experienced in financial audits.
- DOD's traditionally stove-piped culture is primarily focused on mission outcomes and does not yet place a sufficiently high value on capturing and using financial and cost information.
- Significant cultural change is necessary to achieve success.

2. Senator AYOTTE. Secretary Hale and Ms. McGrath, exactly what aspects of those impediments remain unaddressed in DOD's current financial improvement and business transformation plans, if any remain unaddressed?

Secretary HALE. All of these impediments—systems, processes, workforce, and culture—are addressed through the Financial Improvement and Audit Readiness (FIAR) Plan, as well as the Department's Strategic Management Plan (SMP), Enterprise Transition Plan (ETP), and supporting component business and financial management plans.

Ms. MCGRATH. All of these impediments—systems, processes, workforce, and culture—are collectively addressed through the FIAR plan, the Department's SMP, ETP, Business Enterprise Architecture (BEA) and supporting component business and financial management plans. Culture is also being addressed through many additional avenues, such as communications, training, and accountability.

3. Senator AYOTTE. Secretary Hale and Ms. McGrath, what, if anything, can Congress do to help DOD overcome these unaddressed obstacles, to ensure that it meets the 2017 statutory deadline?

Secretary HALE. Continued attention and oversight from Congress encourages more attention and participation from the non-financial management community to sustain the current focus. Additionally, providing a timely appropriations bill without the use of multiple continuing resolutions will help leaders devote more time to audit readiness.

Ms. MCGRATH. Continued attention and oversight from Congress is beneficial and encourages more attention and participation from the entire DOD management community in sustaining the current focus on auditability.

ENTERPRISE RESOURCE PLANNING SYSTEMS

4. Senator AYOTTE. Secretary Hale and Ms. McGrath, over the last 5 years, how much per year and in total has DOD been applying towards the development, procurement, and deployment of Enterprise Resource Planning (ERP) systems?

Secretary HALE and Ms. MCGRATH. In order to provide the committee with the most relevant number, we have taken a look at the available information for all prior year funding for the ERPs listed in the GAO's October 2010 report on DOD Business Transformation, GAO–11–53. These ERPs are the Army's General Funds Enterprise Business System (GFEBS), Global Combat Support System-Army (GCSS-Army), Logistics Modernization Program (LMP), and Integrated Personnel and Pay System-Army (IPPS–A), Navy's ERP, Global Combat Support system-Marine Corps (GCSS–MC), and Future Personnel and Pay Systems (FPPS), the Air Force's Defense Enterprise Accounting and Management System (DEAMS), Expeditionary Combat Support System (ECSS), and Integrated Personnel and Pay System-Air Force (IPPS–AF), and DOD's Defense Agencies Initiative (DAI). DOD has applied approximately $7.2 billion towards the design, development, procurement, test and evaluation, and deployment of these systems since their inception.

5. Senator AYOTTE. Secretary Hale and Ms. McGrath, please provide the same information over the current Future Years Defense Plan.

Secretary HALE and Ms. MCGRATH. Based on available information, DOD plans to apply approximately $6.2 billion towards the design, development, procurement, test and evaluation, and deployment of the systems identified in question #4 over fiscal years 2012 to 2016.

6. Senator AYOTTE. Secretary Hale and Ms. McGrath, DOD has made it clear that modernizing its business systems is central to its approach to getting auditable. But, even when its new systems have begun to come on-line, those entities are still not able to pass an audit. Why is that, and what does that mean for the future of audit readiness?

Secretary HALE and Ms. MCGRATH. Modernizing DOD's business systems is a key aspect of our overall effort to achieve auditability. However, improved systems alone will not eliminate our weaknesses or guarantee auditable statements. Achieving auditability requires that we apply consistent levels of process controls that cross organizations and functional areas. Many elements of our current business environment must be changed to allow us to meet financial audit standards, including improving the data quality of our feeder systems. So, while DOD is taking pro-active steps to more closely tie individual ERP programs with auditability outcomes, we are also focused on delivering audit ready processes and controls that will remain outside the ERP systems.

7. Senator AYOTTE. Secretary Hale and Ms. McGrath, the Defense Logistics Agency's (DLA) ERP system has been at full operational capability (FOC) for several years and has been proclaimed as a major success, but DLA is still projecting many years until audit readiness. In fact, it looks like they'll be last in getting to audit readiness, way out in 2017. That's more than a decade after the system reached FOC. How is that possible?

Secretary HALE and Ms. MCGRATH. DLA has made great strides toward full implementation of their ERP, Enterprise Business System (EBS). To date, the EBS has been implemented for the non-fuels supply business line, with great success. However, EBS has not been fully implemented for the full range of business lines and processes needed for DLA to be audit ready. Of particular note, the DLA audit readiness efforts are impacted by two EBS programs that are extending the capabilities and scope of EBS, EBS-Energy Convergence, and EBS-eProcurement.

Additionally, full implementation of EBS is not enough to ensure that DLA is audit ready. Further corrective actions are necessary to ensure that the process and control environments around the systems (including at service providers) are compliant and sufficient to withstand a financial statement audit. DLA must also develop more complete documentation to achieve audit readiness. The DLA audit readiness plan has always included these elements when projecting full audit readiness.

8. Senator AYOTTE. Secretary Hale and Ms. McGrath, how can DOD cite the implementation of this ERP as a success given this reality?

Secretary HALE and Ms. MCGRATH. DOD considers the implementation of EBS a success because it has dramatically improved processes and controls in the non-fuels supply business. Auditability for the entire DLA likely will be achieved, as described

in the previous answer, when further process and control improvements are made and additional ERP functionality is fully implemented.

9. Senator AYOTTE. Secretary Hale and Ms. McGrath, what does this mean to all the strategies in the FIAR plan that says these new systems are so essential to audit readiness; but, here, your best one has already been up-and-running for years and audit readiness is still many more years away?

Secretary HALE and Ms. MCGRATH. As explained in the answer to question #7, the DLA ERP has been implemented for the supply business line but not for the full range of business lines and processes needed for the entity to be audit ready. The DLA audit readiness plan has always included these material elements of the business when projecting full audit readiness. We continue to work with all DOD components to improve all material parts of their business operations to achieve audit readiness as soon as possible and within the goals established in legislation.

10. Senator AYOTTE. Secretary Hale and Ms. McGrath, exactly what evidence do you have that any of the new systems that are being implemented and integrated with legacy systems will in fact yield an auditable result?

Secretary HALE. Each of the system acquisition programs has included the requirements of the Federal Financial Management Improvement Act (FFMIA) in the system requirements. Testing of these requirements are part of the system acceptance process. These tests give us confidence that the software is largely audit ready. Additionally, DOD is more closely tying business and financial management outcomes with specific acquisition milestone decisions, which provides us additional confidence that at each step of the acquisition process, we are ensuring that they will yield the results that we desire.

However, the new systems cannot achieve audit readiness on their own. They must be well-integrated with many other systems to create a well-controlled end-to-end business process. Many elements of the larger business environment, including processes and controls, must also be changed to allow us to meet financial audit standards.

Ms. MCGRATH. Each of the system acquisition programs has included the requirements of the FFMIA in the system requirements. Testing of these requirements are part of the system acceptance process. Additionally, my office has begun an independent assessment of every ERP and business system that needs to be compliant with SFIS and USSGL. These reviews look at the underlying system's SFIS configuration, its USSGL posting logic, its ability to interface using SFIS, and its financial reporting capability. These tests give us confidence that the software is largely audit ready. Additionally, DOD is more closely tying business and financial management outcomes with specific acquisition milestone decisions, which provides us additional confidence that at each step of the acquisition process, we are ensuring that they will yield the results that we desire.

However, the new systems cannot achieve audit readiness on their own. They must be well-integrated with many other systems to create a well-controlled end-to-end business process. Many elements of the larger business environment, including processes and controls, must also be changed to allow us to meet financial audit standards.

11. Senator AYOTTE. Secretary Hale and Ms. McGrath, have you tested any of these systems from the perspective of a financial audit? If yes, exactly what have you learned? Please be specific.

Secretary HALE and Ms. MCGRATH. The FFMIA testing we described in the answer to question #10 covers many of the requirements of a financial statement audit. While we have learned a few lessons from this testing, it is the ongoing testing of the end-to-end processes that include the ERPs where we will learn valuable lessons. Right now, an Independent Public Accounting (IPA) firm is examining the Army's target business environment with a report expected by late November. We have a similar evaluation planned to begin for the Navy target environment in the first quarter of fiscal year 2012.

12. Senator AYOTTE. Secretary Hale and Ms. McGrath, we are concerned that DOD is spending billions of dollars on new state-of-the-art systems but in the end these systems will not be able to provide it with the compliant processes and adequate controls needed to achieve an audit opinion. I understand DOD has a BEA that is suppose to include the business rules for end-to-end processes to include standard data elements and controls. So, why is DOD still implementing ERPs that are not auditable?

Secretary HALE. BEA provides a foundation of requirements for implementation of sound business practices. Improved systems alone will not eliminate our weaknesses or guarantee auditable statements. Achieving auditability requires that we apply a consistent level of process controls that cross organizations and functional areas. Many elements of our current business environment must be changed to allow us to meet financial audit standards. We have every reason to believe that the ERPs themselves are auditable and as described in the answer to question #11 we have engagements with accounting firms to evaluate the state of audit readiness in Army and Navy entities using the ERPs as core parts of their business environment.

Ms. MCGRATH. The BEA provides a foundation of requirements for implementation of sound business practices. Compliance to the BEA includes the ability of reporting entities to implement necessary internal controls. business rules and standard data elements, and the successful implementation of systems to support these internal controls. However. many of the ERP programs that the Military Departments are currently implementing were initiated prior to the development and refinement of the BEA, so in some cases we are forced to make incremental improvement to the systems to bring them in line with the standards that are included in the BEA. To increase the validation of key enterprise data standards/requirement, DOD is conducting independent assessments of each ERP and business system that needs to be compliant with SFIS and USSGL and is taking remedial action where deficiencies are identified.

13. Senator AYOTTE. Secretary Hale and Ms. McGrath, why is DOD buying ERPs without deliverables for ensuring these systems can pass an audit?

Secretary HALE and Ms. MCGRATH. The implementation of ERPs is a central part of our business systems modernization strategy because the design principles within an ERP directly enable key elements of auditability. Among those principles, ERPs are designed to handle transactions end-to-end, enforce process and execution standardization among implementing organizations, manage consolidated business data in a single repository that allows centralized access control, and facilitate the flow of information both within an organization and with outside stakeholders. These design principles within an ERP directly enable these capabilities essential to auditability:

- Traceability of all transactions from source to statement
- The ability to recreate a transaction
- Documented, repeatable processes and procedures
- Demonstrable compliance with laws, regulations, and standards
- A control environment that is sufficient to reduce risk to an acceptable level

Additionally, we are ensuring that all of our ERP programs are accountable for delivering systems compliant with the standards necessary to achieve an audit such as the Standard Financial Information Structure (SFIS) and others captured in the BEA. We are validating this compliance through onsite audits. As part of each audit, we look at the underlying system's SFIS configuration, its USSGL posting logic, its ability to interface using SFIS, and its financial reporting capability. DOD is also tying business outcomes to acquisition milestones and specifically requiring, in Acquisition Decision Memoranda, that individual programs, such as Army's GFEBS and Navy ERP, define the role that they play in their organizations' auditability efforts and end-to-end processes. However, improved systems will not eliminate all of our weaknesses nor guarantee auditable statements alone. Achieving auditability requires that we apply a consistent level of process controls across organizations and functional areas. DOD's senior leadership understands this and is committed to achieving our audit goal.

14. Senator AYOTTE. Secretary Hale and Ms. McGrath, what, if anything, is DOD doing to ensure all new systems and ERPs are compliant with the BEA and that the BEA is compliant with accounting and auditing standards?

Secretary HALE and Ms. MCGRATH. DOD is doing many things to improve the content and quality of the BEA and the BEA compliance process. Currently, the BEA captures and maps all applicable laws, regulations, and policies to a framework of 15 end-to-end processes. Our existing policies require all business systems and services to document their solution compliance to the business architecture via a self-assertion process. In order to validate the self-assertion for compliance with the SFIS and USSGL, we are conducting an independent assessment for every system involved. This assessment ensures compliance with the standards and adoption and enforcement of the business rules, elements, and usage. For an ERP, this

equates to approximately 250 business rules that will be evaluated. In addition to checking for compliance, DOD initiated a plan to improve the usability of the BEA by adopting open semantic standards that allow for machine readable discoverability of applicable rules and standards. This change will ensure systems and processes are aware of all applicable standards in addition to providing a substantially improved compliance process.

15. Senator AYOTTE. Secretary Hale and Ms. McGrath, what improvements, if any, can be made in this area?

Secretary HALE and Ms. MCGRATH. DOD continues to take steps to ensure all new systems are compliant with the BEA and that the BEA sufficiently documents all appropriate accounting and auditing standards. First, DOD is evolving and improving the underlying technology and methodology of the BEA and the business solution architectures. The next version of the BEA will be based upon non-proprietary, open-standards that provide the ability to validate compliance in an automated machine readable fashion. DOD has also directed business system and business solution architectures to adopt these same languages and symbols. This standards-based approach will allow the solutions to leverage the BEA directly and the enterprise to directly access solution architectures. As a result of this evolution and common language, DOD will be able to more effectively guide for investments within a portfolio and ascertain impacts of business process and rule changes on systems and data.

Second, we are taking steps to rationalize our current portfolio of investments. Within the procure-to-pay end-to-end process, we have identified and categorized legacy, interim, and target systems by function, activity, and cost. We have also documented transition dates, overlapping capability, and termination dates of these systems. This information is available to the Investment Review Board (IRB) to provide transparency and enable rationalization of systems and services.

Third, we plan to increase independent BEA compliance assessments leveraging lessons learned during the SFIS validation and those learned by the Real Property and Infrastructure Lifecycle Management IRB, which is a leader in validating compliance. Independent assessments in addition to self-assessments will provide a much higher-level assurance that systems and organizations are complying with the BEA.

16. Senator AYOTTE. Secretary Hale and Ms. McGrath, one of the big obstacles to DOD's ability to become auditable by 2017 relates to its feeder systems—in particular, the fact that the data that supports their use is many times configured differently from how they should be for them to communicate effectively with the core ERP systems. This frustrates DOD's ability to get reliable information into the overall system (they have to be inputted manually and that creates errors) and to reengineer its business processes in a way that allows the ERPs to work as intended—to facilitate auditability. Do you recognize that concern? If so, how is DOD addressing it?

Secretary HALE and Ms. MCGRATH. Yes, we recognize the concern. Interoperability between core ERPs and associated systems challenges DOD's ability to reach its auditability and efficiency goals. DOD has adopted a framework of 15 end-to-end processes that facilitates the ability to document and describe the processes and the data required by DOD to conduct business. As DOD improves its ability to describe the data and processes using machine-readable open standards, we expose obstacles and address them as part of our continuing efforts to rational IT investments. We are also using the end-to-end framework to identify business process reengineering (BPR) opportunities within a portfolio versus an individual system. For example, DOD recently initiated a project to provide a common service for contract clause validation within the enterprise vice multiple individual system solutions.

17. Senator AYOTTE. Secretary Hale and Ms. McGrath, what improvements, if any, can be made in this area?

Secretary HALE and Ms. MCGRATH. DOD has adopted a framework of 15 end-to-end processes that facilitates the ability to document and describe the processes and the data required to conduct our business. As DOD improves its ability to describe the data and processes using machine readable open standards, we expose obstacles and address them as part of our continuing efforts to rational IT investments. This will help to improve data quality across our end-to-end processes, regardless what system it resides in. We are also using the end-to-end framework to identify BPR opportunities within a portfolio versus an individual system. For example, DOD recently initiated a project to provide a common service for contract clause validation within the enterprise vice creation of multiple individual system solutions.

DEFENSE FINANCE AND ACCOUNTING SERVICE

18. Senator AYOTTE. Secretary Hale and Ms. McGrath, the Treasury performs financial transactions on behalf of other Federal agencies. With the adoption of the new ERP systems, it seems that these brand-new systems could communicate directly with the Treasury and bypass the Defense Finance and Accounting Service (DFAS). We understand that an Army system is undergoing a pilot to look into the viability of this approach. We are interested in the idea that we can reduce the DFAS footprint and direct any savings realized into both increased capability for our military and, possibly, debt reduction. In your view, to what extent can the Treasury perform at least some of the financial functions that DFAS is now performing?

Secretary HALE and Ms. MCGRATH. The Army is using the GFEBS to pilot/test the feasibility of making payments directly from the Treasury to the payee, replacing many of the payment processes and systems currently employed by DFAS today. However, it is too early to estimate potential savings that could result from the pilot and what DFAS functions could be replaced by GFEBS in conjunction with Treasury disbursing. As part of DOD's audit readiness efforts, we will continue to evaluate this effort and determine whether it can potentially replace some DFAS processes and systems.

19. Senator AYOTTE. Secretary Hale and Ms. McGrath, are you aware of any business case that supports having the ERPs communicate directly with the Treasury for financial transactions, bypassing DFAS? If so, please explain. If not, do you intend to conduct that business case analysis? If so, when?

Secretary HALE and Ms. MCGRATH. As explained in the answer to question #18, the Army is using the GFEBS to pilot/test the feasibility of making payments directly from the Treasury to the payee, replacing many of the payment processes and systems currently employed by DFAS today. There is a planned 6-month evaluation period at the conclusion of the pilot. This will include a full Cost-Benefit Analysis and Business Case. These will be used to determine if the Army should go forward with implementing the Treasury disbursing capability Army-wide.

20. Senator AYOTTE. Secretary Hale and Ms. McGrath, is leadership at DOD waiting for the result of the pilot effort with the Army financial ERP GFEBS before approving it?

Secretary HALE and Ms. MCGRATH. DOD has approved the current GFEBS baseline for full deployment and, as explained in the answers to questions #18 and #19, has approved the Army to use GFEBS to pilot/test the feasibility of making payments directly from the Treasury to the payee. There is a planned 6-month evaluation period at the conclusion of the pilot. The results of this evaluation will be used to determine whether these additional capabilities should be integrated in the current GFEBS baseline and deployed throughout the Army. The results of the pilot will be shared DOD-wide.

21. Senator AYOTTE. Secretary Hale and Ms. McGrath, why would an extensive pilot be needed for a brand-new ERP system?

Secretary HALE and Ms. MCGRATH. The complex nature of the business operation involves multiple processes with linked outcomes. A change in a particular process often affects related process, data flows, and systems. There are business process differences between how DOD currently conducts disbursement as compared to the Treasury and a phased approach is prudent to ensure there are no unintended consequences on reconciliation and reporting. We feel it is necessary to assess the impacts in a microenvironment before prematurely rolling out an enterprise solution.

22. Senator AYOTTE. Secretary Hale and Ms. McGrath, other agencies have ERPs that communicate directly with the Treasury. Could your analysis leverage those experiences to possibly field this solution more quickly?

Secretary HALE and Ms. MCGRATH. DOD has consulted with other agencies on their experiences and has benefited from their lessons-learned. Among other examples, the Army has held extensive discussions with Customs and Border Protection (CBP) about the business processes and the efficiencies that agency gained by disbursing directly through Treasury. The Army is leveraging CBP's experience while implementing the Army's ERP. In addition, DOD has been represented in ERP users groups sponsored by the Office of Management and Budget's (OMB) CFO Council, providing other opportunities to leverage non-defense agency experience.

23. Senator AYOTTE. Secretary Hale and Ms. McGrath, please provide a rough order of magnitude of how much could be saved—in terms of dollars and personnel—by this approach vis-a-vis DFAS?

Secretary HALE and Ms. MCGRATH. That information is not yet available. The extent of potential savings is part of what the Army's pilot/test is trying to assess. For the Treasury disbursing capability, it is the Army's belief that by eliminating and streamlining processes and systems, the Army will generate cost savings within DOD and also enhance the likelihood of achieving audit readiness. However, specific figures are still being determined.

24. Senator AYOTTE. Secretary Hale and Ms. McGrath, the Navy ERP is nearly fully deployed. Is it transacting financial payments direct to the Treasury? If not, why not?

Secretary HALE and Ms. MCGRATH. No, the Navy ERP system is not transacting payments to the Treasury. Depending on the results of the ongoing pilot/test, Navy ERP may move in that direction.

FINANCIAL IMPROVEMENT AND AUDIT READINESS PLAN

25. Senator AYOTTE. Secretary Hale, I have reviewed what you have described as Interim Goals for fiscal year 2011 and fiscal year 2012 in your FIAR plans. With the exception of one goal for fiscal year 2011 ("Achieve audit opinion on USMC") and one goal for fiscal year 2012 ("fully deploy GFEBS"), all the others are, in fact, not goals. They are a list of tasks to "begin" or for DOD to "assert", which only begins the audit process. As of today, what is the status of your goals for fiscal year 2011 and fiscal year 2012; as of today, will they be met? If so, please specify when.

Secretary HALE. DOD has set aggressive stretch goals in order to push the organization to meet the goal of audit readiness by September 2017. Since publication of the May FIAR plan Status Report, we have completed six of the eight fiscal year 2011 goals depicted in Figure 7 of the May 2011 FIAR plan Status Report. An independent accounting firm issued a clean opinion on the audit readiness examination of the Army, Navy, and Air Force appropriations received assertions. The IG has begun an examination of the Navy military equipment and accounting firms have begun the examinations of Army entities using GFEBS and Air Force Funds Balance with Treasury reconciliation.

We will not meet all interim goals and our performance in fiscal year 2012 remains to be seen. I have reason to be confident that we can continue to build on the momentum we have developed in fiscal year 2011.

26. Senator AYOTTE. Secretary Hale, why are your goals listed as beginnings or assertions instead of when these tasks will be complete?

Secretary HALE. We have developed a methodology for audit readiness that addresses many lessons from our earlier efforts. The recent GAO audit (http://www.gao.gov/Products/GAO–11–851) reviewed our methodology and reports that "DOD's FIAR Guidance provides a reasonable and systematic process that DOD components can follow in their efforts to achieve audit readiness. It establishes clear priorities for the components and a road map for reaching auditability."

One key part of the process is for the DOD IG and my office to review assertions of audit readiness before beginning a more detailed examination. As also reported in the GAO audit, this review is not a rubber-stamp process and has more often than not determined the component must perform additional work before beginning the external validation. So we consider the beginning of the external validation to be a significant milestone. While not all examinations will result in a clean opinion we feel that the components are more likely than not audit ready when the examination begins.

27. Senator AYOTTE. Secretary Hale, please provide me with a list of when the fiscal year 2011 and fiscal year 2012 tasks are expected to be complete—and not merely begun.

Secretary HALE. We plan to complete validations of audit readiness assertions within 6 months. Several of these early efforts were delayed while we established a contract vehicle for the work. Since publication of the May FIAR plan Status Report, we have completed validations related to three of the fiscal year 2011 goals in Figure 7 of the report, the independent validation of the Army, Navy, and Air Force appropriations received assertions. Three of the other four "begin validation" goals have also been met and all four validations will be complete in fiscal year

2012. The latest status on all fiscal year 2011 and fiscal year 2012 goals will be reported in the November 2011 FIAR plan Status Report.

28. Senator AYOTTE. Secretary Hale, wave 1 of your strategy for financial readiness is for there to be an audit of "Appropriations Received". Isn't that basically just making sure that the congressional appropriations got into the right accounts?

Secretary HALE. Yes, this first phase of our effort is to prove that DOD accurately accounts for and distributes funds provided by Congress into the right accounts in accordance with law. While funds receipt and distribution is a simple process relative to some other DOD processes such as weapon system acquisition, it is an important step for two reasons. First, we want to have independent validation that we receive and distribute funding in accordance with the law to provide Congress confidence. We also want to get our components more experience with the rigors of audit and this was a good early exercise of their ability to meet audit documentation requirements.

29. Senator AYOTTE. Secretary Hale, this sounds simple; why is it that none of the Services—the Departments of the Army, Navy, or Air Force—can do that simple task yet?

Secretary HALE. We always had confidence that the Services could pass this test and in August, an IPA firm completed its examination and issued unqualified ("clean") opinions to the Army, Navy, and Air Force on their Appropriations Received audit readiness assertion. These clean opinions validate that the Military Departments have reliable and auditable processes, controls, and systems in place to record the annual appropriations from Congress.

30. Senator AYOTTE. Secretary Hale, why shouldn't Congress be alarmed that the simple task of depositing the right money into the right accounts before even spending it cannot now be verified by independent auditors?

Secretary HALE. Congress should be confident that we use appropriations in accordance with the law and we now have it verified by an IPA firm. In August, an IPA firm completed its examination and issued unqualified ("clean") opinions to the Army, Navy, and Air Force on their Appropriations Received audit readiness assertion. These clean opinions validate that the Military Departments have reliable and auditable processes, controls, and systems in place to record the annual appropriations from Congress.

31. Senator AYOTTE. Secretary Hale, exactly how is that objective necessary for achieving full audit readiness?

Secretary HALE. Accurate and timely recording of appropriations and other related budget activity is critical as it is the focus of the first third of the Statement of Budgetary Resources (SBR). If the resources received are not recorded accurately then all remaining sections of the SBR will be inaccurate.

32. Senator AYOTTE. Secretary Hale, according to the most recent FIAR plan, this was supposed to have been completed in fiscal year 2010 for the Navy and fiscal year 2011 for the Army and the Air Force. But, they have all been moved to fiscal year 2012. Please explain why.

Secretary HALE. In the May 2011 FIAR plan Status Report, we reported the validations of Army, Navy, and Air Force Appropriations Received audit readiness assertions would be complete in the fourth quarter of fiscal year 2011 and, in fact, they were completed. In August, an IPA firm completed its examination and issued unqualified ("clean") opinions to the Army, Navy, and Air Force on their Appropriations Received audit readiness assertion. These clean opinions validate that the Military Departments have reliable and auditable processes, controls, and systems in place to record the annual appropriations from Congress.

There was a delay to the Navy milestone while we contracted with IPA firms to do this work at the best value to the Government.

33. Senator AYOTTE. Secretary Hale, I am concerned that DOD has too much of a budget focus and not enough of a focus on what they are spending the $700 billion Congress has given them. We know DOD spends enormous resources putting together a budget and justifying the need. We know the management focus is on spending all of the funds we approve for fear of not getting to keep the same level of funding going forward. Now, for the approach to getting to an unqualified audit opinion, DOD is focusing on the SBR—once again a budget focus. Why is DOD not focusing on the balance sheet so we can improve the quality of data captured on what we are buying? It would seem wiser to be focused on the end-to-end business

transactions that encompass both the budgetary and proprietary general ledger account postings.

Secretary HALE. DOD's major financial decisions are based upon budgetary data (e.g., status of funds received, obligated, and expended). Therefore, the first priority focuses on process improvements, controls, and systems associated with budgetary information. This effort involves ensuring improved quality of information in order to better inform decisions—not just to ensure the funds are spent. Fiscal pressure and good stewardship demand this. The budget is key to public sector accounting. Proving positive control over each business event in the end-to-end process provides the framework for the rest of the statements. With modern, capable systems, business events are posted to both proprietary and budgetary ledgers. Our revised strategy to focus on budgetary information and asset counts/locations has resulted in more participation from the non-financial business communities. They are active in our efforts to improve controls over asset management as well as ensuring that obligations are recorded and adjusted when needed. This approach has also been validated by GAO and advisory bodies.

34. Senator AYOTTE. Secretary Hale, doesn't managing to the budget, as the SBR does, focus the FIAR effort mostly on funding in and funding obligated and expended, where Congress wants DOD to focus additionally on what it is buying so it can analyze its buying decisions and the costs of programs, as Secretary Gates complained about?

Secretary HALE. By focusing first on budgetary data, we will improve processes, controls, and systems we use to manage DOD budgets, appropriations, funds availability, and expenditure information—which are critical to effectively managing operations and acquisitions. The type of cost or managerial accounting you refer to in your question is dependent on a basis of accurate financial accounting. We are focused on building that solid foundation while also looking to improve cost accounting.

35. Senator AYOTTE. Secretary Hale, are you focusing on the SBR because you lack the people who understand the proprietary side of the accounting processes and systems?

Secretary HALE. We have some of the finest people in Government. They are experienced, trained, and dedicated. We have an extensive training program to ensure our financial managers know the proper rules and processes. However, they generally do not have financial audit experience. That is changing. We have hired people from the outside, employed contractors, and developed an audit readiness training program. My certification plan that is included in the House and Senate versions of the NDAA of 2012 will institute the skills we need moving forward.

36. Senator AYOTTE. Secretary Hale, it seems you are more comfortable with the budget processes. Does DOD have enough individuals with experience auditing complex financial statements?

Secretary HALE. Our people are experienced, well-trained, and dedicated; but they generally do not have financial audit experience. We are working to add this experience through actual audits and examinations, interaction with experienced auditors helping our audit readiness efforts, training, and through hiring.

37. Senator AYOTTE. Secretary Hale, I understand that you are sponsoring an accreditation program before Congress to increase the number of government employees holding a CPA certification. I applaud this initiative, but how concerned are you that even under the initiative, the workforce within DOD will not be trained quickly or sufficiently enough to achieve a first-time audit opinion by 2017?

Secretary HALE. The 2017 goal is ambitious from a variety of perspectives but we are committed to this date. I hope you will continue to encourage and support this workforce initiative and others which will help us to not only achieve but also sustain auditability in the future. Our intended business environment, as well as external pressure to do more with fewer resources, will demand that our workforce has the right skills. Increased requirements for credentials will be part of this emerging program.

38. Senator AYOTTE. Secretary Hale, how critical is this as a limiting factor?

Secretary HALE. Our people's experience is a critical factor but no single factor will result in success. We believe we have a strategy and approach that addresses all factors sufficiently. Inclusion of FIAR goals as a requirement in performance plans and organization strategic plans will also help motivate our people to get the skills they need to succeed and be rewarded.

OVERSIGHT OF BUSINESS SYSTEMS MODERNIZATION

39. Senator AYOTTE. Ms. McGrath, you are the vice chair of the Defense Business Systems Management Committee (DBSMC), which has been in existence for more than 5 years now. The statute that authorized the DBSMC requires oversight of enterprise architecture and business system modernization efforts across DOD. These ERP systems appear to be at the heart of those modernization efforts, both for audit readiness and other important reasons. Exactly what kind of oversight has the DBSMC provided over these ERP programs?

Ms. MCGRATH. The DBSMC has provided consistent oversight over DOD's ERP investments. In addition to responsibility for reviewing and approving the ERP programs' funds certification requests, the DBSMC has played an active role in defining DOD's overall strategy with regard to these programs, authorizing and reviewing the results of pilot efforts, such as the Procure-to-Pay pilot, to investigate ways to make better use of the capability inherent in the ERP software packages, and holding component leaders responsible and accountable for the performance of their programs.

40. Senator AYOTTE. Ms. McGrath, how often, and specifically how, do you personally verify that the Services are building ERPs in a way that is compatible for the Office of the Secretary of Defense (OSD) and other users to undertake cross-Service search for financial, human resources, or supply information?

Ms. MCGRATH. I am personally involved in ensuring that the Services are building ERPs in a way that is compatible for OSD and other users to undertake cross-Service search for financial, human resources, or supply information in a number of ways. As Vice Chair of the DBSMC, a key member of our IRBs, and Milestone Decision Authority of many of the Service ERPs, I ensure that they are being built in compliance with the BEA, which contains the data and process standards that provide for information interoperability. Additionally, my office, through our ERP laboratory, provides the Services with standard configurations of the major ERP software packages that facilitate Service-specific implementation of the BEA standards. Finally, my office is leading efforts to further improve the BEA and develop innovative technology approaches for business intelligence and analytics.

41. Senator AYOTTE. Ms. McGrath, please provide me with a description of which ERPs the DBSMC reviewed in detail and the dates when the DBSMC conducted those detailed reviews.

Ms. MCGRATH. Since the DBSMC was established in 2005, in addition to considering certification requests for DOD's ERP systems, it specifically reviewed DOD's overarching ERP strategy, Procure-to-Pay End-to-End process pilot efforts, and its individual ERP investments many times. With regard to the individual ERP programs, the DBSMC's reviews included the Defense Integrated Military Human Resources System (DIMHRS), Defense Agencies Initiative (DAI), Navy Enterprise Resource Planning System (Navy ERP), the Air Force's Defense Enterprise Accounting and Management System (DEAMS) and ECSS, the Army's GFEBS, GCSS-Army, and LMP, and the DLA's Enterprise Business System (EBS). These reviews took place on the following dates:

April 29, 2005;
June 5, 2005;
July 27, 2005;
August 31, 2005;
September 28, 2005;
October 25, 2005;
December 1, 2005;
December 21, 2005;
January 25, 2006;
March 23, 2006;
April 13, 2006;
May 19, 2006;
July 26, 2006;
August 23, 2006;
September 22, 2006;
November 30, 2006;
December 21, 2006;
January 31, 2007;
February 22, 2007;
March 29, 2007;
May 22, 2007;

June 25, 2007;
July 23, 2007;
August 17, 2007;
September 26, 2007;
October 26, 2007;
November 27, 2007;
December 21, 2007;
February 1, 2008;
February 28, 2008;
April 3, 2008;
April 29, 2008;
July 24, 2008;
August 21, 2008;
September 24, 2008;
October 30, 2008;
December 5, 2008;
January 14, 2009;
February 24, 2009;
March 30, 2009;
April 30, 2009;
July 21, 2009;
February 2, 2010;
March 2, 2010;
June 1, 2010; and
November 10, 2010.

42. Senator AYOTTE. Ms. McGrath, with this information, please briefly describe the matter reviewed in a level of detail for me to understand the nature of these detailed reviews.

Ms. MCGRATH. The reviews listed in the answer to question #41 vary greatly, but can be grouped into a number of general categories. First, the DBSMC has received a number of broad program overviews, particularly in the months following the creation of the DBSMC in 2005, to introduce the DBSMC members to a particular program. Second, the DBSMC has received program updates throughout programs' acquisition lifecycles to stay informed about progress and share lessons learned across DOD. These updates generally would be composed of broad looks at cost, schedule, performance, and risk factors. Third, the DBSMC has conducted in-depth reviews on particular programs or individual issues associated with particular programs. The subjects of these in-depth reviews vary, but include issues such as interfaces, data conversion, implementation/roll-out, change management, et cetera. Fourth, the DBSMC has received decision briefs on ERP programs or strategies that present potential courses of action for the group's consideration and decision. Finally, the DBSMC has received a number of follow-up briefings to answer members' questions from a previous meeting or present the status of actions assigned at previous meetings.

43. Senator AYOTTE. Ms. McGrath, most of the business systems DOD has bought are over-budget and have gone long past scheduled delivery. The Government Accountability Office (GAO) puts those numbers in the billions of dollars on the budget side, and most of these programs have had to go through the so-called "Critical Change Process (CCP)" with reports to Congress because they breached on execution targets. Exactly what specific changes has the DBSMC prescribed for each of these over-budget programs to get them under control?

Ms. MCGRATH. The senior official, typically the component acquisition executive, within the acquisition chain of command is responsible for certifying programs in accordance with CCP described in 10 U.S.C., Chapter 144a, not the DBSMC. As part of the CCP the senior DOD official responsible for the program provides written certification (with supporting explanation) that:

- the automated information system to be acquired is essential to the national security or to the efficient management of DOD;
- there is no alternative to the system which will provide equal or greater capability at less cost;
- the new estimates of the cost, schedule, and performance with respect to the program and system or information technology investment, as applicable, have been determined with the concurrence of the Director of Cost Assessment and Program Evaluation (CAPE), to be reasonable; and
- the management structure of the program is adequate to manage and control program costs.

Based on the findings of various programs' CCP, the senior official or the Milestone Decision Authority, in consultation with DBSMC members, has directly implemented corrective actions to address the root causes of the breaches. For example, programs have been directed to:

- restructure into smaller increments focused on discrete capability delivery aligned to the user needs;
- put in place additional performance measures to track high risk areas identified by the critical change team, such as interfaces, data conversion, defect reports, et cetera;
- restructure the program's contracts to limit the Government's cost exposure;
- limit obligation authority tied to short-term program milestones vice multi-year funding authority; and
- limit fielding of releases of an increment to do additional testing or demonstrate operational stability of a release prior to full deployment.

44. Senator AYOTTE. Ms. McGrath, most of the CCP submissions to Congress basically come to the conclusion that the status quo is appropriate and that, despite the fact of being over budget and beyond schedule, we should just keep going and going under the original plans. What specific programmatic changes can you point to that the DBSMC has imposed on any of these programs in response to this poor track record?

Ms. MCGRATH. The senior official, typically the component acquisition executive, within the acquisition chain of command is responsible for certifying programs in accordance with CCP described in 10 U.S.C., Chapter 144a, not the DBSMC. As part of the CCP the senior DOD official responsible for the program provides written certification (with supporting explanation) that:

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- limit obligation authority tied to short-term program milestones vice multi-year funding authority; and
- limit fielding of releases of an increment to do additional testing or demonstrate operational stability of a release prior to full deployment.

45. Senator AYOTTE. Ms. McGrath, how often has audit readiness been discussed at DBSMC meetings?

Ms. MCGRATH. DOD's FIAR efforts have been specifically briefed at the DBSMC six times and have also been discussed as part of the DBSMC's quarterly performance reviews.

46. Senator AYOTTE. Ms. McGrath, what specific actions have resulted from those discussions where people were directed to do something differently?

Ms. MCGRATH. Examples of direction from the DBSMC as a result of briefings on DOD's FIAR efforts include revisions of financial management goals in DOD's SMP, further development of the Standard Financial Information Structure (SFIS) standards and additional dialogue between the Under Secretary of Defense (Comptroller), and the CMO of the Air Force to ensure that Air Force audit efforts were properly resourced and aligned with DOD's direction.

47. Senator AYOTTE. Ms. McGrath, the DBSMC has the responsibility to oversee DOD's compliance with the BEA, but GAO has raised concerns about the thoroughness of the reviews that are performed by the IRBs to ensure that compliance is actually occurring. I'm specifically interested in what you call the SFIS, which has been in the architecture for several years and is essential for achieving audit readiness. I believe the DOD IG had written a report a couple of years ago that was very critical of one of the Army ERP programs for not really being compliant with this requirement, even though they had successfully gone through the review process. What steps does the review process under the direction of the DBSMC take to absolutely ensure that these new systems are compliant with this standard financial structure?

Ms. MCGRATH. Since the DOD IG report concerning the Army ERP programs, my office has begun an independent assessment of every ERP and business system that needs to be compliant with SFIS and USSGL. These reviews look at the underlying system's SFIS configuration, its USSGL posting logic, its ability to interface using SFIS, and its financial reporting capability. For each element in SFIS, there are implementable business rules that address syntax, usage, and relationships. To be compliant with SFIS, a system must be compliant with the SFIS business rules. Each business rule is evaluated against the system's configuration. For an ERP, approximately 250 business rules will be evaluated. To date, we have performed 12 validations and expect to complete the remaining 38 validations by December 2012. Additionally, since the DOD IG report concerning the Army ERP programs, the DOD IG has begun to review all ERPs for the SFIS requirements and my staff meets regularly with DOD IG to provide recommendations and exchange information concerning SFIS validation. Prior to this, the SFIS assessment process was a self-assertion process.

48. Senator AYOTTE. Ms. McGrath, where those reviews have actually been conducted, what did they find?

Ms. MCGRATH. As discussed in the answer to question #47, to date, DOD has conducted 12 independent assessments of SFIS compliance and expects to complete the remaining 38 assessments by December 2012. For the systems assessed to date, preliminary results indicate that overall average SFIS compliance is approximately 78 percent. General reasons for non-compliance include:

- Out-of-date reporting chart of accounts
- Out-of-date posting chart of accounts
- Improper posting logic
- System interfaces not yet updated for SFIS compliance
- Poorly maintained data sets
- Improper derivation logic
- External configuration guidance that conflicts with and/or is not documented in the BEA
- Financial business processes highly dependent on non-SFIS or legacy data

We continue to work closely with DOD IG, the Program Offices, and Office of the Under Secretary of Defense (Comptroller) to correct deficiencies that have been identified.

49. Senator AYOTTE. Ms. McGrath, what examples can you offer where you have actually validated this compliance, as opposed to, say, just taking someone's word for it through unchecked self-assertions?

Ms. MCGRATH. As discussed in the answers to questions #47 and #48, my office has begun an independent assessment of every ERP and business system that is required to be compliant with SFIS and USSGL. These reviews look at the underlying system's SFIS configuration, its USSGL posting logic, its ability to interface using SFIS, and its financial reporting capability. To date, we have performed 12 validations and expect to complete the remaining 38 validations by December 2012. Additionally, since the DOD IG report concerning the Army ERP programs, the DOD IG has begun to review all ERPs for the SFIS requirements and my staff meets regularly with DOD IG to provide recommendations and exchange information concerning SFIS validation.

DEFENSE AGENCIES INITIATIVE CASE STUDY

50. Senator AYOTTE. Ms. McGrath, one of the Business Transformation Agency's (BTA) largest initiatives is the DAI, an ERP system for defense agencies. BTA, in fact, was the first agency to implement DAI for itself, and from what we under-

stand, was a small-scale effort but one that was very successful in terms of following the best practices you advocate. Now, we hear that as BTA is being shut down, and about half the agency or so is being folded into your office, that you're going to stop using DAI for your new business in fiscal year 2012 and force the BTA folks that you're inheriting to go back to the old, antiquated system supplied out of DOD. Why would you want to go backwards when you have this new system already up and running?

Ms. MCGRATH. I do not intend to move backwards with DAI deployment plans. The current implementation schedule for DAI, for fiscal years 2012 through 2016, continues to include 25 Defense Agencies.

The Office of the Deputy CMO is part of OSD, which is currently supported by Washington Headquarters Service (WHS). WHS is scheduled to implement DAI in fiscal year 2016. It did not make sense for DOD to significantly alter the implementation schedule for DAI because of a small number of BTA employees moving into OSD.

51. Senator AYOTTE. Ms. McGrath, isn't DOD operation targeted to migrate to DAI in the future?

Ms. MCGRATH. Yes, the activity that supports day-to-day operations for OSD, WHS is scheduled to begin implementation of DAI in fiscal year 2015 and become operational in early fiscal year 2016.

52. Senator AYOTTE. Ms. McGrath, why does it not just accelerate DAI's deployment, instead of forcing you to regress to their old system that appears to be exactly the kind of system you are trying to move away from?

Ms. MCGRATH. Acceleration of the schedule would be extremely challenging and provide increased risk to the established workload. The DAI implementation schedule includes the deployment of multiple sites over the next few years and program resources have been allocated to meet this schedule. Additionally, the specific sites are currently preparing for implementation, which includes data cleansing efforts, training, and BPR. Further, in addition to the increased risk, additional resources would be required to accelerate.

53. Senator AYOTTE. Ms. McGrath, how is jettisoning DAI today consistent with the practices and direction you've otherwise advocated for DOD in terms of improving its business systems and processes?

Ms. MCGRATH. The program has not been jettisoned. The current implementation schedule for DAI, for fiscal years 2012 through 2016, continues to include 25 Defense Agencies.

54. Senator AYOTTE. Ms. McGrath, in your best, independent, professional judgment, should this system continue to be used?

Ms. MCGRATH. Yes, the program should continue. DAI is pivotal for DOD Agencies in terms of meeting the requirements of Federal statutes requiring auditable financials and producing clean audits, and in complying with DOD architectural standards driven by the Deputy Chief Management Officer (DCMO).

55. Senator AYOTTE. Ms. McGrath, what, if anything, does this episode relating to DOD's decision to move away from DAI imply about your office's ability to fulfill its charter?

Ms. MCGRATH. DOD is not moving away from DAI. My office will continue to play a significant role in DOD's DAI implementation and will move to DAI itself with the rest of OSD in early fiscal year 2016. I do not believe that this reflects on my office's ability to fulfill its charter.

56. Senator AYOTTE. Ms. McGrath, regardless of what happened with DAI or why it was done, to what extent does not having funds control of the multiple different service business system programs hamper your ability to get the Services to follow your business transformation guidance or directives?

Ms. MCGRATH. I am currently able to influence funds control of DOD's diverse portfolio of business systems as Vice Chair of the DBSMC, as a member of the IRBs, and as Milestone Decision Authority for many of our business Major Automated Information System (MAIS) programs. However, the proposed changes to 10 U.S.C. Section 2222, expanding and centralizing the oversight function of the IRBs, under consideration by the Congressional Defense Committees in the National Defense Authorization Act (NDAA) for Fiscal Year 2012 would be a welcome expansion of the existing statute, as it would enable greater transparency of business investments.

DISESTABLISHMENT OF THE BUSINESS TRANSFORMATION AGENCY

57. Senator AYOTTE. Ms. McGrath, Secretary Gates directed that the BTA be disestablished in his announcement last August. What impact, if any, will that decision have on your ability to continue to drive business transformation across DOD?

Ms. MCGRATH. I do not see a long-term impact on my ability to drive business transformation across DOD. When BTA was established in 2006, it was entrusted with the mission of reforming and modernizing DOD's business practices. That mission remains valid. However, with the establishment of the position of DCMO as an Under Secretary of Defense-level official in OSD, fairly substantial overlap was created. It was determined that the benefit provided by the BTA could be more effectively realized through the disestablishment of the BTA and the incorporation of its core functions into the office of the DCMO and the incorporation of its direct program management responsibilities for specific enterprise Defense Business Systems (DBS) into the DLA. This consolidation will enable more agile management of DOD's business transformation functions and enhance our ability to carry out our mission.

58. Senator AYOTTE. Ms. McGrath, it seems that transformation kinds of programs require highly skilled people to lead those efforts. I, however, understand that more than a third of the BTA staff has left DOD since the Secretary's announcement last year, including most of the top leadership. Why should I not conclude that this will negatively impact on your ability to be successful?

Ms. MCGRATH. My office continues to be equipped with the people and hiring authorities necessary to effectively execute its mission. First, while we lost several key personnel during the disestablishment of the BTA and the incorporation of its core functions into the office of the DCMO and the incorporation of its direct program management responsibilities for specific enterprise DBS into the DLA, we also retained many key personnel, including those with expertise in ERP system implementations, architecture development, and process improvement, among other critical skills. We are moving quickly to hire new staff to replace those that left. Additionally, I plan on continuing to utilize the Highly Qualified Expert (HQE) hiring authority, which BTA used quite effectively, to hire individuals outside of the Federal Government who are leading authorities in technical disciplines and other areas of expertise needed by the Government to satisfy emerging and non-permanent requirements. I embrace the HQE model and intend to supplement my seasoned government staff with these HQEs.

EXPEDITIONARY COMBAT SUPPORT SYSTEMS

59. Senator AYOTTE. Ms. McGrath and Secretary Morin, one of the most expensive ERP systems in DOD is the Air Force's ECSS. While this ERP, which is actually a commercial-off-the-shelf system, is primarily seen as a logistics system, our understanding is that it is also very much a financial system, in particular for the Air Force's Working Capital Fund (WCF).

Since having begun in 2004, to date this program has spent approximately $800 million and has yet to really deliver any meaningful capabilities. And it won't be fully deployed until 2016—just a year before the 2017 deadline by which DOD must be audit-ready. To me, this sounds like a train wreck waiting to happen. On what factual basis do you have confidence that this program will get fully implemented or provide required capability as intended?

Ms. MCGRATH. I share your concerns regarding ECSS. In February 2011, the Milestone Decision Authority, the Under Secretary of Defense for Acquisition, Technology, and Logistics directed the program to create time and condition-based success criteria that if not met, would be used to evaluate future options for ECSS. The Milestone Decision Authority allowed the program to proceed with increment one, Pilot C (material management) because that effort was already on contract with the system integrator as a fixed-price effort.

By September 2011, it was evident that the program was not able to meet the stated success criteria. Therefore the Milestone Decision Authority directed the program to conclude pilot C and stop work on pilot D (mobile supply chain management) which limits the Government's customer liability. In addition, the Milestone Decision Authority created an assessment team to identify possible way-ahead options for the program. The assessment team concluded their analysis and made a recommendation to the Milestone Decision Authority in late 2011. The Milestone Decision Authority is in the process of evaluating the information.

Secretary MORIN. The Air Force has already fielded some limited system capability through ECSS Pilot A (Vehicle and Tools Management) and Pilot B (Equip-

ment Management) at Hanscom AFB. In addition, the Air Force reviews ECSS' key metrics on a weekly basis to assess the progress of software code development, data cleansing, interface test readiness, test case execution, and deficiency reports. This review provides leadership with actionable information on the health of Pilot C (Materiel Management) and Pilot D (Mobile Supply Chain) activities. The ECSS program is both a critical and complex enterprise. Although its performance has been inconsistent, ECSS is only one tool the Air Force plans to use to create auditable financial statements. The combination of enhancements to legacy systems and fielding of ERP systems helps reduce the risks of achieving the 2017 deadline.

60. Senator AYOTTE. Ms. McGrath, what specific oversight, if any, has you office exercised over this program?

Ms. MCGRATH. My office has direct involvement with the oversight of this program. In February 2011, in concert with the Under Secretary of Defense, Acquisition, Technology and Logistics, we created an Overarching Integrated Product Team (OIPT) lead for MAIS DBS. The DBS OIPT is chaired by one of my senior division directors who reports directly to me and the Milestone Decision Authority. The DBS OIPT lead is well-versed in DOD's business processes as well as the defense acquisition process.

61. Senator AYOTTE. Ms. McGrath, on the basis of that oversight, what are your concerns about this ERP?

Ms. MCGRATH. My concerns with ECSS center around the ability of the program office to meet the criteria established in February 2011 (reference my response to question #59). As such, I worked with the Milestone Decision Authority to place the following conditions on the program as part of the critical change certification per 10 U.S.C. Chapter 144a:

- Document and lock requirement for ECSS Increment I, Pilot C and D. Pilot C was designed to provide operational and tactical logistics capability at the base level. Pilot D was designed to provide capability that would enable Air Force personnel to operate in a disconnected environment; i.e., away from a base. The intent of this action was to prevent "requirements churn".
- Define the success criteria the Air Force will use to assess the health of the program as well as alternative strategies to provide the necessary ECSS capabilities if the program is unable to meet the defined success criteria. The intent of this condition was to define and enforce a performance based "trigger" that the Air Force could be used to evaluate success of the program.
- Adopt program status metrics defined by the Milestone Decision Authority to measure the health of the program. The intent of this condition was to establish a set of transparent measures that all program stakeholders could use to monitor the health of the program.

62. Senator AYOTTE. Ms. McGrath, has your office explored, or does it intend to explore, any alternatives to ECSS?

Ms. MCGRATH. Yes, my office is actively exploring options for ECSS. In fact, functional and ERP experts from my staff are directly involved in the assessment team referenced in response to question #59. Further, the DBS OIPT referenced in response to question #60 has a direct role in the assessment process.

63. Senator AYOTTE. Ms. McGrath, at some point, don't you need to just shut down out-of-control programs like this? Should that happen here?

Ms. MCGRATH. Yes, we should shut down out-of-control programs. In this case, however, I believe it was not appropriate to shutdown ECSS because Increment One, Pilot C (base level logistics support) was already on contract with the system integrator as a fixed price effort. Increment One, Pilot D on the other hand (disconnected logistics support) was not under contract on a fixed-priced basis. In September, when it was evident that the program was not able to meet established success criteria (see question #61), the Milestone Decision Authority directed the program to stop work on Increment One, Pilot D, effectively limiting the Government's liability and shutting down future development work. In addition, the Milestone Decision Authority created an assessment team to identify possible way-ahead options for the program. The assessment team made a recommendation in late 2011 that we are in the process of evaluating.

64. Senator AYOTTE. Secretary Morin, has the Air Force explored, or does it intend to explore, an alternative to ECSS?

Secretary MORIN. Yes, the Air Force has and will continue to investigate alternatives to the ECSS program. In February 2011, the Air Force submitted the ECSS Critical Change report through OSD/AT&L to Congress. The report included analysis of several delivery alternatives and different ECSS program structures. In addition, the Air Force actively monitors the health of ECSS using pilot programs, capturing metrics, and collectively assessing ECSS alternatives. The metrics reviews and alternative development efforts are ongoing.

ENTERPRISE ARCHITECTURE AND INVESTMENT CONTROLS [1]

65. Senator AYOTTE. Ms. McGrath and Mr. Khan, as Congress, the OMB, and the Federal Chief Information Officers Council (CIOC) have recognized, effectively using a well-defined enterprise architecture is vital to organizational transformation and systems modernization. A corporate approach to investment controls management is a similarly important characteristic of successful public and private organizations. DOD continues to release updates to its corporate enterprise architecture. But, how successfully has this architecture been federated through the development of aligned subordinate architectures for each of the Military Departments?

Ms. MCGRATH. BEA is the thin enterprise architecture layer that articulates the corporate vision, strategic direction, and principles for the target capabilities and processes in support of the DOD Strategic Management Plan goals. It is aligned to and decomposed by the Military Departments into segment architectures. Individual program and system investments and their architectures are first aligned with and assessed against the Military Departments' architectural segments and then assessed against the enterprise direction contained in the BEA for capital planning and investment control. While important progress has been made, as recognized by the GAO, architecture federation between BEA and the Military Department architectures remains a challenge.

Mr. KHAN. As we reported in June 2011,[2] adopting a federated[3] approach continues to be a challenge with much remaining to be accomplished at the component level. While DOD continues to release updates to its corporate enterprise architecture, the architecture has yet to be federated through development of aligned subordinate architectures for each of the Military Departments. Each of the Military Departments has made progress in managing its respective architecture program, but there are still limitations in the scope and completeness, and the maturity of the Military Departments' architecture programs. For example, while each department has established or is in the process of establishing an executive committee with responsibility and accountability for the enterprise architecture, none has fully developed an enterprise architecture methodology or a well-defined BEA and transition plan to guide and constrain business transformation initiatives.

In addition, while DOD continues to establish investment management processes, the DOD enterprise and the Military Departments' approaches to business systems investment management still lack the defined policies and procedures needed for effective investment selection, control, and evaluation. Until DOD fully implements these institutional modernization management controls required by law and addressed in GAO recommendations, its business systems modernization will likely remain a high-risk program.

66. Senator AYOTTE. Ms. McGrath and Mr. Khan, how does DOD intend to improve in this area?

Ms. MCGRATH. DOD is focused on improving architecture federation in two main areas. First, we have shifted the BEA from being organized functionally to being organized based on end-to-end (E2E) business processes. Second, we are mandating the use of international standards for building architectures. Our use of standards such as the Web Ontotology Language (OWL) and Business Process Modeling Notation (BPMN) provides the same opportunity for universal understanding that HyperText Markup Language (HTML) provides for users browsing pages on the internet. Both areas will facilitate the alignment and integration of DOD's efforts.

- DOD has identified 15 E2E business processes that represent a set of mature industry and Government leading practices for horizontal integration

[1] GAO, DOD Financial Management: Numerous Challenges Must Be Addressed to Improve Reliability of Financial Information, GAO–11–835T (Washington, DC: July 27, 2011).

[2] GAO, DOD: Further Actions Needed to Institutionalize Key Business System Modernization Management Controls, GAO–11–684 (Washington, DC: June 29, 2011).

[3] A federated architecture consists of a family of coherent but distinct member architectures, in which subsidiary architectures conform to an overarching corporate architectural view and rule set.

across the organization. DOD's Strategic Management Plan (fiscal years 2012–2013) in its goal #6 focuses DOD's efforts to reengineer/use E2E business processes to reduce transaction times, drive down costs, and improve service. For fiscal year 2012, DOD is focusing first on mapping the Procure-to-Pay and Hire-to-Retire processes while continuing to enhance other E2E processes.

• The E2Es are represented as Business Process Models (BPMs) and are both horizontally integrated and vertically integrated where they connect. The DCMO issued an executive memorandum requiring that the BEA adopt international standards for visualizing the BPMs and for the identifying and documenting the data required to support the models. BEA version 10.0 will be based opon these standards. As the Military Departments adopt these standards, it will support better alignment and federation to the BEA.

Mr. KHAN. As we reported in June 2011,[4] a well-defined federated architecture and accompanying transition plans for the business mission area, along with well-defined investment management policies and procedures across all levels of DOD, are critical to effectively addressing DOD's business systems modernization high-risk area. DOD has continued to take steps in defining and implementing key institutional modernization management controls, but challenges that we identified in prior years[5] still need to be addressed. Our previous recommendations to DOD have been aimed at accomplishing these and other important activities related to its business systems modernization. To DOD's credit, it has agreed with these recommendations and said it is committed to implementing them.

NAVY SYSTEMS AUDIT READINESS

67. Senator AYOTTE. Ms. McGrath and Secretary Commons, the Marine Corps has been trying to become fully auditable for quite some time, putting a lot of effort into this. Yet, it seems like every year the FIAR plan indicates slippage, and that the Navy won't ever get to the goal. What, in your view, are the primary obstacles to progress?

Ms. MCGRATH. The current legacy environment has several material internal control deficiencies such as lack of proper supporting documentation, non-standard systems, non-standard data, and non-standard processes. DOD needs to move to a business environment that enforces internal controls and begins to replace non-standard business operations and systems. A disparate system environment is one of the key challenges in achieving auditability. As stated in the DOD 2010 Agency Wide Financial Report, material weaknesses fall into two major categories: (1) Noncompliant Systems. Most legacy systems do not comply with the wide range of systems requirements, and do not provide assurance that core financial systems and related information is traceable to source transactional information. Smaller organizations have successfully applied compensating controls, as demonstrated by favorable audit opinions, but these are not as practical in larger organizations, such as the military departments. (2) Legacy Financial Processes. Many financial processes, such as accounts receivable and accounts payable, do not comply with Generally Accepted Accounting Principles (GAAP) because they are dependent on the noncompliant legacy systems currently used to compile financial information for DOD financial statements. Leveraging ERP investments to their fullest potential will increase referen-

[4] GAO–11–684.

[5] See for example, GAO, DOD Business Systems Modernization: Recent Slowdown in Institutionalizing Key Management Controls Needs to Be Addressed, GAO–09–586 (Washington, DC: May 18, 2009); DOD Business Systems Modernization: Military Departments Need to Strengthen Management of Enterprise Architecture Programs, GAO–08–519 (Washington DC: May 12, 2008); DOD Business Systems Modernization: Progress in Establishing Corporate Management Controls Needs to Be Replicated Within Military Departments, GAO–08–705 (Washington, DC: May 15, 2008); Business Systems Modernization: Department of the Navy Needs to Establish Management Structure and Fully Define Policies and Procedures for Institutionally Managing Investments, GAO–08–53 (Washington, DC: Oct. 31, 2007); Business Systems Modernization: Air Force Needs to Fully Define Policies and Procedures for Institutionally Managing Investments, GAO–08–52 (Washington, DC: Oct. 31, 2007); DOD Business Systems Modernization: Progress Continues to Be Made in Establishing Corporate Management Controls, but Further Steps Are Needed, GAO–07–733 (Washington, DC: May 14, 2007); Business Systems Modernization: DOD Continues to Improve Institutional Approach, but Further Steps Needed, GAO–06–658 (Washington, DC: May 15, 2006); and DOD Business Systems Modernization: Important Progress Made in Establishing Foundational Architecture Products and Investment Management Practices, but Much Work Remains, GAO–06–219 (Washington, DC: Nov. 23, 2005).

tial integrity, reduce the number of interfaces, and significantly reduce these material weaknesses.

Secretary COMMONS. The major challenges the Navy faces pursuing auditability are in two general areas. First, the Navy's business-financial environment has evolved over time without synchronization to financial audit standards. Business processes have been tailored by users for their own optimization; financial accounting implications of these designs were of a lesser concern. End-to-end business processes span multiple functional areas, with stakeholders both in and outside of the Navy; coordinating these multiple stakeholders to embrace changes needed for audit readiness is a large task. Moreover, legacy accounting systems have been designed primarily to perform funds/budgetary accounting, not proprietary/financial accounting.

Our second challenge is data management. Source documentation to support a financial audit may not be available in all instances, as systems and processes have not been designed to support audit readiness. Building an audit response infrastructure, which can assemble and transfer massive amounts of transactional data in a short timeframe, is a complex challenge.

68. Senator AYOTTE. Ms. McGrath and Secretary Commons, the Navy has its core accounting system, and then all these feeder systems, some of which are Marine Corps systems, DFAS systems, DOD systems, et cetera. From what you've learned, how does all this integration to these other systems impact the Navy's ability to become ready for an audit?

Ms. MCGRATH. Integration between core accounting systems and legacy feeder systems is a challenge as the key to becoming auditable rests with developing compliant, integrated systems aligned to our stated audit objectives. If we cannot completely integrate our financial and financial feeder systems we will implement and document manual work-arounds in order to become ready for an audit.

Secretary COMMONS. As the number of systems and systems owners increase, the complexity of the challenge increases commensurately. However, audit readiness in this complicated business-financial environment is feasible. Auditability is dependent on strengthening the control environment of our end-to-end business processes. In that vein, standardization of our business process and associated systems are key elements of these end-to-end processes.

As a milestone in audit readiness, comprehensive surveys must be conducted on relevant business systems to ensure that their general (access and security) controls and their application (business execution, including interfaces) controls are designed and operating effectively. The Navy will continue to conduct surveys on its major business-financial systems and correct any deficiencies indicated by these assessments; an assessment of Navy ERP's control environment using financial audit standards is currently underway.

The Navy is also highly dependent on multiple outside service providers (primarily other Defense agencies) which manage and maintain business systems producing data flowing to the Navy financial statements. These service providers must bolster the control environments of their contributing business systems by assessing their general and application controls and strengthening them where necessary. The Navy is partnering with OSD, other components, and with external service providers to ensure that joint collaboration leads to success.

69. Senator AYOTTE. Ms. McGrath and Secretary Commons, what, if anything, is your office doing to either make these other systems compliant to support an audit or to replace them?

Ms. MCGRATH. I have made a concerted effort as part of the systems acquisition process to ensure that business systems progress toward DOD audit goals while also delivering capability to the users. To that end, I fully support the DOD Comptroller's effort, which was integrated with a recent acquisition decision, to rely upon the opinion of an IPA firm, to be expressed in an examination of the Navy audit readiness assertion of a Navy ERP entity, currently planned for September 30, 2012. This approach will allow for identification of system and process enhancements scheduled for completion within 12 months.

Secretary COMMONS. The control environment of all relevant business systems must be assessed for adequacy, and changes must be made to strengthen the controls when necessary to support audit readiness. Enforced standardization of our business processes is the underlying foundation. The Navy will conduct these surveys on the major business-financial systems managed and maintained by the Navy. We are partnering with OSD, other components, and with external service providers to ensure success in this area.

70. Senator AYOTTE. Ms. McGrath, please provide a list of those systems, especially the ones that are required to be used by OSD across DOD, that represent the most significant stumbling blocks to audit readiness and explain exactly what the plan is to overcome this problem for each of these systems.

Ms. MCGRATH. Some of the most critical enterprise systems to achieving audit readiness are the Defense Departmental Reporting System and the Defense Cash Accountability System, which are part of the Business Enterprise Information Services (BEIS) family of systems, as well as the Automated Disbursing System (ADS) and the Deployable Disbursing System (DDS), which are part of the Standard Disbursing Initiative (SDI). The BEIS family of systems provides timely, accurate, and reliable business information from across DOD to support auditable financial statements and provides specific functionality such as a DOD-wide system for Treasury reporting. SDI addresses current disbursing challenges by consolidating existing functionality to meet DFAS customer needs for enterprise ADS and tactical DDS disbursing. These enterprise systems are primarily developed and maintained by DOD core service providers such as the DFAS and DLA and must efficiently work with each of the Military Department's financial systems and processes. To ensure that this happens, the DCMO and Under Secretary of Defense (Comptroller), through the FIAR governance structure, are facilitating collaboration between the service providers and Military Departments to make sure that the necessary changes are made on both sides to create an effective target environment.

Additionally, each Military Department has a number of legacy systems in place that must be replaced through the implementation of modern ERP systems to achieve audit readiness. These ERPs come with greater capabilities and higher level controls than the systems they're replacing. These plans are included in the DOD's FIAR plan.

71. Senator AYOTTE. Secretary Commons, I understand that when the Navy's primary ERP system is fully deployed it will only cover just over half of all obligation authority in the Navy. The rest will be covered by legacy financial systems. How will the Navy maintain a clean audit opinion if it achieves one?

Secretary COMMONS. The control environments of Navy ERP and other business-financial systems must be assessed and strengthened to ensure that they meet the standards for financial auditability. Enforced standardization of our business processes is the underlying foundation. The Navy will make necessary changes to its legacy and Navy ERP financial systems to strengthen its key internal and systems controls as required. We will also partner with outside service providers to ensure they do the same to their systems which support us. To ensure sustained effectiveness, key controls will be continually monitored and periodically tested as an essential component of the system owner's internal controls program.

72. Senator AYOTTE. Secretary Commons, is it the Navy's plan to employ a time-consuming, expensive manual effort each year to maintain a clean audit opinion with the legacy financial systems?

Secretary COMMONS. It is not our intent to employ a time consuming, expensive manual effort each year to maintain a clean audit opinion with our legacy financial systems. The Navy plans to implement Navy ERP through the present schedule, which encompasses six large acquisition commands. The Navy will continue to assess the costs and benefits of expanding the number of organizations using Navy ERP; part of the cost-benefit equation will be the costs and returns of audit readiness.

The Navy will make necessary changes to its legacy and Navy ERP financial systems to strengthen its key internal and systems controls as required, with the objective of automating as many manual processes as possible. We will also partner with outside service providers to ensure they do the same to their systems which support us. To ensure sustained effectiveness, key controls will be continually monitored and periodically tested as an essential component of the system owner's internal controls program.

LEADERSHIP AND ACCOUNTABILITY

73. Senator AYOTTE. Mr. Khan, my sense is that there is no day-to-day commitment among leadership at DOD to achieve auditability. And, DOD's oversight of the components' efforts to become auditable seems to rely mostly on self-reporting. Do you agree?

Mr. KHAN. The DOD Comptroller has expressed commitment to the FIAR goals, and has established a focused approach that is intended to help DOD achieve suc-

cesses in the near-term. But the financial transformation needed at DOD, and its removal from GAO's high-risk list, is a long-term effort. Improving financial management will need to be a cross-functional endeavor; which requires improvement in some of DOD's other business operations such as those in the high-risk areas of contract management, supply chain management, support infrastructure management, and weapon systems acquisition. As acknowledged by DOD officials, sustained and active involvement of DOD's CMO, the DCMO, the DOD Comptroller, the Military Departments' CMOs, and other senior leaders is critical for the successful implementation of the FIAR plan. Absent continued momentum, the current initiative may falter, as have previous efforts.

Ensuring effective monitoring and oversight of progress—especially by the leadership in the components—will be key to bringing about effective implementation through the components' Financial Improvement Plans (FIP). Effective oversight also holds individuals accountable for carrying out their responsibilities. In this regard, DOD has introduced incentives such as including FIAR goals in Senior Executive Service Performance Plans.

74. Senator AYOTTE. Mr. Khan, how, in your view, can top leadership at DOD better drive throughout DOD an effort as large as achieving the first unqualified audit opinion of DOD's consolidated financial statements?

Mr. KHAN. DOD's past strategies for improving its financial management were ineffective, but recent initiatives are encouraging. In 2005, DOD issued its FIAR plan for improving financial management and reporting. In 2009, the DOD Comptroller directed that FIAR efforts focus on financial information in two priority areas: budgetary information and asset accountability. The FIAR plan also has a new phased approach that comprises five waves of concerted improvement activities. The first three waves focus on the two priority areas and the last two waves on working toward full financial statement auditability. The FIAR plan is being implemented largely through the DOD components, including the Army, the Navy, and the Air Force Military Departments and the DLA, through the development and implementation of their respective FIPs—lending increased importance to the commitment of component leadership. The component's FIPs are intended to both guide and document financial improvement efforts.

As discussed in our testimony,[6] improving DOD's financial management operations and thereby providing DOD management and Congress more accurate and reliable information on the results of its business operations will not be an easy task. Numerous challenges must be addressed in order for DOD to successfully reform financial management. Some of the key challenges that DOD must address in order for the financial management operations of DOD to improve to the point where DOD may be able to produce auditable financial statements are:

- Committed and sustained leadership. Improving financial management will need to be a cross-functional endeavor. The successful resolution of the weaknesses in financial management depends on improvements in some of DOD's other business operations such as contract management, supply chain management, and weapon systems acquisition. As acknowledged by DOD officials, sustained and active involvement of DOD's CMO, the DCMO, the Military Departments' CMOs, the DOD Comptroller, and other senior leaders is critical.
- Effective plan to correct internal control weaknesses. Because of DOD's complexity and magnitude, developing and implementing a comprehensive plan that identifies DOD's internal control weaknesses will not be an easy task. But it is a task that is critical to resolving the longstanding weaknesses and will require consistent management oversight and monitoring, at all levels including each and every component of DOD, for it to be successful. Such a baseline could be used to assess and plan for the necessary improvements and remediation to be used to measure incremental progress toward achieving estimated milestones for each DOD component and DOD.
- Accountability and effective oversight. Ensuring effective monitoring and oversight of progress—especially by the leadership in the components—will be key to bringing about effective implementation of the FIAR plan through the components' FIPs. If DOD's future FIAR plan updates provide a comprehensive strategy for completing Waves 4 and 5, the FIAR plan can serve as an effective tool to help guide and direct DOD's financial management reform efforts.

[6] GAO–11–835T.

75. Senator AYOTTE. Mr. Khan, what value do you see in either separating the CMO position from the position of Deputy Secretary of Defense or putting the responsibility for achieving an unqualified audit opinion of DOD's consolidated fiscal year 2017 financial statements under the joint leadership of the CMO and the CFO?

Mr. KHAN. Because of the complexity and long-term nature of DOD's business transformation efforts, GAO has recommended the need for a separate CMO position with significant authority, experience, and a sufficient term to provide focused and sustained leadership. In May 2007, the Secretary of Defense designated the Deputy Secretary of Defense as DOD's CMO. The NDAA for Fiscal Year 2008 codified the CMO position, created a DCMO position, directed that CMO duties be assigned to the Under Secretary of each Military Department, and required DOD to develop a SMP for business operations.

DOD has taken various steps to implement the CMO and DCMO positions, and to develop a strategic plan. For example, in 2008, DOD issued its first SMP. DOD has also issued directives that outlined broad CMO and DCMO responsibilities, established a DCMO office, and named an Assistant DCMO. In July 2009, and again in December 2010, DOD updated its SMP. As of March 2010, all of the Military Departments had CMOs in place, and in July 2010, the DCMO was confirmed in her position. In addition, DOD has established various governance entities, such as the DBSMC, which is intended to serve as the primary forum for addressing overall business transformation, and the End-to-End Process Governance Board, whose role is to advise the DBSMC on opportunities to enhance the management and execution of end-to-end business processes across DOD. While GAO recognizes that DOD has taken some positive steps, our work indicates that additional opportunities exist for the CMO, assisted by the DCMO, to provide the leadership needed to ensure that actions to implement reforms are completed and to achieve the goals reflected in the SMP, including those in areas we have identified as high-risk, such as financial management. Moreover, opportunities also exist for the CMO and DCMO to take on a greater leadership role in implementing ongoing DOD-wide efforts to achieve more efficiencies in its operations and to ensure results in individual business areas. Finally, DOD needs to take additional actions to further develop a business transformation plan that contains measurable goals and funding priorities and that is supported by a strategic planning process that includes mechanisms to fully align plans and budgets and to measure progress against goals. It remains to be seen whether the current arrangement, rather than establishing the CMO as a separate position, will enable DOD to provide the long-term sustained leadership needed to address significant challenges in its business operations.

The CMO has various responsibilities, including to develop and maintain a DOD-wide strategic plan for business reform; establish performance goals and measures for improving and evaluating overall economy, efficiency, and effectiveness; and monitor and measure the progress of DOD. The DOD Comptroller/CFO is focused on the financial management aspects of DOD, which includes preparing auditable financial statements. Based upon our discussions with the office of DOD's Comptroller/CFO and statements made by DOD's DCMO and DOD Comptroller/CFO, at the hearing, they are working in a collaborative manner to address DOD's business transformation issues and auditability. Both individuals are part of the FIAR Governance Board which is responsible for reviewing the DOD components' progress in achieving auditability. Further, both offices participate in the review of the various DOD components' efforts to modernize their business systems, which DOD has acknowledged as critical for achieving audit readiness by fiscal year 2017. Issuing auditable financial statements is a key responsibility of the DOD Comptroller, but the CMO and DCMO will be instrumental in supporting the Comptroller's efforts to improve the reliability of financial information generated by business functions for which other DOD leaders are responsible.

76. Senator AYOTTE. Mr. Khan, from a management or leadership perspective, what, if anything, can be done to better ensure commitment and support across functional areas to improve financial management at DOD?

Mr. KHAN. The DOD Comptroller has expressed commitment to the FIAR goals, and established a focused approach that is intended to help DOD achieve successes in the near-term. But the financial transformation needed at DOD, and its removal from GAO's high-risk list, is a long-term endeavor. Improving financial management will need to be a cross-functional endeavor. The successful resolution of the weaknesses in financial management depends on improvements in some of DOD's other business operations such as contract management, supply chain management, and weapon systems acquisition. As acknowledged by DOD officials, sustained and active involvement of DOD's CMO, the DCMO, the Military Departments' CMOs, the DOD Comptroller, and other senior leaders is critical. Furthermore, it is paramount

that DOD's ongoing efforts to improve financial management through the FIAR plan and the components' FIPs must be institutionalized—at all working levels—in order for success to be achieved.

77. Senator AYOTTE. Mr. Khan, there can be no doubt that effective accountability and oversight are vital to effectively implementing DOD's financial management and related business process reform. The FIAR plan has established a set of review bodies for governance and oversight of the Plan's implementation. But, what more, if anything, can be done to ensure effective monitoring and oversight of progress—especially by the leadership in the components?

Mr. KHAN. DOD established a governance structure for the FIAR plan that includes review bodies for governance and oversight. The governance structure is intended to provide the vision and oversight necessary to align FIAR efforts across DOD. To monitor progress and hold individuals accountable for progress, DOD managers and oversight bodies need reliable, valid, meaningful metrics to measure performance and the results of corrective actions.

In May 2009, we reported[7] that the FIAR plan did not have clear results-oriented metrics. To its credit, DOD has taken action to begin defining results-oriented FIAR metrics for use in providing visibility of component-level progress in assessment, and in testing and remediation activities, including progress in identifying and addressing supporting documentation issues. We have not yet had an opportunity to assess implementation of these metrics—including the components' control over the accuracy of supporting data—or their usefulness in monitoring and redirecting actions.

The success of the FIAR plan is dependent upon the ability of the components to develop and implement their respective FIPs. The components' plans are intended to guide and document financial improvement efforts. In this regard, component senior leadership, such as the CMO, needs to be actively involved in the oversight and monitoring of their component's efforts to help ensure that corrective actions are being taken to resolve the longstanding financial management weaknesses that limit DOD's ability to produce accurate and reliable information on the results of operations. Further, while DOD has established a governance structure to oversee and monitor the components' efforts, the various governance bodies must be active participants in order for the components' FIPs to be effective in resolving DOD's longstanding financial management weaknesses.

78. Senator AYOTTE. Mr. Khan, to help drive the cultural change through DOD that is necessary for these important initiatives to succeed, we have to demonstrate that there is a cost for an inferior FIAR plan or ERP transition plan. Otherwise, I believe very little will change. In your view, what should those consequences be?

Mr. KHAN. As discussed in our testimony,[8] ensuring effective monitoring and oversight of progress—especially by the components' leadership—will be key to bringing about effective implementation, through the components' FIPs. If DOD's future FIAR plan updates provide a comprehensive strategy for completing Waves 4 and 5, the plan can serve as an effective tool to help guide and direct DOD's financial management reform efforts.

Effective oversight holds individuals accountable for carrying out their responsibilities. DOD has introduced incentives such as including FIAR goals in Senior Executive Service Performance Plans, increased reprogramming thresholds granted to components that receive a positive audit opinion on their SBRs, audit costs funded by OSD after a successful audit, and publicizing and rewarding components for successful audits. The challenge now is to evaluate and validate these and other incentives to determine their effectiveness and whether the right mix of incentives has been established.

79. Senator AYOTTE. Mr. Khan, can any type of budgetary consequence, for example, be useful?

Mr. KHAN. The FIAR plan has established various milestones to mark when specific actions are to be completed as DOD continues to work on its two priority areas—budgetary information and asset accountability. The FIAR plan has also identified specific timeframes for when DOD's various ERP efforts are going to be implemented. DOD has stated that these system efforts are critical to achieving auditability. Congressional hearings on the ability of DOD to achieve these milestones would be one way to encourage the development of quantitative measures on

[7] GAO, Financial Management: Achieving Financial Statement Auditability in the Department of Defense, GAO–09–373 (Washington, DC: May 6, 2009).

[8] GAO–11–835T.

the progress being made to achieve auditability. These hearings could also be used by Congress to assess whether continued funding of certain efforts is worthwhile.

As noted in our testimony,[9] effective oversight holds individuals accountable for carrying out their responsibilities. DOD has introduced incentives such as including FIAR goals in Senior Executive Service Performance Plans, increased reprogramming thresholds granted to components that receive a positive audit opinion on their SBRs, funding of audit costs by the OSD after a successful audit, and publicizing and rewarding components for successful audits. To determine their effectiveness and whether the right mix of incentives has been established, DOD needs to evaluate and validate these and other incentives, including the possibility of other organization-based incentives such as incentives or disincentives to DOD components based on results.

SKILLED WORKFORCE

80. Senator AYOTTE. Mr. Khan, there can be no doubt that effective financial management in the Federal Government today requires a knowledgeable and skilled workforce that includes individuals who are trained and certified in accounting, well-versed in government accounting practices and standards, and experienced in information technology. While the authority to hire HQEs was put in place for DOD to go find private sector experts who have experiences with ERP business systems and mergers and acquisitions, my sense is that DOD has, instead, been using that unique authority to hire the same types of civilians who should be brought under the regular general service/senior executive service schedule. Do you agree?

Mr. KHAN. While DOD's fiscal year 2009 Strategic Civilian Human Capital Plan mentions some use of the HQEs,[10] we have not assessed how DOD has implemented this authority. Specifically regarding the plan, DOD noted that authorities for the Intergovernmental Personnel Act[11] and HQEs are used as an avenue to fill some positions with highly technical requirements, but neither authority can be used to fill continuing positions. This results in a high turnover rate and lack of stability for work that is continuing. It also states that, in areas of emerging science, medical technologies, and information technology, DOD has supplemented its Federal workforce with both HQEs and contractor personnel. According to the 2009 plan, since September 11, 2001, and the beginning of the Overseas Contingency Operations, contractors and HQEs have commonly been used to fill gaps in expertise in the Federal DOD workforce. However, it further stated that the HQE authority had some stringent guidelines and could not be used to address all gaps. While we note that the 2009 plan discussed DOD's use of such authorities for some of its functional communities, to date, we have not assessed the extent to which or how this authority has been used by DOD, particularly in the area of financial management.

81. Senator AYOTTE. Mr. Khan, what more, if anything, can be done to ensure that DOD hires and retains the skilled workforce needed for it to successfully transform its business operations to become efficient, effective, and accountable?

Mr. KHAN. Effective financial management in DOD will require a knowledgeable and skilled workforce that includes individuals who are trained and certified in accounting, well-versed in government accounting practices and standards, and experienced in information technology. Hiring and retaining such a skilled workforce is a challenge DOD must meet to succeed in its transformation to efficient, effective, and accountable business operations. The NDAA for Fiscal Year 2006[12] directed DOD to develop a strategic plan to shape and improve DOD's civilian workforce. The plan was to, among other things, include assessments of: (1) existing critical skills and competencies in DOD's civilian workforce; (2) future critical skills and competencies needed over the next decade; and (3) any gaps in the existing or future critical skills and competencies identified. In addition, DOD was to submit a plan for developing and reshaping the civilian employee workforce to address any identified gaps. The plan was to include specific recruiting and retention goals and strategies on how to train, compensate, and motivate civilian employees. In developing the plan, DOD identified financial management as one of its enterprise-wide mission-critical occupations.

[9] GAO–11–835T.
[10] 5 U.S.C. § 9903.
[11] 5 U.S.C. §§ 3371–3376.
[12] Pub. L. No. 109–163, div. A, § 1122, 119 Stat. 3136, 3452 (Jan. 6, 2006). The NDAA for Fiscal Year 2010 made this strategic plan into an annual requirement. Pub. L. No. 111–84, div. A, § 1108, 123 Stat. 2190, 2488 (Oct. 28, 2009), codified at 10 U.S.C. § 115b.

In July 2011, we reported[13] that DOD's 2009 overall civilian workforce plan had addressed some legislative requirements, including assessing the critical skills of its existing civilian workforce. Although some aspects of the legislative requirements were addressed, DOD still has significant work to do. For example, while the plan included gap analyses related to the number of personnel needed for some of the mission-critical occupations, DOD had only discussed competency gap analyses for three mission-critical occupations—language, logistics management, and information technology management. A competency gap for financial management was not included in DOD's analysis. Until DOD analyzes personnel needs and gaps in the financial management area, it will not be in a position to develop an effective financial management recruitment, retention, and investment strategy to successfully address its financial management challenges.

STATEMENT OF BUDGETARY RESOURCES

82. Senator AYOTTE. Secretary Morin, exactly how is the Air Force planning to get an audit of its SBR 2 years after the Army is planning to and 4 years after the Navy?

Secretary MORIN. The Air Force schedule for auditing its SBR is within the timeframe established in the 2010 NDAA. The first step in the process is to evaluate the current state of processes and systems and determine the necessary corrective actions. The constraining factors on the Air Force schedule are primarily related to financial systems modernization. We have accelerated aspects of our audit readiness efforts, such as budget authority, and continue to look for other opportunities to reach audit readiness sooner. We are proceeding in a methodical fashion to reduce the risk of not meeting the 2017 deadline.

83. Senator AYOTTE. Secretary Morin, what has the Air Force learned from the Marine Corps' success and how have those lessons been incorporated?

Secretary MORIN. The Air Force reviewed the Management Letter from the Marine Corps' audit. We looked at each finding and evaluated its relevance to the Air Force. Of the 71 findings, our initial review determined that 68 items could possibly impact the Air Force. As we evaluate systems and processes, we continue to keep the findings from the Marine Corps' audit efforts in mind, ensuring our review is as complete as possible.

84. Senator AYOTTE. Secretary Morin, at this point, what's the most significant impediment to the Air Force's ability to get its SBR audit ready?

Secretary MORIN. Perhaps the greatest challenge is the state of the legacy systems. While many of our systems allow the Air Force to efficiently manage its operations, they do this at the expense of transparency. We are unable to pull the detailed transactions from many systems that are necessary to support the summary level balances. In order to rectify these shortcomings, the Air Force is relying on a systems modernization effort that includes replacement of legacy systems with ERP systems, as well as cost-effective system enhancements and process improvements to provide the necessary detail in certain legacy systems. For example, we recently implemented a standard document numbering policy in our legacy accounting system that will allow us to perform a detailed reconciliation on our Budget Authority. We are continuing to look at legacy system enhancements as we develop our ERP systems.

ARMY'S ENTERPRISE RESOURCE PLANNING SYSTEMS

85. Senator AYOTTE. Secretary Matiella, DOD's FIAR plan has a strong emphasis on the implementation of GFEBS, as the cornerstone of your audit readiness strategy. But GFEBS, which covers the General Fund of the Army, represents only part of the Army. It doesn't include any of the Army's Working Capital Fund, which is measured in tens of billions of dollars annually. I understand that most of that activity is going to occur in another system called the LMP, which is managed out of Army Materiel Command. The DOD Inspector General (IG) has, however, been particularly critical of LMP for its compliance regarding financial management controls. What is your role in overseeing LMP and ensuring that it meets the same financial standards and requirements as GFEBS?

[13] GAO, DOD Civilian Personnel: Competency Gap Analysis and Other Actions Needed to Enhance DOD's Strategic Workforce Plans, GAO–11–827T (Washington, DC: July 14, 2011).

Secretary MATIELLA. I am responsible for ensuring LMP financial functionality meets audit standards and requirements. My staff oversees Army Materiel Command actions to ensure LMP meets financial compliance standards and that the problems identified in the DOD IG audit are addressed. This oversight has achieved positive results. We have updated LMP's general ledger to include the missing accounts identified by the audit. We have identified requirements for compliance with DOD's Standard Financial Information Structure (SFIS), and are on track to add these requirements to LMP's baseline in fiscal year 2012. We have included LMP and working capital fund requirements in our FIP to ensure management controls, business process, and systems for both meet audit readiness requirements. We will continue to work with the auditors to identify problems and initiate corrective actions to ensure LMP is audit ready by fiscal year 2017.

86. Senator AYOTTE. Secretary Matiella, LMP has already been deployed to parts of the Army for a few years now. Have any auditors examined that system and provided any feedback on its ability to support a financial audit?

Secretary MATIELLA. My office is working closely with Army Audit Agency to ensure LMP complies with the financial systems requirements of the FFMIA of 1996. The audit agency examined LMP in 2007, and reported the system substantially complied with the 757 applicable FFMIA requirements. Now that LMP is fully deployed, we have engaged the audit agency to perform a follow-on FFMIA compliance audit that will test 1,298 requirements. The requirements growth is attributable to functionality added to the LMP baseline since 2007, and the growth in DOD's compliance criteria. Additionally, we have included LMP and working capital fund requirements in our FIP to ensure management controls, business process, and systems for both meet audit readiness requirements.

87. Senator AYOTTE. Secretary Matiella, I understand that the Army is buying two logistics ERPs—the LMP system and the GFEBS–Army. Why?

Secretary MATIELLA. The LMP system is the logistics and financial management system for the Army Working Capital Fund, which is a separate legal entity from the Army General Fund. The Working Capital Fund conducts business that is very different from the General Fund. The LMP system provides logistics and inventory support for the Army's depots, arsenals, and wholesale supply facilities. LMP will serve as the general ledger for the Army's Working Capital Fund. The GFEBS supports the Army's General Fund business and financial reporting requirements.

88. Senator AYOTTE. Secretary Matiella, why is the Army buying one logistics ERP for ground logistics and the Marine Corps is buying a completely separate one, made by a different company, so that the two systems will be unable to work together?

Secretary MATIELLA. GCSS-MC and GCSS-Army will be interoperable just as Army and Marine Corps systems interoperate today—they will be perfectly capable of passing transactions back and forth to one another. However, it is important to realize that less than 1 percent of the transactions occurring within Army logistics systems involve the Marine Corps. Most of the Army's logistics transactions (tens of thousands daily) are within Army Enterprise Systems, or with the DLA, all of which run the same commercial software, SAP. It is far more important that the Army and DLA work together than it is to optimize Army systems with the Marine Corps. Also, GCSS–A and GFEBS use the same SAP software and share a common financial design, including a standard general ledger configuration, to ensure auditability and financial interoperability between the two systems. An initial review estimates moving Army to GCSS-MC would increase life cycle costs substantially and would place the Army's ability to be auditable by fiscal year 2017 at significant risk.

89. Senator AYOTTE. Secretary Matiella, what is the cost per transaction and cost per user of the legacy systems versus the ERP systems?

Secretary MATIELLA. Prior to initiating an ERP development effort, an economic analysis is performed to justify investment in the ERP. Each economic analysis is subject to multiple reviews, and is ultimately approved by DOD's CAPE organization. The economic analysis documents the cost and justifies the economic benefit of the ERP development. The ERP systems have many different types of transactions that are more complex than those in the legacy environment, making a cost per transaction comparison very difficult. For example, the ERP systems track cost, asset values, and expenses at the transaction level. This capability is not present in the legacy environment. Unlike the legacy systems, the ERP systems provide integrated general ledger capabilities, updating the general ledger instantly at the

transaction level. Many general ledger updates in the legacy environment are done at a summary level, a practice that will not pass audit scrutiny. Although transactional complexity is greater in the ERP environment, this complexity is necessary to achieve DOD's audit readiness goals, and to provide transparent cost and financial information for use by managers and review by auditors.

QUESTIONS SUBMITTED BY SENATOR JOHN MCCAIN

DEFENSE FINANCIAL MANAGEMENT METRICS

90. Senator MCCAIN. Secretary Hale and Mr. Khan, during the Readiness and Management Support Subcommittee of the Senate Armed Service Committee hearing, Secretary Hale said that DOD is doing well on financial management, citing the relatively low levels of Anti-Deficiency Act (ADA) violations at DOD as compared with other Federal agencies. Specifically, you mentioned that only 20 cents of every $1,000 appropriated to DOD were in violation of the ADA—much lower than other agencies. You also stated that DOD pays its bills on time and avoids interest payments—another indicia of sound financial management. If these are the only important indicia of sound financial management, why, in your view, has DOD remained on GAO's High-Risk List for its financial management since 1995?

Secretary HALE. I continue to strongly feel that we have "islands" of excellence, and elements of our process tied to our stewardship culture—ADAs and timely payments are two. While these are important indicators of sound financial management, they are certainly not the only ones. Broadly, a financial audit opinion is the most comprehensive and important indicator and it is something that DOD has not yet achieved. Being able to achieve auditability would ensure that we had eliminated the kind of systemic weakness that have kept us on the GAO High-Risk List to date. Therefore, we will continue to focus on these two indicators, while also focusing on the broader objective of achieving auditability.

Mr. KHAN. These are two indicators that are important, but provide information about narrow aspects of DOD financial management. Furthermore, the 13 material weaknesses in financial management reported by the DOD auditors,[14] and the lack of audit assurance and reliability surrounding DOD's financial information, call into question the completeness and accuracy of these two measures.

Also, discussed in our testimony,[15] numerous challenges must be addressed in order for DOD to successfully reform its financial management operations. One of those challenges is the development and implementation of an effective plan to correct internal control weaknesses. Internal control comprises the plans, methods, and procedures that serve as the first line of defense in safeguarding assets and preventing fraud. In May 2009, we reported[16] that the FIAR plan had not established a baseline of DOD's state of internal control and financial management weaknesses. Such a baseline is used to plan for and assess improvements and remediation. DOD currently has efforts underway to address known internal control weaknesses through three integrated programs: (1) Internal Controls over Financial Reporting (ICOFR) program; (2) ERP implementation; and (3) the FIAR plan. However, the effectiveness of these three integrated efforts in establishing a baseline remains to be seen.

Furthermore, the success of the Military Services' ability to achieve audit readiness of their SBR should help provide broader measures of DOD's financial management effectiveness. The DOD Comptroller has indicated that one of the highest priorities in improving financial management is the improvement of the budgetary information and processes underlying the SBR. A successful SBR audit is an important tool in providing accountability and discipline over the budgetary resources provided by Congress.

91. Senator MCCAIN. Mr. Khan, what metrics does GAO use to make this determination for high risk, both generally and with respect to DOD's financial management?

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[14] DOD's auditors have reported material financial management weaknesses in the following areas: (1) Financial Management Systems, (2) Fund Balance with Treasury, (3) Accounts Receivable, (4) Inventory, (5) Operating Materials and Supplies, (6) General Property, Plant, and Equipment, (7) Government-Furnished Material and Contractor-Acquired Material, (8) Accounts Payable, (9) Environmental Liabilities, (10) Statement of Net Cost, (11) Intragovernmental Eliminations, (12) Other Accounting Entries, and (13) Reconciliation of Net Cost of Operations to Budget.

[15] GAO–11–835T.

[16] GAO–09–373.

Mr. KHAN. GAO maintains a program to focus attention on government operations that it identifies as high risk due to their greater vulnerabilities to fraud, waste, abuse, and mismanagement. An individual performance and accountability challenge merits a GAO high-risk designation when it involves a program or mission area having national significance or a management function that is key to performance and accountability. We then determine whether the risk stems from an inherent risk, which may arise when the nature of a program creates susceptibility to fraud, waste, and abuse, or a systemic problem, which may arise when programmatic, management support, or financial systems, policies, and procedures established by an agency are ineffective.

We also consider qualitative and quantitative factors. Qualitative factors include whether the risk is seriously detrimental to the Nation in areas that include, for example, health or safety or national defense. We also consider potential results of the risk, such as significantly reduced effectiveness and efficiency; injury or loss of life; unreliable decisionmaking data; reduced confidence in government; misuse of sensitive information; or program failure. In addition to qualitative factors, we consider the exposure to loss in monetary or other quantitative terms. A minimum of $1 billion must be at risk in areas such as:

- the value of major assets;
- revenue sources (e.g., taxes due) not being realized;
- improper payments; and
- contingencies or potential liabilities (e.g., environmental cleanup).

Before assigning a high-risk designation, we determine and assess the effectiveness of an agency's planned and ongoing corrective actions to address a material weakness. This assessment considers whether the agency has demonstrated commitment to resolving the problem, progress in addressing the problem, appropriate corrective action planning, and solutions that will be substantially completed near-term and will resolve the root cause of the problem. These criteria and other elements of the assessment of programs for designation as high risk, and for removal from the list, are discussed further in GAO's Determining Performance and Accountability Challenges and High Risks.[17]

With regard to the designation of DOD's financial management as high risk, the area meets the criteria as a program and a mission area of national significance and as a management function that is key to performance and accountability. Longstanding and pervasive weaknesses in DOD's financial management and related business processes and systems have: (1) resulted in a lack of reliable information needed to make sound decisions and report on the financial status and cost of DOD activities to Congress and DOD decisionmakers; (2) adversely impact its operational efficiency and mission performance in areas of major weapons systems support and logistics; and (3) left DOD vulnerable to fraud, waste, and abuse.

The financial transformation needed at DOD, and its removal from GAO's high-risk list, will be a long-term effort. Improving financial management needs to be a cross-functional endeavor. The successful resolution of the weaknesses in financial management depends on improvements in some of DOD's other business operations such as contract management, supply chain management, and weapons systems acquisition. As acknowledged by DOD officials, sustained and active involvement of DOD's CMO, the DCMO, the Military Departments' CMOs, the DOD Comptroller, and other senior leaders is critical.

GENERAL FUND ENTERPRISE BUSINESS SYSTEMS

92. Senator MCCAIN. Ms. McGrath, during the Readiness and Management Support Subcommittee of the Senate Armed Services Committee hearing, Mr. Hale mentioned several times that the Army's GFEBS was undergoing an audit check. He also said, "I don't want to get all these ERP systems deployed at great cost and in considerable time find out we're not using them in the right way." With this in mind, why did you approve GFEBS full deployment last month before this audit was completed and before evaluating the results of that audit?

Ms. MCGRATH. In June 2011, I approved a Full Deployment Decision (FDD) for GFEBS because the program met the criteria established in the Acquisition Program Baseline and had successfully completed an Independent Operational Test and Evaluation. I recognize the importance of the financial audit to DOD however and as part of the FDD, I levied specific audit related criteria that the Army must meet before declaring GFEBS fully deployed.

[17] GAO, Determining Performance and Accountability Challenges and High Risks, GAO–01–159SP (Washington, DC: November 2000).

ARMY VS. MARINE CORPS ENTERPRISE RESOURCES PLANNING SYSTEMS

93. Senator MCCAIN. Ms. McGrath, you stated that the reason the Army and Marine Corps have two very different, but similar sounding, ERP systems for logistics was that they were: "embedded into very different I'll say business processes that they execute their both supply and maintenance infrastructures. So although they sound very much the same, they do operate within two very different infrastructures and processes and they are not one-for-one used by the same people. And so, although, as I mentioned, they sound very similar, there's a lot more detail behind the execution of those systems and those capabilities that those systems enable." Why do the Army and Marine Corps, both ground military forces with similar equipment and doctrine, have very different processes?

Ms. MCGRATH. The way the systems are employed is tactically different. For example, the Marine Corps system requires servers to be placed on ships and taken ashore when operations require traversing long distances inland. This distributed architecture is needed because the Marine Corps does not have the robust satellite-based networking capability that the Army has in every battalion throughout its force structure.

94. Senator MCCAIN. Ms. McGrath, did they not go through BPR under the direction of your office before the adoption and installation of their billion dollar ERPs?

Ms. MCGRATH. Most of the large ERP investments predate the decision to create the DCMO as well as the NDAA provision that requires the DCMO or Military Department CMO to make BPR determinations. However, the DCMO is involved with the Army's ongoing ERP Strategy review, which is continuously seeking to improve its business processes leveraging its ERP implementations.

95. Senator MCCAIN. Ms. McGrath, will the Army and Marine Corps continue to maintain very different business processes for logistics, maintenance, and supply functions? If so, why?

Ms. MCGRATH. Yes, I believe the Army and Marine Corps will continue to maintain different business processes for logistics, maintenance, and supply functions. GCSS-Army and GCSS-Marine Corps have very different mission and system requirements, even though they do perform some similar core logistics functions. The primary differences are scale of operations, interoperability with other Service-component systems, and financial reporting processes. However, the two systems will interoperate to the degree necessary to conduct joint operations.

96. Senator MCCAIN. Ms. McGrath, what plan, if any, is there to subject those processes to BPR?

Ms. MCGRATH. I will look for opportunities where it makes sense to drive common business processes across DOD. For example, I am establishing an enterprise architecture to determine the feasibility of leveraging the Military Services' processes in our end-to-end business cycles. The Services' business systems will then be compared to the established process to focus project execution and enable trade-offs across a portfolio to reduce redundancy and effectively align resources to deliver valued mission capabilities. The business processes between the Army and Marine Corps are more different than alike and to adopt a standard set of processes prematurely would drastically affect each organization's ability to organize, train, equip, and operate in support of the combatant commanders.

97. Senator MCCAIN. Ms. McGrath, there may be a case for the Navy and Air Force having different logistics needs as ships and planes are very different. But, how are the Marine Corps and Army so different that they need separate, wholly incompatible billion-dollar ERP systems that are supposed to be modeled after commercial best practices?

Ms. MCGRATH. The primary differences are related to complexity and scope. The GCSS-Army system supports a customer base much greater than the GCSS-Marine Corps system (four times more people and equipment) and provides much greater functionality resident in the system. GCSS-Army Increment I provides the tactical warfighter with supply, maintenance, ammunition, property accountability, integrated materiel management center, management functionality, and support to tactical financial processes. GCSS-Marine Corps Increment 1 provides Combat Service Support functionality: Supply, Maintenance, Task Organization, and Request Tracking in a shared data environment in support of deployed operations.

Additionally, there are numerous situations where the Army and the Marine Corps have been working together to improve systems interoperability. For example, in Iraq and Afghanistan the legacy Standard Army Retail Supply System and Ma-

rine Corps Supported Activities Supply System interoperate today. Legacy operations over the last 12 months have resulted in over 6,000 orders with a 92 percent fill rate out of over 19.6 million overall supply transactions.

Further, the interaction between the Army and Marine Corps in the greater logistics area is a relatively small (less than .03 percent of Army transactions in the past 6 months), whereas the interaction within the Army and with the DLA makes up the vast majority of the workload. As a result, the emphasis has been to improve the interoperability between the Army and DLA.

98. Senator MCCAIN. Ms. McGrath, please provide the Analysis of Alternatives (AoA) that the Army used in determining to not implement the Marine Corps' ERP solution.

Ms. MCGRATH. The AoA for the GCSS-Army is attached.

[See annex printed at the end of this hearing].

99. Senator MCCAIN. Ms. McGrath, when will OSD adopt the DAI to manage its business processes?

Ms. MCGRATH. The activity that supports OSD, WHS, is scheduled to begin implementation of DAI in fiscal year 2015 and complete implementation in early fiscal year 2016.

100. Senator MCCAIN. Ms. McGrath, shouldn't OSD lead the way with ERP implementation?

Ms. MCGRATH. OSD is currently supported by WHS. WHS is scheduled to begin implementation of DAI in fiscal year 2015 and complete implementation in early fiscal year 2016. Acceleration of the schedule to accommodate a small number of employees moving from the BTA into OSD would be extremely challenging and provide increased risk to the established workload. The DAI implementation schedule includes the deployment of multiple sites over the next few years and program resources have been allocated to meet this schedule. Additionally, the specific sites are currently preparing for implementation, which includes data cleansing efforts, training, and BPR. Further, in addition to the increased risk, additional resources would be required to accelerate. I intend to leverage lessons learned within the defense agencies when deploying DAI across OSD.

101. Senator MCCAIN. Ms. McGrath, how can the CMO convince the Military Services and other agencies through change management to adopt ERPs and turn off legacy systems while they continue to use their legacy system?

Ms. MCGRATH. Each of the Services is committed to the implementation of ERPs in order to modernize their business system environments and drive toward audit readiness. However, turning off legacy systems remains a challenge. That said, there has been recent progress in sunsetting legacy systems. For example, the fielding of Navy ERP has enabled the retirement of 27 systems to date, with 69 more planned by 2016. Additionally, DOD is using the tools provided by Congress in 10 U.S.C. section 2222, such as the IRBs, the BEA, and the ETP, to ensure that legacy systems are being turned off as new capability comes online. However, section 2222, as written, focuses exclusively on development and modernization (i.e., new systems), and not legacy systems in sustainment. The changes to section 2222 under consideration by the Congressional Defense Committees in the NDAA for Fiscal Year 2012 could provide DOD with a more effective tool to drive the retirement of DOD legacy systems.

ANNEX

[The Analysis of Alternatives for the Global Combat Support System-Army, follows:]

DEPARTMENT OF THE ARMY
UNITED STATES ARMY COMBINED ARMS SUPPORT COMMAND
SUSTAINMENT CENTER OF EXCELLENCE
2221 ADAMS AVENUE
FORT LEE, VIRGINIA 23801-2102

REPLY TO
ATTENTION OF

ATCL-DC 14 April 2010

MEMORANDUM FOR Program Executive Officer, Enterprise Information Systems: Attn: SFAE-PS, 9350 Hall Road, Suite 141, Fort Belvoir, VA 22060-5526

SUBJECT: Revalidation of the Global Combat Support System – Army (GCSS-Army) Analysis of Alternatives for Milestone C

1. References:

a. Abbreviated Analysis of Alternatives (AoA), ATCL-S, 6 Apr 02, subject: Enterprise Resource Planning (ERP) Capability Global Combat Support System-Army/Tactical (GCSS-Army (A/T))

b. Memorandum from HQ, US Army CASCOM, ATCL-S, 24 Oct 05, subject: Revalidation of the Global Combat Support System – Army (GCSS-Army) Analysis of Alternatives (AoA) for MS B

c. Memorandum from Program Executive Officer, Enterprise Information Systems (PEO EIS), SFAE-PS, 25 May 2007, subject: Revalidation of the Global Combat Support System-Army (GCSS-Army) Analysis of Alternatives (AoA) for Milestone B

2. In preparation for GCSS-Army Milestone C Decision, we conducted a review of the AoA for the GCSS-Army program, dated 6 Apr 02, to determine its sufficiency. We have reviewed the effective traceability of the GCSS-Army CDD requirements to the SAP ERP model and the subsequent traceability to the operational architecture products that were developed to drive development and evaluation of the system. Given the results of this review and the findings documented in references 1b and 1c, we affirm that an ERP technical approach continues to be the appropriate alternative.

3. Point of Contact for this action is Mr. Robert Thurston, Enterprise Systems Directorate, 804-734-1212.

FOR THE COMMANDER:

WILLIAM F. MOORE
Senior Executive Service
Deputy to the Commanding General

Abbreviated Analysis of Alternatives (AoA)
Enterprise Resource Planning (ERP) Capability
Global Combat Support System - Army/Tactical (GCSS-A/T)

1. PURPOSE. The analysis presented in this document is an attempt to lay out the relevant factors necessary to enable the Army's senior logistics leadership to make an informed decision on the direction for the development and acquisition strategy for GCSS-A/T (Tier One).

2. PROBLEM STATEMENT. GCSS-A/T is currently being developed as a custom code product to meet specific Army requirements documented in an Operational Requirements Document (ORD) and a requirements data base. Senior leadership is considering a dramatic change to this strategy, i.e. converting to a Commercial-Off-The-Shelf (COTS) ERP (SAP-based) application. This analysis must provide senior leadership with the requisite information to enable an informed decision. Answers must be developed for the following questions:

- Will converting to a COTS ERP strategy provide a demonstrable benefit to the Army over its current custom code strategy in terms of schedule, increased functionality, cost effectiveness, sustainability, total life cycle cost, training, scalability, flexibility, joint interoperability, and growth potential?
- What impacts would the adoption of commercial business processes that are the core of a COTS ERP application have on doctrine, training, leadership development, organizational design, materiel development external to GCSS-A/T, and the environment of the soldier?

3. BACKGROUND.

a. GCSS-A/T was initiated to replace our obsolete stove-piped legacy retail logistics systems with a modern integrated system. The proliferation of different software and hardware solutions to Army logistics requirements has led the Army to the current status of a wide variety of Standard Army Management Information Systems (STAMIS) solutions. Additionally, supplemental and add-on systems have been developed to provide management visibility into the supply chain in order to perform logistics planning and resource allocation to satisfy operational requirements.

b. In addition to the STAMIS issue, Tier II integration between GCSS-A/T and the Wholesale Logistics Modernization Program (WLMP) (Exhibit XXX) requires that interface issues be examined. Since the WLMP has selected the SAP R/3 ERP commercial software (Exhibit IV) as its core wholesale supply chain, operational, and management software package, it is critical to examine the feasibility of the use of this

same commercial software to provide functionality for GCSS-A/T. The current strategy is to have the WLMP and GCSS-A/T prime contractors to work together on integrating and interfacing their systems. The Government has a responsibility to sort out the functional process.

c. Three applicability studies by contractors have determined that SAP products could be utilized for GCSS-A/T development, if the Army adopts SAP's commercial processes. Many of the specific tactical Army impacts associated with the adoption of SAP commercial processes are unknown.

d. An ERP pilot program at the installation level was approved March 01, 2001, by the Commanding General of the U.S. Army Materiel Command (AMC) with Cooperate Board of Directors (CBOD) concurrence. The installation pilot program was never funded for execution.

f. On 11 February 2002 during a meeting with Mr. John W. McDonald, Deputy Under Secretary of the Army, it was decided that an analysis would be conducted to compare a SAP product solution to a custom development solution for GCSS-A/T. This document records that analysis.

4. STUDY OBJECTIVES.

a. Identify the associated costs and impacts to the GCSS-A/T and the tactical Army with the implementation of each proposed development option:

(1) Custom development of software to meet the requirements specified in the GCSS-A ORD and inherent in our present processes; or

(2) Adoption of a "packaged" commercial off-the-shelf software solution (based on SAP products) and new processes for operation of the tactical Army.

b. Determine the relative contribution each development option makes to force effectiveness based on measures of performance (MOP) and measures of effectiveness (MOE) that are tied to required operational capabilities stated in the GCSS-A operational requirements document (ORD).

c. Recommend a GCSS-A/T development course of action to Army leadership.

5. ALTERNATIVES.

a. Custom Development Software Solution -- Continuation of the present modular software development effort for the GCSS-A/T that focuses on the development of unique code to meet the requirements identified in the GCSS-A/T ORD. Reengineer business processes to achieve more efficient operations. To ensure interoperability with the WLMP, adjustments will be made to the GCSS-A/T software to incorporate a set of prescribed business processes that the WLMP will generate during its development.

Utilizing an incremental development approach, to limit disruption to present development efforts, merge the ERP capabilities of WLMP and GCSS-A/T into a single integrated, seamless, system for the Army.

b. Commercial Software Solution -- GCSS-A ERP functionality will be developed based on incorporation of SAP software applications by the GCSS-A/T prime contractor, TRW. The GCSS-A effort will proceed in parallel to WLMP efforts to ensure that the tactical Army below the MACOM level is not adversely impacted by a move to an Army-wide ERP capability. Add-on applications will be developed to supplement SAP packaged solutions to ensure tactical Army requirements are met. The end-state is an integrated enterprise system based on a single set of data in a centrally managed database.

6. ISSUES.

a. A decision on the ERP or CSS information management needs of the Army and associated development approach for the GCSS-A/T is needed now. Everyday it is delayed is a potential waste of resources if the strategy is changed.

b. The most significant issue in this decision is that analytical information on costs external to GCSS-A/T, DTLOMS impacts, potential architectures, and return on investment are not available.

c. Previous studies must be relied upon for analytical data on whether the commercial option has the functionality to address operational requirements specified in the GCSS-A/T operational requirements document (ORD).

d. Differing architectural approaches for GCSS-A development will have to be considered after a decision is made on the basic method, i.e., custom development or COTS product, to meet the Army's ERP needs. Some of the architectural approaches under consideration are stated in Exhibit II.

7. ASSUMPTION. Both alternatives would provide a system equally interoperable with other systems and meet the C4 systems objectives and principles stated in Joint Publication 6-0. Detailed assumptions related to conformance to overarching requirements are stated in Exhibit I.

8. STUDY RESOURCES. Three studies were conducted that focused on the applicability of using the commercial products of SAP to build an ERP for the GCSS-A/T and are the foundation for the analysis presented in this document. It is important to point out that contractors did not evaluate any alternatives and they did not conclusively prove any of the advantages they stated would be achieved. To ensure this analysis was not unfavorably skewed toward a commercial solution, information on the benefits, limitations, and cost of our present custom development effort was obtained from various subject matter experts and considered. (Exhibit XV) Cost and schedule information for this analysis was provided by the PMO GCSS-A. The studies on the use of SAP products are:

a. Computer Sciences Corporation (CSC) report, "Army Tactical - Strategic Logistics Integration," dated 19 Feb 2001. (Exhibit XVIII)

(1) Working under a delivery order awarded by the U.S. Army Materiel Command (AMC) this study focused on determining the means of integrating the Army's strategic, operational, and tactical functions into a total Army logistics solution.

(2) CSC recommends that SAP products be utilized for GCSS-A/T development as well as for system development at the wholesale level. They state that wholesale and retail processes should be combined. CSC emphasizes a commercial-off-the-shelve (COTS) solution, with integrated processes, would provide the Army with the integrated enterprise-wide CSS system required to achieve Joint Vision 2010 doctrine requirements; receive the benefits of corporate planning and funding of upgrades; and a enterprise solution now. CSC states that an ERP based on SAP products can provide the Army with the following overall benefits:

- An opportunity for total integration of strategic, operational, and tactical business processes
- A synthesis of business process reengineering with all supporting business processes
- Warfighter access to all asset, readiness, financial, and supply chain information on an individual, real-time basis
- Top-down upgrade and configuration management of automation enablers at all echelons
- Power to incorporate/implement emerging/evolving business processes that will improve readiness
- Visibility on Return on Investment
- Reduction of the Total Cost of Ownership.

(3) The study recommended an Army-wide ERP solution, based on SAP products, be developed in two parallel efforts: an effort to address tactical logistics processes to replace legacy STAMIS and an effort to integrate retail and wholesale business processes.

b. PricewaterhouseCoopers (PwC) Consulting report, "GCSS-A/T SAP Implementation Analysis," dated December 2001. (Exhibit XVII)

(1) The report provides an analysis of a SAP implementation for the GCSS-A/T maintenance functionality. The focus of the report is maintenance and associated maintenance supply and maintenance management functionality, however the report covers alternative scenarios including extending the SAP system to incorporate the full suite of GCSS-A/T application modules.

(2) PwC recommends the implementation of SAP products at the tactical level as a viable and compelling business automation solution. PwC states that an ERP system such as SAP is almost an imperative in order to meet the strategic goals that the

Army has put forward in such endeavors as the CS/CSS Transformation and the "National Maintenance Program". To ensure a successful implementation that meets the Army's vision, cost and schedule, PwC Consulting further recommends that the Army:

- Make the adoption of SAP and the best business practices inherent to the SAP system a corporate priority.
- Provide program leadership at the highest levels, and create one project with authority to design and implement an Army-wide solution.
- Discipline the Blueprinting process to avoid recreating the Army's legacy systems and processes.
- Invest in existing technology to provide the telecommunications infrastructure to all GCSS-A/T users, both in garrison and in a deployed environment.
- Prepare for major Change Management issues starting now – especially the Army Acquisition Process as it relates to a COTS implementation, Business Process Reengineering and Project Oversight.

(3) After publishing this study, PwC determined that the Army's systems architecture might be too large for SAP Application Link Enabling technology and synchronization by mobile servers will reduce data validity, accuracy and timeliness. PwC now recommends all Army users work with the enterprise database in real-time. For tactical users, the Army should purchase communications equipment and satellite airtime to ensure real-time operations. (Exhibit IV & Exhibit XVI)

(4) PwC Consulting is preparing an addendum to this study. The report will incorporate revised assumptions from the original study in the following areas:

- Increased functional scope to cover all GCSS-A/T modules (except SPR)
- Increased number of end users resulting in increased SAP license costs, end user devices and fielding effort
- Development of a limited "disconnected" operation capability for Combat Repair Teams and Maintenance Support Teams using the SAP Mobile Engine
- Local (End User) Hardware costs aligned with GCSS-A/T PMO budget estimates
- Satellite communications to Active Duty, Reserve and National Guard units in support of CAISI-E fielded to tactical BDE HQs, tactical BN HQs, and 50% of tactical separate companies.

c. TRW Incorporated report, "GCSS-A/T SAP Enterprise Resource Planning (ERP) Evaluation Final Report," dated 17 January 2002. (Exhibit XIV)

(1) The report captures the evaluation of the SAP R/3 ERP commercial software product for GCSS-A/T Maintenance Module use. This effort only dealt with maintenance module requirements and the key performance parameters stated in the GCSS-A ORD.

(2) TRW states the evaluation shows it is technically feasible to use SAP for the GCSS-A/T maintenance module. TRW gave the product a weighted score of 81.6 in ability to meet requirements via out of the box capabilities, with customization, or by using third-party vendor software.

9. MEASURES OF EFFECTIVENESS / MEASURES OF PERFORMANCE (MOE/MOP).

a. The CSC study reviewed an initial list of 7,295 GCSS-Army requirements and reduced it down to 761 GCSS-A Tier 1 (integrate & modernize legacy systems) requirements as a baseline to evaluate the applicability of a SAP product solution. They found that a SAP product met 77 percent (583) of the tactical Army's 761 functional requirements and the other 23 percent (177) could be met with an Army process change or addition of a third-party product to enhance SAP's capabilities. Details of their requirements analysis is contained in Exhibit C of their study.

b. PwC evaluated the "level of fit" between SAP and the Army's requirements. A key component of this analysis was a detailed review of the GCSS-A/T maintenance and associated supply and management requirements. Their findings show a high degree of fit between the Army requirements and the standard SAP software as shown in the figure below. Appendix A of the PwC study provides the detailed fit-gap analysis.

PWC Fit-Gap Analysis Summary

Fit-Gap Analysis	**Number of Requirements**	**(% of Total Requirements)**
Requires SAP Software Configuration Only	1,299	79%
Requires An Interface To Another System	113	7%
Requires A 3rd Party Product(s)	32	2%
Requires Reporting / Form Development	135	8%
Requires Custom Enhancement To The SAP Software (Development)	62	4%
TOTAL	**1,641**	**100%**

(1) A key finding of the PwC requirements analysis is that it is necessary to refine and/or discard a large number of the existing requirements in order to create a set of requirements that is consistent with the Army's logistics vision and best business practices.

(2) The current requirements are based upon current business practices

and current system capabilities and do not appear to have been created to fit within the Army's vision for its future logistics operations or to reflect best business practices. In particular, the requirements for Split-Based, Task Force and Disconnected Operations will necessitate a significant change to the current mindset and existing business practices to be consistent with the Army's vision for its logistics operations. In addition, many of the current requirements are not necessary in an integrated systems environment. For example, the requirements concerning a "document control register," which is basically a transaction audit trail, are superfluous in a modern integrated software package, such as SAP, because this capability is inherent in the software and available at all times.

c. The TRW study only dealt with maintenance module requirements and the key performance parameters stated in the GCSS-A ORD. Based on a TRW methodology, the company scored the fit of SAP:

Criteria	Weight	x	Score	=	Weighted Score
Functionality - KPPs	.25	x	98.8	=	24.7
Adaptability	.20	x	69.7	=	14.0
Productivity	.15	x	77.7	=	11.7
Usability	.15	x	81.0	=	12.2
Flexibility/Scaleability	.15	x	75.0	=	11.3
Maintainability	.10	x	77.0	=	7.7
				Total	81.6

The final score of 81.6 exceeded the threshold score of 70 by 11.4 units. No single sub-criteria category scored less than 50%; therefore the score of 81.6 represents the SAP product score for this evaluation. See Exhibit XIV for a detailed explanation of how criteria was scored. The detailed results of their requirements analysis is contained in Appendix C of their study.

10. COMBAT DEVELOPER DISCUSSION OF POTENTIAL TACTICAL ARMY IMPACTS WITH IMPLEMENTATION OF A COMMERCIAL ERP.

a. It is believed by most participants to this analysis, i.e. combat developers and associated contractors, that the implementation of the new processes, accompanying a COTS solution, would have significant impact on our DTLOMS. However, it is not really possible to do a meaningful DTLOMS assessment of implementing a commercial ERP in the Army. We simply do not have enough information. Proponents of commercial ERP systems state that the Army will benefit from "new processes" and "best business practices." However, these new processes and practices are not specified. Therefore, it is impossible to actually judge the impact of the commercial ERP implementation in the DTLOMS arena or determine if it would really work well in the tactical Army. See Exhibits VI to XIII and XIX to XXI for combat developer comments

on the significant impacts that would accompany an implementation of a commercial ERP.

b. There is concern that the Army would not be able to respond effectively to requirements submitted from the field. It is likely that Army requested changes to the SAP product baseline would be met with a restrictive process that limits change due to the large commercial customer base that would be impacted.

11. RISK.

a. There is a moderate level of uncertainty in the data presented in this analysis as it is based on studies that were not focused on the evaluation of alternatives.

b. The CSC study highlighted risks in implementing a GCSS-A National Level Enterprise Database. The risks were in the areas of the pace of change, cost and scheduling of communications infrastructure, security, and potential degradation of C2 communications. CSC highlighted various DTLOMS risks with a COTS (SAP-based) ERP implementation (Exhibit XVIII).

c. PwC identified several potential risks (See Exhibit XVII) to a GCSS-A/T SAP implementation. They highlighted major challenges in the areas of project sponsorship, project oversight and organizational change. PWC states that to implement a COTS ERP solution, such as that provided by the product SAP, the Army must be committed to fundamental and broad-ranging changes. The Army must:

- Name an active, Army-wide project sponsor/champion, probably at the CIO level.
- Commit to high performing, streamlined project oversight.
- Base the Business Process Reengineering (BPR) efforts upon system enabled best business practices and standardize business processes.
- Support change to new business processes, including changing Army doctrine.
- Commit to integrated horizontal and vertical information flow, thereby empowering users and creating a single version of the "truth".
- Implement the Telecommunications solution to support the system.

d. The TRW study identified several potential risk areas including tactical communications, flexibility/growth, and version upgrades. However, none of these areas were high enough in risk to the point that the product is not recommended. They observed that the GCSS-A/T acquisition model is not suited for SAP implementation. The current implementation of GCSS-A/T is a module at a time with select interfaces to other modules left as an interface to be determined in the future. The SAP solution provides functionality across many of the GCSS-A/T modules, not just the Maintenance Module functionality. It is not cost efficient to build a Maintenance Module SAP system

that interfaces to other legacy modules or development modules and then later integrate the legacy/development module functionality back into the SAP system. (See Exhibit XIV)

e. CASCOM, AMC, and PMO GCSS-A/T subjective comments on the inherent institutional risk in moving to new best business practices is recorded in Exhibits XIX to XXV. They point out the impacts to the institution would be significant with adoption of commercial practices, however with the full cooperation of the Army's logistics leadership the impacts would be manageable.

f. Custom development might only gain the Army limited technological benefits. It is known that SAP with its wide customer base will continuously upgrade its products to stay ahead of its competition. SAP states almost three million dollars a day goes into the development of their products. Under a custom development effort, the Army will have to pay for any inclusion of new technologies. The WLMP will have SAP products for evaluation starting in July 2002 if leadership wants to have their products evaluated prior to a decision on redirecting the development path for GCSS-A/T.

g. It is possible that an implemented COTS ERP would not achieve the intended cost effectiveness if software applications have to be created and maintained to address unique military requirements. The current custom effort is building web-based enterprise software to the Army's specification. The development process is defining new business processes and will achieve most of the enterprise goals the Army has stated and all that are specified in the current requirements. Exhibit XV lists various advantages of custom development.

h. The United States Army Aviation Center and Fort Rucker have stated in a memo dated 19 March 2002, that SAP, as demonstrated in a commercial aviation maintenance operation, exhibited several functionality gaps compared to Army aviation requirements. (Exhibit XXVII) However, based on personal observation, the Chief of Ordnance has the opinion that SAP meets most of aviation's maintenance needs out of the box and would require few bolt-on applications. (Exhibit X)

i. The charts at Exhibit IV display abstracted tactical layouts (a pseudo systems architecture) for the two alternatives. The differences in the supporting computing and communications architectures of the alternatives are as follow:

(1) Custom Development. The custom development approach supports a standalone mode capable of operating with no, little, or full communication connectivity. As part of the standalone operation architecture, a brigade-level server requiring a system administrator will most likely be required. The "freshness" of data in the national integrated database is directly related to the communications support available.

(2) COTS/ERP - The COTS ERP (SAP based) software architecture requires communications for full-time Internet web browsing at the tactical brigade, battalion, and separate company level. It has no standalone capability and therefore requires this communications link for functionality above the section/team level. At the section/team level, it uses "mobile engine" technology to support limited function disconnected operation. For example, Combat Repair Teams using mobile engines would most likely be limited to opening work orders, closing work orders, requesting

parts, and entering man-hours. The fast communications capability is proposed to be the CAISI-E package supplemented with a satellite dish uplink and assumes that no additional personnel are required to set-up or manage this equipment.

(a) The deployment/split-based configuration ("mySAPTM in a box") promoted in the CSC study (Exhibit XVIII) is not recommended by PMO GCSS-A/T and PwC (Exhibit IV) due to the Army's large server population.

(b) The Mobile Engine architecture provides a capability for mobile applications -- *Automated Identification Technology (AIT), Integrated Electronic Training Manual (IETM), SPORT system, Personal Digital Assistants (PDAs)* -- to access the data and business rules stored in an SAP R/3 system and thereby allow for a mobile "front end" to SAP. (Exhibit IV)

j. Overall Risk:

	CUSTOM DEVELOPMENT	**ERP (SAP PRODUCTS)**
RISK OF TURBULENCE	**Medium (Incremental Impact)**	**High (Sudden Impact)**
Doctrine	**Medium**	**Medium** (Comms Network)
Training	**Medium**	**High** (Army-wide Training)
Leader Development	**Medium**	**Medium** (Training; Institutional Spt)
Organizational Design	**Medium**	**Medium** (Comms Network)
Materiel	**Medium**	**High** (Increased Comms Equipment; Restrictive Change Process; Licensing Costs; Unique CSS Requirements - battle planning, chaplain, legal, mortuary affairs, etc; changes to COTS software affects interfaces)
Soldiers	**Medium**	**Medium**
RISK OF FAILURE	**Medium** (Developer - Under performing software) / **High** (User - Late Delivery)	**Medium** (User - Does not fulfill tactical expectations) / **Medium** (Developer - Core solution set mandated)
Demonstrable Benefit	**No** - Not Fielded	**Yes** - Integrated Applications
Best Delivery Schedule	**Better** - SPR, MNT, MGMT	**Better** - SSA, AMMO, IMM
Schedule Impacts	**Delays** - SSA, AMMO, IMM	**Delays** - SPR, MNT, MGMT
Change Management/Impact	**Flexible** - Government Control	**Rigid** - Commercial Control
Increased Functionality	**Limited** - Directly tied to Investment	**More** - Integrated Applications
Cost Effectiveness	**Directly Tied to Govt Dollars**	**More Functionality Per Dollar**
Return on Investment	**Directly Tied to Govt Dollars**	**Benefit From Corporate Investment**
Sustainability	**Greater Difficulty** - Custom Code	**Less Difficulty** - Corporate Funded
Cost Estimate	**$842M (6 years)**	**$818M (6 years)**
Scalability	**More** - Sized per Govt Request	**Less** - Tied to Product Standards
Flexibility	**More** - Standards Flexible	**Less** - Standards Established
Communications Requirements	**Scoped to Army Inventory of Comms Equip** -- Variable Configurations; See paragraph 15e	**Increased** - Full Time Comms; see paragraph 11i(2)
Growth Potential (Military)	**Greater** - Not constrained by the	**Less** - COTS Product Limits (core

	market; features added per Govt direction	ERP follows the commercial market)
Force Structure Impacts	**More Servers; More Comms Equip Needed** (phased in) - see paragraph 15i(1); **More Administrators**	**More Comms Equip Mandated -** Immediately required as information system fielded; see paragraph 11i(2)

Notes:

- Low: Institutional change will be addressed in a routine fashion by staff as required DTLOMS changes are identified. As is the common practice, users in the field will be notified of changes and provided necessary training with the fielding of the system.
- Medium: The processing of required DTLOMS actions will be a significant burden on current staff. To integrate the new system and improve user operations, significant resources will have to be devoted to the procurement of supporting communications equipment and personnel training.
- High: Needed DTLOMS changes will be so signification that Army leadership at the highest levels will have to sponsor the effort to change CSS processes and adopt the new system. The Generating Force staff will have to organize to identify required changes and direct implementation. Large numbers of supporting communication equipment will have to be procured for the Force. Army-wide training will have to take place throughout system development in order to prepare the workforce for the changeover of systems and ensure improved productivity.

12. COST. The costs reflected for ERP implementation in this report are incomplete. Due to the short suspense for this AoA, it was not possible to complete the entire evaluation. Several cost drivers are still under investigation, but it is clear that total implementation costs will be within the current GCSS-A/T budget line. See Exhibit III for funding category and fiscal year breakout of costs.

a. The present custom development contractual effort is projected to cost $842,359,000 over 6 years. This was calculated by subtracting overhead and operating costs from the overall budget and assumes that the remainder of the budget is the actual cost to build the system and that the system is completed on schedule. It is based on a fielding of 62, 242 + 450 BDE level servers for a total of ~62,692 systems.

b. The commercial SAP implementation is projected to cost $818,227,000 over 6 years and is based on a fielding of 62,242 systems. Assumptions were made about numbers of satellite dishes, costs for airtime, and number of licenses.

(1) Major Funding Assumptions:

- SAP licenses for users were reduced by 20% to reflect Reserve and National Guard users that reflect inactive mission.

- Number of users for Army STAMIS systems are not documented. For this reason, expert judgment was used.

- Airtime costs assumed that only 40% of dishes were deployed at a time for active duty units and 20% of the time for Reserve and National Guard units.

- Finally, we assumed that development of the mobile engine software, an emerging technology, is part of the technical solution.

(2) Major Cost Areas Still Under Investigation:

- Satellite communications has not yet matured to the point where there is ubiquitous, global coverage from single providers. There is risk that Army units might have to rely on multiple providers with potentially different types of proprietary equipment. It is obvious that Army units might have to buy hardware, software, or service to bridge the gaps. For this reason investigation of this area continues.

- The PricewaterhouseCoopers study cited air-time service from Tachyon corporation which cannot provide global coverage. Investigation continues into airtime rates for coverage for the following areas: Middle East, North Korea, Central Asia, Philippines, South West Asia.

- Functionality gaps inherent to adopting a COTS product may require development of standalone applications or interfaces with 3rd party applications (e.g., Advanced Maintenance Aid Concept - AMAC). Investigation into costs associated with these types of efforts based upon a 5% unmatched capability rate continue.

13. SCHEDULES. The custom development schedule remains unchanged. Availability for test dates, rather than milestones, are provided below to facilitate an "apples to apples" comparison. For the COTS ERP development, the use of the SAP product was assumed.

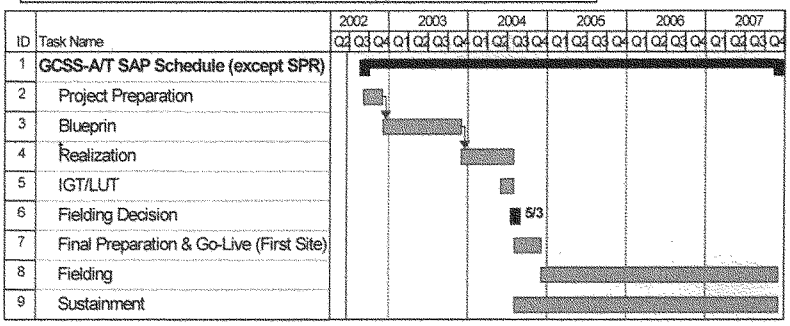
MODULE	LEGACY FUNCTION REPLACED	Custom		ERP (Note 2)	
		QTR	YEAR	QTR	YEAR
SPR	SPBS-R	**2**	**02**	N/A	N/A
SPR	ULLS-S4	**4**	**02**	3	04
MNT	ULLS-A	**2**	**03**	3	04
MNT	ULLS-G	**3**	**04**	**3**	**04**
MNT	SAMS-1	**3**	**04**	**3**	**04**
MNT	SAMS-I/TDA	**3**	**04**	**3**	**04**
MGMT	ILAP	**4**	**03**	3	04
MGMT	SAMS-2	**4**	**03**	3	04
MGMT	SARSS-2AD (Queries)	**4**	**03**	3	04
MGMT	SARSS-AC (Queries)	**4**	**03**	3	04
MGMT	SARSS-GW (Queries)	**4**	**03**	3	04
SSA	SARSS-1	1	05	**3**	**04**
SSA	SARSS-2AD (MGMT)	1	05	**3**	**04**
AMMO	SAAS-MOD ATP/DAO	1	05	**3**	**04**
IMM	SARSS-2AD (Queries)	2	05	**3**	**04**
IMM	SARSS-2AC/B (Queries)	2	05	**3**	**04**
IMM	SARSS-GW (Queries)	2	05	**3**	**04**
IMM	SAAS-MMC ASP (Queries)	2	05	**3**	**04**
NOTES:	1. Bold text indicates earliest fielding option for each alternative.				
	2. Does not include a solicitation period for ERP vendor				
	Assumes Blueprinting phase would begin in September 2002.				

a. For COTS ERP, the implementation schedule (see next page) was revised to accommodate the additional effort involved in developing the SAP Mobile Engine application and fielding to the increased user base. Project preparation would begin in June and require *some* people to initiate work. All project team members would be required on-site NLT August 1, 2002. Actual blueprinting would not begin until September 2002. There is concern that an open solicitation and competition for an ERP product could be lengthy and add time to the schedule. Additionally, other schedule impacts might appear as PwC Consulting is preparing an addendum to their initial Rough Order of Magnitude study that will address:

(1) Increased functional scope to cover all GCSS-A/T modules (except SPR)

(2) Development of a limited "disconnected" operation capability for Combat Repair Teams and Maintenance Support Teams using the SAP Mobile Engine

DRAFT Tactical SAP Implementation Schedule



14. METHODOLOGY USED FOR THIS ABBREVIATED AOA.

a. Due to the short suspense, there was not enough time to plan and conduct modeling & simulation or testing to gather data. This analysis is based on data from preceding studies and assumes the results of those works were valid. Ideally, an effort should have been undertaken to identify which business processes were deficient and what type of required information is not being provided prior to trying to decide on a materiel solution that will lead to improvement. However, the task assigned was to decide the materiel development path of the GCSS-A/T.

b. The hierarchy for the evaluation was based on objectives in the areas of cost, performance, and schedule. A straight comparison of cost and schedule impacts was made based on normalized milestones.

c. Performance objectives had to be identified that were mutually exclusive and collectively exhaustive to provide distinctions between the alternatives. Further, the number of performance objectives was reduced to those of greatest importance. It was assumed, as stated in paragraph 7, that some military requirements could be fulfilled under both alternatives. The performance objectives are stated as end results not means to the ends. Performance was rated on the capability of each alternative to achieve objectives that the warfighter would find measures of success. Each member of a subject matter expert (SME) group subjectively rated the capability of each alternative to meet each objective. Additionally, each SME was asked to rank the objectives from most important (1) to least important (15). By averaging the ranking of criteria the weight of each criteria (objective) was determined. The scoring system used was:

- Exceeds the warfighter requirement - Points 3
- Satisfactory fulfillment of the warfighter requirement - Points 2

- Fails to meet the warfighter requirement - Points 1

(1) The subject matter experts (SMEs) or focus group for the performance evaluation had three main qualifications:

- The group had a knowledge of the strengths and weaknesses of the legacy STAMIS systems;
- The group had a understanding of what the vision/goals are for Combat Service Support (CSS) automated information systems and what we expect to gain from a new system; and
- The group understood what an Enterprise Resource Planning (ERP) system is and had enough background to be able to evaluate between alternatives.

(2) See Exhibits XIX to XXV for individual SME performance ratings and ranking of objectives. A summary of their evaluations is below in paragraph 15k.

d. The comments and data developed during this analysis, late February 2002 to 20 March 2002, was consolidated and submitted to voting members of the GCSS-A Integration Team (GAIT) for their review. Discussion by the GAIT members took place during their video teleconference on 25 March 2003 and votes were submitted to CASCOM to be recorded in this document. This document was revised to record the votes of GAIT members and their comments for submission to the GCSS-Army General Officer Working Group (GOWG) to request their decision on the development path of GCSS-A/T. A summary of the GAIT voting is at paragraph 15n and their individual submissions are contained in Exhibits XXXI - XXXXIV.

15. CONCLUSIONS.

a. For the supply and maintenance applications under study, there is nothing in the functional benefits under a SAP software solution that is not part of our current GCSS-A/T vision. If we go 100 percent custom development and do it right and to the vision of the ORD, we will have an enterprise solution with the virtues of the SAP system. Many feel if we move now to a COTS SAP solution that our development effort would be shortened and made easier. SAP structures would provide the integrated applications to bring about the multifunctional reconciliation of records, facilitate work on systems interfaces, and improve enforcement of configuration management. The material development community is of the view that a change to an ERP should be addressed as a new requirement and be validated by the combat developer. The Combat Developer does not validate there is a requirement for the purchase of a COTS ERP product but "stands behind" the validated requirements specified in the system ORD.

(1) Many experts believe that the PM GCSS-A/T should continue to develop modules for maintenance (MNT), supply and property (SPR) and management (MGT) however he chooses. WLMP (SAP) applications should be used at the Installation level, in accord with Single Stock Fund (SSF) efforts, with an objective for

the eventual adoption of those applications at the tactical Supply Support Activities (SSAs). It makes sense for the Army to have the same information technology (IT) solution managing wholesale stocks at all storage locations.

Note: The PM GCSS-A/T has stated that there is little economic advantage to his program with an extension of WLMP applications to the installation. He might find small savings (Approximately $400K) in the personnel resources (3 technicians & 1 functional tech) devoted to maintain the Standard Army Maintenance System-Installation/Table of Distribution (SAMS-I/TDA). (Exhibit II)

(2) The Supply and Property (SPR) module is nearly done and a large leap forward over the Unit Level Logistics System-S4 (ULLS-S4) and the Standard Property Book System-Redesign (SPBS-R). If we decide later to retrofit it into a SAP architecture, we would just design the new version behind the scenes. The training impact should be minor because it is web based. The user might need a new download update and their screen might look a little different but that can be about it if we do it right.

(3) We have not progressed so far with Maintenance Module that we could not change over to a SAP product for software development. However, this should be a Program Management Office (PMO) decision that is based on providing the required functionality on schedule and within budget. Given a custom development solution, if we later decide on an all SAP architecture, we can retrofit behind the scenes as with SPR. Much of the Joint Application Development (JAD) and Business Process Reengineering (BPR) work is reusable in blueprinting SAP.

(4) Incremental development to assuage fears about effectiveness at the tactical level is reasonable and provides the mechanism to wrestle with some thorny issues, such as the role of Corps/Theater ADP Service Center (CTASC), how and when to get rid of the SSF middleware (See Exhibit XXVIII), and Consumable Supply Chain Management (CSCM) initiatives to transfer Non-Army Managed Items (NAMI) on Army Authorized Stockage lists to DLA. It is assumed that some of the unfunded bill to implement SSF Milestone III -- *capitalization of all O&M stock (secondary items) above the Prescribed Load List (PLL) and shop stock level and provide visibility to the National manager* -- would evaporate with WLMP (SAP) applications at the Standard Army Retail Supply System (SARSS) locations, which is a very good reason to go to the SSAs first rather than beginning a WLMP (SAP) effort at user levels like MNT and SPR.

(5) Many have the view that AMC and PM Single Stock Fund (SSF) should assume the mission of working with the Defense Logistics Agency (DLA) on interfacing of the Army with Defense in execution of the National Inventory Management Strategy (PBD 422). It can be presumed that it will take a while to extend WLMP applications to all installations, and even longer to get to the tactical SSAs. When WLMP applications or processes have been extended to the SSAs, we can then revisit lower echelons to determine if we want to go all SAP or not.

b. The combat developer team would like the Army to have an integrated ERP capability if its use would have no negative impact on our tactical doctrine. It appears that a commercial ERP implementation in the GCSS-A/T is not a serious risk to future tactical Army operations as the current STAMIS systems will be kept operational until replaced. At this time, the combat developer team has not identified all of the costs to the tactical Army inherent in a move to new commercial logistics and business processes. However, both development alternatives would have to incorporate new processes over the next six years in order to field the Objective Force. Under both alternatives, costs to the institution should be similar, though under the commercial solution the major impacts will be upon the Army sooner. The three studies focused on discussions of a COTS ERP as it relates to fielding GCSS-A/T. Though DTLOMS impacts were mentioned in the studies, no disciplined analysis was conducted to determine the specific impacts, time needed to "re-tool", or costs external to system materiel development to implement changes. Army leadership must know, prior to approving a move to commercial business processes that all our logistics operations will be impacted and there will be a significant institutional integration and re-training period. An example of how a SAP ERP might change processes is given in Exhibit XVI.

c. Implementation of COTS-based ERP functionality in GCSS-A/T would require the full support of AMC, TRADOC, and FORSCOM to blueprint or redesign how the Army conducts retail logistics operations. One of the major drivers of GCSS-A/T redesign and the speed of its development would be the speed at which the Army decides on how ERP should operate.

d. Present custom development work to meet GCSS-A ORD requirements is on schedule. The system is developing to support and improve our present logistics processes. The continuation of this development effort would have the least disruption on the operations of the rest of the Army. As application modules are delivered to units in the field the ability of personnel to perform their jobs and the Army to manage its resources would be improved.

e. The present communications infrastructure on the battlefield for combat service support (CSS) operations must be "beefed-up" for GCSS-A/T to meet requirements specified in its ORD, no matter the software solution implemented. The number of networked CSS users will have to more than double to meet the requirements of the Objective Force. On 13 March 2001, the Modeling and Simulations (M&S) Branch at Fort Gordon stated the CSS aggregate reach-back bandwidth requirement out of a Division with a Thin Client, Two Tier architecture, is 12 Mbps. In association, the M&S Branch stated the CSS aggregate reach-back bandwidth requirement for a Division with a Thick Client, Two Tier architecture, is 300Kbps. Without improvements in the communications infrastructure, the GCSS-A/T is forced to provide a software solution that allows limited bandwidth operability over combat net radio and the storing of data for later (non-real time) transmission. The difference between the two software alternatives is the speed at which communications equipment will have to enter the inventory. The COTS ERP (SAP) alternative requires full communications to provide

any operability but the custom alternative can be structured to provide limited operability with less than full communications connectivity. (Exhibit IV)

f. The value of proceeding with a COTS ERP (SAP-based) pilot at the installation level is seen as being a prudent step in the evaluation of commercial practices for use throughout the Army. Processes could be mapped from the installation to tactical units. This would give us a good look to see what the real issues are and going to the installation makes sense under the Single Stock Fund (SSF). Additionally, the availability of WLMP products for evaluation starting in July offers the opportunity to mitigate risk with physical evaluation prior to a decision on moving forward with a COTS solution.

g. COTS ERP (SAP-based) Pros:

- Provides an integrated system that can meet the Army's Logistics Vision (Asset Visibility, Supply Chain, Velocity Management, Material Readiness); Provides a single version of the "truth" (horizontal and vertical)
- Fundamental Change -- Better business strategy based on streamlined business processes and proven best practices; Wipes out non-standard logistics systems
- A single point of access via Web browser to applications, business content, and services
- A personalized, role-based user interface that can be customized to meet individual needs
- Convenient, seamless integration of different systems; can be easily extended to include other functional modules (e.g. Financial, Activity Based Costing, etc.)
- "System Enabled" Business Process Reengineering (BPR)
- Vendor updates system functionality and incorporates new technologies (e.g. wireless); Continuous improvement of product and business processes to stay competitive

h. COTS ERP (SAP-based) Cons: (Exhibit XXIX)

- SAP must be an Army Corporate Priority as it requires an integrated, "enterprise" approach; there can not be a halfway commitment
- Ideal implementation requires organization to adopt new processes; Change Management is considerable
- Requires a high-level project sponsor
- Requires a new Project Oversight structure
- Requires rapid decision making
- Adequate Telecommunications Bandwidth is key to the solution; communications equipment must be fielded with the GCSS-A/T; no local operations are possible without long haul communications to the enterprise database

- Implementation methodology needs to be dove-tailed with DoD acquisition process (DoDI 5000.2) and Army Testing & Acceptance processes
- In 1999, Meta Group stated in its evaluation of 63 businesses with ERP systems that most failed to achieve expectations. Common problems were a lack of acceptance of new procedures, loss of productivity, and the system did not match the business. It was found that poor education of the broad user community of managers and employees was the main reason for failure to achieve expectations. Other contributors to poor results:
    - Inadequate sponsorship
    - Poor/slow decision making
    - Poor/ no scope definition
    - Lack of cooperation between business areas/department
    - Poor use of consultants
    - Inappropriate resources
    - Unrealistic expectations

i. Custom Development Pros: (See Exhibit XV)

- Minor Organizational Impact
- Change Management is relatively minimal - e.g. New System Training
- System is 100% tailored to the Army's processes
- Gradual transition to new improved business practices
- With funding, no gaps in meeting military requirements
- Continued operations in the Army's anticipated near-term communications environment
- No need for realignment of budget
- Less impact on systems interfaces
- Present Program Management Office is staffed for custom development
- Extensive Blueprinting period not required
- Software Requirements Specification in place for coding
- Do not have to worry about SAP unknowns
- Acquisition strategy is in place
- User has good representation in the development process
- The Government will own the system
- System can support local (split based) operations when long-haul communications are down; system can be configured to operate with less than full-time communications connectivity to enterprise database; given less than optimal responsiveness, communications equipment can be phased in at the prerogative of Army leadership

j. Custom Development Cons:

- Today, does not meet the Army's logistics vision
- Functionality based on current requirements and practices

- Need to test the complete system
- "Clean Sheet" BPR doesn't leverage industry best practices
- Army maintains system and must incorporate new functionality and technologies
- Not the Army's core competency (not in business to develop software)
- Tendency to Automate existing Business Practices
- Historically not successful in meeting the schedule / budget / goals
- Requires similar upgrading (as ERP) of Telecomm infrastructure to be successful
- Why spend money developing a product when one is available?

k. The strictly subjective evaluation of basically tactical performance objectives, by seven subject matter experts (SMEs) selected from CASCOM, AMC, and PMO GCSS-A/T, rated the advantage each alternative would have over the other in providing a product to meet the warfighter requirements (See Exhibits XIX to XXV). Listed in descending order, starting with the objective ranked most important (based on an average of SME rankings), the alternative assumed would best fulfill each performance objective is stated:

- Improved Weapons Platform Availability - Custom Development
- Improved Logistic System Responsiveness - COTS ERP (SAP)
- Variable System Configurations - Custom Development
- Improved System Interoperability - COTS ERP (SAP)
- Improved Logistics Situation Awareness - Custom Development
- Improved Logistics Planning - COTS ERP (SAP)
- Improved Communications Flexibility - Custom Development
- Improved Logistics Soldier Productivity - Custom Development
- Reduced Theater Footprint - Custom Development
- Improved Staff Coordination - Custom Development
- Improved System Deployability and Mobility - Custom Development
- Reduced Mean Time to Repair - COTS ERP (SAP)
- More Efficient Operations - Custom Development
- Easier To Use - Custom Development
- Reduced Administrative Burden - Tie

l. CASCOM Staff Vote on Alternatives:

	FOR COTS ERP (SAP)	FOR CUSTOM DEVELOPMENT
DCD Transportation	Yes (Exhibit VI)	
DCD Ordnance	Yes (Exhibit X)	
DCD Quartermaster	Abstained (Exhibit XI)	Abstained
DCD CSS	Yes (Exhibit V)	
Info Sys Directorate		Yes (Exhibit VIII)
OTSM CSSCS	Yes (Exhibit XIII)	
Soldier Support LNO	Abstained (Exhibit IX)	Abstained

Training Directorate	Abstained (Exhibit XII)	Abstained
CSS Battle Lab	Abstained (Exhibit VII)	Abstained

m. Army Aviation Center Vote on Alternatives: For Custom Development (Exhibit XXVII)

n. GAIT Votes:

	GCSS-A/T DEVELOPMENT ALTERNATIVE	INSTALLATION ERP PILOT	WLMP EXTENSION INSTALLATION - TACTICAL SSA	EXHIBIT
	VOTE 1	VOTE 2	VOTE 3	
AMC	Custom Development (SPR, Maint, Mngt; not SAMS I/TDA)	YES	YES (Both & Tactical Ammo)	XXXXI
TRADOC	Custom Development	NO	YES (Installation)	XXXXII
CASCOM	Custom Development	YES	YES (Installation)	XXXX
ARMY G-4	COTS ERP	YES (as part of implementation)	YES (Both)	XXXVI
USACE				
USACIDC				
FORSCOM	COTS ERP (MUST HAVE - phased approach; assured comms; remote ops; no schedule slip; associated costs programmed; impacts defined upfront; senior leader buy-in)	YES	YES (Installation - lowest level)	XXXVIII
MEDCOM	COTS ERP (upfront interface funding; comms infrastructure funded)	NO	YES (Both; funding interfaces to DMLSS & TMIP-Army)	XXXIX
INSCOM	Abstained	Abstained	Abstained	XXXXV
MDW	COTS ERP (phased approach; SPR - Custom; who pays for sustainment?)	YES (leverage AMC/WLMP experience)	NO	XXXXIV
USASOC	COTS ERP	NO	YES (Installation if blueprinting recommends)	XXXV
USAREUR	COTS ERP (with Comms)	NO	YES (Installation if blueprinting recommends)	XXXI
EUSA	COTS ERP (SPR - custom)	YES (prototype - system of record)	NO	XXXVII
USARPAC	COTS ERP (system should not drive doctrine)	NO	NO	XXXIII
USARSO	COTS ERP	YES (unless WLMP extended)	YES (Installation)	XXXIV
OCAR (USARC)	Custom Development (Tactical)	YES (Commodity installations only)	YES (Commodity Installations only)	XXXXIII
ARNG	COTS ERP (if sameness for installation & warfighter)	YES	YES (Both)	XXXII
MTMC				

Legend:

(1) Vote 1 -- Which GCSS-A/T development alternative, COTS ERP or Custom Development, seems best able to meet your organization's mission requirements?

(2) Vote 2 -- Whether the Army should fund and execute an ERP pilot program at the Installation level? This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.
(3) Vote 3 -- Whether WLMP should extend its processes to Installations or Tactical SSAs? This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical Supply Support Activity (SSA) and Direct Support maintenance to follow the AMC mission thread under SSA and NMM.

16. RECOMMENDATION.

a. It is recommended that the GCSS-A/T continue with its present custom development strategy and an ERP pilot program be executed at the Installation level. This recommendation is in agreement with the WLMP CBOD decision given at their meeting on 28 March 2001.

b. It is not prudent to change from the present custom development path based on the limited information available. The Army needs a system that supports doctrine and accomplishes the requirements specified by the Combat Developer in the GCSS-A Operational Requirements Document (ORD). It is not clear from available evidence that a commercial ERP meets tactical Army requirements, particularly those related to operations in austere communications environments.

c. The Combat Developer understands that GCSS-Army software should have the three key properties of an ERP application: multifunctional activity tracking, integrated data updating, and modular adaptability. (Exhibit XXIX) Execution of an ERP pilot at the Installation level is seen as a risk mitigating step on the path to identifying if a commercial ERP application can be utilized for GCSS-A/T development without significant negative impacts to DTLOMS. As a part of the pilot, business processes would be evaluated and the best practices selected for conducting the Army's business. The pilot would allow the Army to determine the impacts on DTLOMS and give us more data to evaluate how well an ERP would work in the tactical environment. Additionally, the pilot would provide a test bed for working interoperability between the ERP and numerous other systems. Given present operational requirements, the Materiel Developer should decide if the use of a commercial software product, such as an off-the-shelf ERP application, helps him meet the Army's operational requirements and will improve the data handling of his system.

d. Though the majority of GCSS-Army Integration Team (GAIT) members voted to utilize a commercial Enterprise Resource Planning (ERP) product for GCSS-A/T development, they tied many stipulations to their pro ERP vote. Often they cited the very reasons we recommended continuation of our current development effort. The following is a list of commands that voted for use of a commercial ERP for GCSS-A/T development and a summary of their stipulations:

(1) USAREUR - Necessary satellite air-time and adequate world-wide satellite coverage must be part of the plan. (Exhibit XXXI)

(2) ARNG - None. (Exhibit XXXII)

(3) USARPAC - Ensure the system does not drive Army doctrine. The developed system must support limited/unreliable communications, limited bed-down infrastructure, requirements to move perhaps frequently under hostile conditions, split base and task oriented operations, etc. (Exhibit XXXIII)

(4) USARSO - None. (Exhibit XXXIV)

(5) USASOC - None. However, believes that the proposed ERP architecture would ensure that there will be communications at all times. (Exhibit XXXV)

(6) Army G-4 - None. (Exhibit XXXVI)

(7) EUSA - None. (Exhibit XXXVII)

(8) FORSCOM - (Exhibit XXXVIII)

(a) Phased approach to ERP implementation beginning with the installation and extending to the tactical level as success is achieved.

(b) The system must have assured communications and a remote operating capability.

(c) The ERP development must also cause no further slip in delivery over the current fielding schedule.

(d) A blueprinting and development effort, beyond that to be done for WLMP, is required in the tactical and installation environments.

(e) The programming of funding for the costs of interfaces, application "bolt-ons," satellite airtime, etc. is required.

(f) The Army must also make every effort to define and document C/CS/CSS tactical and strategic impacts up front.

(g) We must achieve senior leadership buy in on the COTS ERP-mandated operational and DTLOMS changes.

(9) MEDCOM - (Exhibit XXXIX)

(a) CSS interface development must be supported and funded up-front or risk will be at an unacceptable level.

(b) Communications infrastructure must be supported and funded in concert with development and deployment of the ERP.

(10) MDW - (Exhibit XXXXIV)

(a) Phased approach to ERP implementation beginning with the installation and extending to the tactical level as success is achieved.

(b) Custom work on the Supply Property and Management modules should continue.

(c) Need to know which organizations pays the sustainment bill.

e. The following commands voted for the present Custom Development plan and gave the following reasons for their vote:

(1) USARC (OCAR) - (Exhibit XXXXIII)

(a) The SAP product being discussed as the ERP application is a very demanding and rigid program that is not prone to conformability without extensive software changes that require the SAP community approval via an international configuration control board.

(b) The use of "bolt-on" applications with the SAP product is very expensive and can involve extensive interface development.

(c) SAP is very dependent on user training.

(d) The Army's communication system is too immature to support SAP requirements. USAR users (Drilling Reservist, Army Guard & Reserves, Civilian Unit Technicians and Individual Mobilization Augmentees) are spread far and wide in small and large towns across the United States. In addition to eleven Regional Support Commands (RSCs) in CONUS, there are two RSCs OCONUS.

(e) The implementation of ERP may not accommodate the budget processes of the USAR (OMAR and RPA) and the cost associated with sustainment of the ERP solution.

(f) The ERP solution may not be able to accommodate congressional requirements on how the USAR must account for its equipment inventories.

(2) CASCOM - (Exhibit XXXX)

(a) Too many unknown DTLOMS impacts and the real-time communications infrastructure proposed to support the commercial solution needs much evaluation. To this point, the Army has required information systems to have the ability for local operations when long-haul communications are not available to the rear.

(b) Once the ERP is successful at AMC and an Army installation, review the progress and determine the tactical Army applicability based on the results.

(3) AMC - (Exhibit XXXXI)

(a) Not enough data in the AoA to justify abruptly changing the Army's Logistics Automation modernization strategy.

(b) AMC does not feel an ERP solution can be implemented at the tactical level within the schedule and cost projected by the PricewaterhouseCoopers (PwC) study.

(c) We have a lengthy list of risks and no specifically identified return on investment.

(d) The GCSS-Army GOWG should make the decision on development alternatives.

(e) Before going to the GCSS-Army GOWG, we should address all of the PwC prerequisite questions and identify the specific returns on investment and advantages we will achieve by assuming this risk. Examples of AMC concerns with a sudden switch in modernization strategy to a tactical ERP include:

-1- What is our change management process going to be, everyone generally supports radical change until it affects them. Who will be the final decision authority and how will we frame and present the decisions? Will the ARMY commit to a SENIOR project officer with the authority to make decisions which the CSA/VCSA/G3/G4/G6 will enforce? Will TRADOC accept doctrinal changes and will HQDA support force structure changes when necessary?

-2- Should we expect the ARMY to answer how the blueprinting SME bill (personnel and TDY) will be paid before we commit to this strategy?

-3- Should we get a commitment from the G6/VCSA to fund the requisite satellite equipment and air time?

-4- Should we get a validation from the TRADOC Signal center that the satellite plan will provide the needed coverage?

-5- How are we going to address the project oversight concerns the PWC study and briefing say is absolutely necessary.

-6- How do we get the acquisition authority to move at any where near the speed to achieve the timeline we are on now

-7- Since GCSS-Army is currently an ACAT 1AC program on a list to become an ACAT 1D program are we sure this level of change to the materiel solution will not cause a shift from our current Milestone II decision back to a Milestone A decision point?

-8- Shouldn't we get some level of detail on the business processes being modernized, which business practices would be adopted, which metrics for improvement we will use to judge the benefits, and some idea of the business case we will use to articulate our decision to GAO, AAA, OSD, Congress etc. The business case needs to address what improvements will be made and how they affect our operating costs/effectiveness.

(4) TRADOC - The custom development currently underway is deemed the most appropriate in light of the lack of concrete information on ERPs, their business processes, and their flexibility to execute Army doctrine. (Exhibit XXXXII)

ENCLOSURES:

Exhibit I - Assumptions for the Abbreviated AoA
Exhibit II - Architectural Approaches to Develop GCSS-A/T Services
Exhibit III - Cost Information
Exhibit IV - Architectural Information
Exhibit V - DCD CSS Comments
Exhibit VI - DCD Transportation Comments
Exhibit VII - CSS Battle Lab Comments
Exhibit VIII - ISD Comments
Exhibit IX - Soldier Support Comments
Exhibit X - DCD ORD Comments
Exhibit XI - DCD QM Comments
Exhibit XII - Training Directorate Comments
Exhibit XIII - OTSM CSSCS
Exhibit XIV - TRW Study Summary
Exhibit XV - TRW Comments for this AoA
Exhibit XVI - PwC Comments for this AoA
Exhibit XVII - PWC Study Summary
Exhibit XVIII - CSC Study Summary
Exhibit XIX - CASCOM Subjective Comments on Performance
Exhibit XX - CASCOM Subjective Comments on Performance
Exhibit XXI - CASCOM Subjective Comments on Performance
Exhibit XXII - PMO GCSS-A/T Subjective Comments on Performance
Exhibit XXIII - PMO GCSS-A/T Subjective Comments on Performance
Exhibit XXIV - AMC Subjective Comments on Performance
Exhibit XXV - AMC Subjective Comments on Performance
Exhibit XXVI - Army G-4 Comments
Exhibit XXVII - HQ USA Aviation Center and Fort Rucker Comments
Exhibit XXVIII - Single Stock Fund (SSF) Discussion
Exhibit XXIX - ERP Information
Exhibit XXX - WLMP Information
Exhibit XXXI - U.S. Army Europe Votes and Comments
Exhibit XXXII - National Guard Votes and Comments
Exhibit XXXIII - U.S. Army Pacific Votes and Comments
Exhibit XXXIV - U.S. Army South Votes and Comments
Exhibit XXXV - U.S. Army Special Operations Command Votes and Comments
Exhibit XXXVI - Army G-4 Votes and Comments
Exhibit XXXVII - Eighth U.S. Army Votes and Comments
Exhibit XXXVIII - Forces Command Votes and Comments
Exhibit XXXIX - U.S. Army Medical Command Votes and Comments
Exhibit XXXX - U.S. Army Combined Arms Support Command Votes and Comments
Exhibit XXXXI - U.S. Army Materiel Command Votes and Comments
Exhibit XXXXII - U.S. Army Training and Doctrine Command Votes and Comments
Exhibit XXXXIII - U.S. Army Reserve Votes and Comments
Exhibit XXXXIV - U.S. Army Military District of Washington Votes and Comments
Exhibit XXXXV - U.S. Army Intelligence Command Votes and Comments

EXHIBIT I - ASSUMPTIONS FOR THE ABBREVIATED AOA

a. Both alternatives support the C4 systems objectives stated in Joint Pub 6-0: Produce Unity of Effort; Exploit Force Capabilities; Properly Position Critical Information; and Information Fusion.

b. Both alternatives support the C4 principles stated in Joint Pub 6-0: Warfighters must have C4 systems that are interoperable, flexible, responsive, mobile, disciplined, survivable, and sustainable.

c. Both alternatives can comply with:

- Policies on Joint and Multinational C4 Systems Standardization and Procedures;
- Guidelines in the Joint Technical Architecture (JTA); and
- Specifications of Army architectures: Operational, Systems, and Technical.

d. Both alternatives can develop a Logistic Information System as described in Joint Pub 4-0 that is an end-to-end combat support capability brought about through the integrating of existing information technologies (IT), logistic automated information systems (AIS), and joint decision support and visualization tools.

e. Both alternatives will provide interoperability with:

- Transportation Coordinator's Automated Information for Movement System II (TC-AIMS II)
- Global Combat Support System (GCSS)
    - Joint Total Asset Visibility (JTAV) application
    - Global Transportation Network (GTN) application
    - Joint Decision Support Tools (JDSTs)
- Global Command and Control System (GCCS) Common Operational Picture-Combat Support Enabled (COP-CSE)
- Defense Integrated Military Human Resource System (DIMHRS)
- Theater Medical Information Program (TMIP) - Medical Communications for Combat Casualty Care (MC4) System
- Automatic Identification Technology (AIT)
- Army Battle Command System (ABCS)
    - Combat Service Support Control System (CSSCS)
    - Force XXI Battle Command Brigade and Below (FBCB2) System
- Wholesale Logistics Modernization Program (WLMP) Systems
- Defense Logistics Agency (DLA) Business Systems Modernization (BSM) Applications
- Movement Tracking System (MTS)
- Future Combat System (FCS)
- Joint Tactical Radio System (JTRS)

- Warfighter Information Network - Tactical (WIN-T)
- Mobile Subscriber Equipment (MSE)
- Tri-Service Tactical (TRITAC) Communication Equipment
- Military Satellite
- Near-Term Digital Radio (NTDR)

f. The end state of each alternative will be an enterprise business information system for the Army. It will utilize Web-enabled application software to create a seamless, integrated, Combat Service Support (CSS) information and management system. Information flow will be designed around processes rather than transactions or functions to achieve improved business results for the Army. Application integration will make data available across business functions of the Army in real-time.

EXHIBIT II - ARCHITECTURAL APPROACHES TO DEVELOP GCSS-A/T SERVICES

Approach One - Extend the WLMP "services" down to the Army's installation/"retention boxes" level of supply and maintenance operations and interface with "custom built" (non- Enterprise Resource Planning (ERP)) solution for deployable tactical (to include split operations) applications.

Approach Two - Extend the WLMP "services" down to the Army's installation/"retention boxes" level of supply and maintenance operations and then interfaced with a Tactical ERP solution for deployable tactical (to include split ops) applications that is not an ERP "purchased service" on the WLMP service contract, but may be the same ERP or another acceptable ERP solution under the terms of the GCSS-A Tier I contract.

Approach Three - Adopt the "custom built" GCSS-A Tactical modules and applications to the Army's installation/"retention boxes" level of supply and maintenance operations and interface them with the WLMP "services" that support the installation/"retention boxes" level of supply and maintenance operations as well as the deployable tactical applications.

Approach Four - Adopt the Tactical ERP solution for deployable tactical (to include split ops) applications (not an ERP "purchased service") for the Army's installation/"retention boxes" level of supply and maintenance operations and the Army's deployable tactical operations and interface them with the Army's WLMP service contract.

From: MAJ Thomas P. Flanders, APM, Logistics Automation (GCSS-Army):

The WLMP extension to installation scenario means:

- DOL activities currently using the SAMS-I/TDA and SARSS-1 systems would use WLMP SAP for supply and maintenance.
- At the same time, Army tactical units would use GCSS-A/T SAP or a custom developed product for supply and maintenance.
- DOL's system will perform maintenance and supply in support of tactical operations, but the tactical units will use a different system.
- Equipment belonging to tactical units will cross back and forth between the two systems on a daily basis as a result of normal repair and return to user maintenance operations.

DISCUSSION:

To achieve this scenario, end-item equipment data would need to be transferred between the GCSS and WLMP systems when equipment is evacuated to/from DOL for maintenance. This includes all historical data for each piece of equipment, e.g. – maintenance history, location history, operation history, ECP history, etc.

In practice, an "equipment transfer" could mean "locking" the data in one system and "transferring" data to the other system, or it could mean "deleting" all data from one system after it has been transferred to the other system. Either way, "ground truth" for information on an item of equipment would move between systems as frequently as equipment is evacuated to and from DOLs and units.

This is a non-trivial technical task, involving a large and complex set of transactional data, which adds complexity to the overall systems environment and significantly increases the likelihood of poor data integrity. It also increases the complexity of interface programming, configuring, training, fielding and operating, which impacts the cost, schedule and risk of both the GCSS and WLMP implementations. This is especially true with respect for serial number tracked DLA managed items, as the BSM (DLA) system could require 3rd hand notification of changes.

ANALYSIS:

The truth is that, regardless of whether WLMP extends or not, the technical solution will be complex. **How complex is what needs further analysis . . . NOT just cost.** If WLMP extends to installations, then crossing the line between the two systems for repair and return maintenance is the most significant element of the overall problem. Conversely, if WLMP does not extend, then unserviceable items will have to cross the line between the two systems when moving to & from "Centers Of Excellence." **So the question is, "which is worse?"**

To help answer that question, I recommend an evaluation of the following areas. Some areas are more difficult to evaluate than others, but the system architecture that most efficiently accommodates these areas should be the best solution.

- **Interface Complexity**. Complex interfaces can create data fragmentation, greater demand for network connectivity, and more requirements for bandwidth. Determining which solution can be implemented with the least complex interfaces can't be done without blueprinting on the WLMP & BSM sides and detailed study on the GCSS-A/T side. These actions have not taken place, yet.

- **Percentage of data that flows between systems.** Are all installations "Centers Of Excellence" for something? What percentage of work done by installations is in support of tenant units? What percentage for "Centers Of Excellence?"

- **Mission.** I feel that although controversial, an important question here is that of the mission of installation maintenance and supply activities. Is it more important to provide support to tenant units or to compete for national maintenance program

dollars? SAP consistently recommends changes in business practices to facilitate efficiencies in their product. In keeping with this, should we change the way we do installation maintenance or change the way we provide tenant unit support?

- **Workload to soldiers.** If any "workarounds" requiring additional personnel workload are part of a proposed solution, then the solution that places the burden on the non-tactical side (installation) should be selected. The intent is to make life easier for the soldiers so they can concentrate on tactical roles & missions.

- **Cost.** In terms of real costs savings associated with removing SAMS-ITDA functions from GCSS-Army requirements, there are remarkably few. This is due to the fact that replacing SAMS-1, ULLS-A, and ULLS-G functionality, coupled with incorporation of deferred ECPs (mostly for man-hour accounting and financial functions) means that we still have to create that functionality in GCSS-A/T. For this reason, the cost savings are relatively small.

SUMMARY:

To me, given the frequency of unit equipment movements to and from DOL maintenance activities and the co-location of DOL's with tactical units, the extension of WLMP down to the installation level seems to increase the complexity and decrease the efficiency of the Army's tactical logistics operations. I believe this is sound foundation to recommend a further more detailed study to determine what the truth really is. A quick decision at this point may have dramatic impact on cost, schedule, and performance down the road.

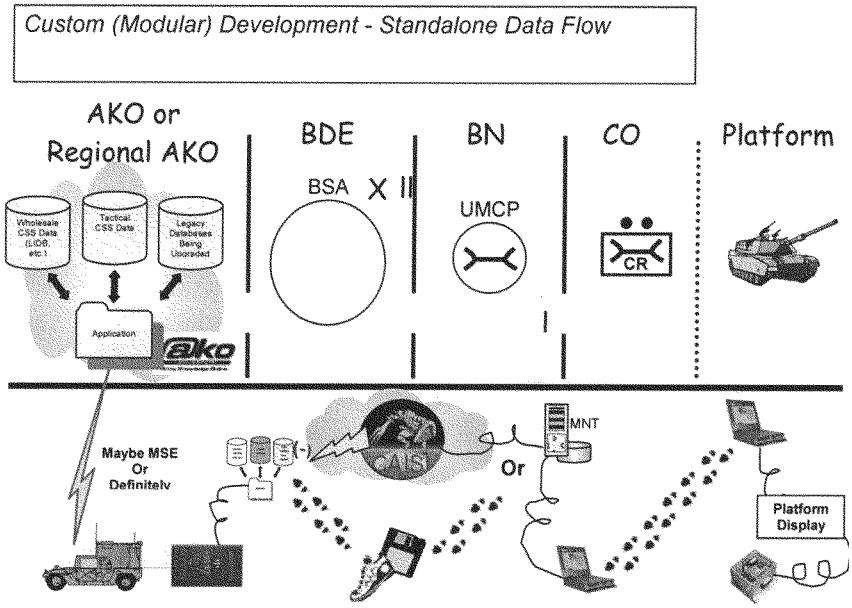
EXHIBIT III - COST INFORMATION

Custom vs ERP Cost Comparison:

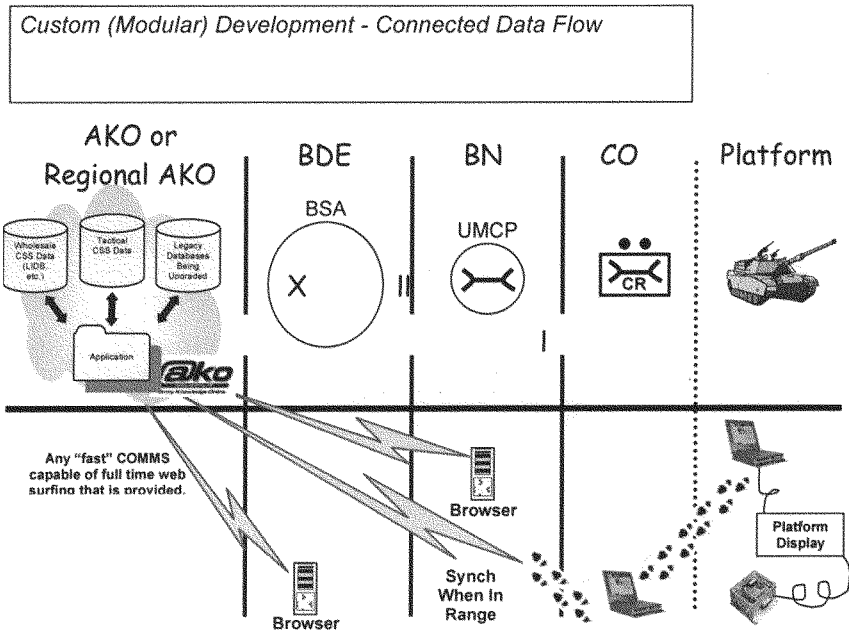
Component (in $000's)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	TOTAL
Custom RDTE	54,405	49,437	57,866	53,065	55,224	53,419			323,416
ERP RDTE [1]	21,047	42,697	26,019	16,149	6,389	6,608			118,909
Custom OPA [2]									
ERP Unique OPA[2]	864	124	124	40,500	49,663	57,723			148,998
Custom OMA	3,163	6,897	4,040	4,071	4,569	4,940			27,680
ERP OMA	29	3,204	3,450	10,573	18,870	22,931			59,057
Custom Solution	57,568	56,334	61,906	57,136	59,793	58,359			351,096
ERP Solution	21,940	46,025	29,593	67,222	74,922	87,262			326,964
Solution Independent Costs	76,308	75,094	75,126	78,872	88,611	97,252			491,263

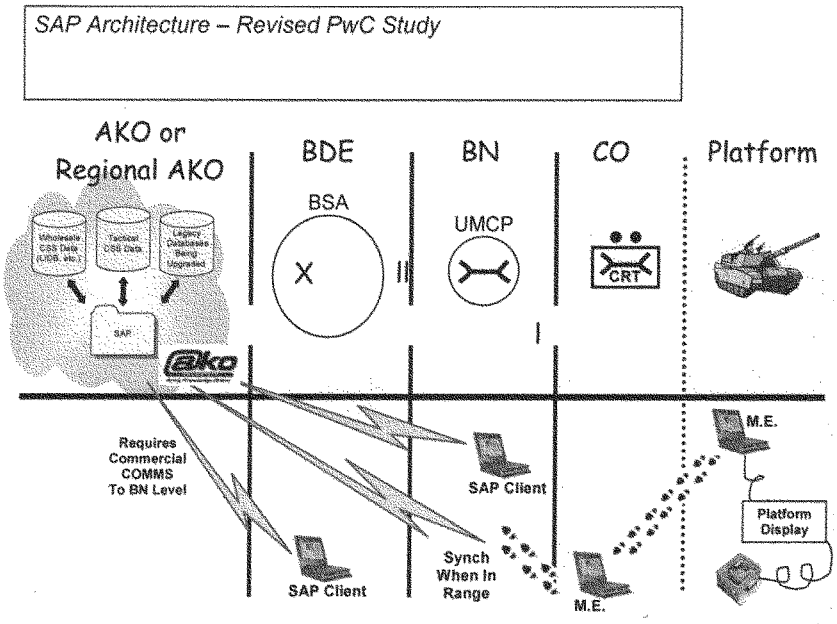
Adjustment Basis
1 Final PWC Study Numbers
2 Hardware and fielding costs comparable and excluded. Licenses and Comms unique to ERP.
3 Development and Fielding completed for both in FY07. Life Cycle costs comparable.

EXHIBIT IV - ARCHITECTURAL INFORMATION



Note:
It has been highlighted that under Custom Development, the GCSS-A/T will field system servers that will necessitate the addition of system administrators to the Modified Tables of Organization (MTOEs) of receiving units. On 29 March 2002, MAJ Flanders, PMO GCSS-A/T, stated the Fort Lee Engineering Office (their AMC matrix engineers) was putting together a response to the query on the system administrator requirement but it will take a few days to complete. Mr. Cary Thacker, CASCOM ISD-MANPRINT, was contacted but he could provide no milestone schedule or plan for determining the GCSS-A/T manpower requirement.


Custom (Modular) Development - Connected Data Flow
AKO or Regional AKO
BDE
BN
CO
Platform
BSA
UMCP
CR
Application
Any "fast" COMMS capable of full time web surfing that is provided.
Browser
Browser
Synch When In Range
Platform Display



Alternative Approach – Distributed SAP Architecture

In considering an alternative to the centralized SAP server approach, PwC Consulting was asked to consider a technical architecture that contained distributed SAP R/3 servers deployed on mobile environments down to the battalion level. This approach requires up to 450 SAP servers each supporting their own BDE sized unit and connected to a central SAP server in a 1-to-many arrangement (Note: the exact number of mobile SAP servers has not been determined, however rough order-of-magnitude estimates for this architecture required between 100 and 450 servers).

This approach is counter to the Combat Systems Architecture vision to reduce the logistics footprint in a deployed environment and was found to have unacceptably high levels of implementation and operation risk. PwC Consulting does not recommend or endorse an operational architecture that requires SAP R/3 servers to be deployed on vehicles in the battlespace along with Army units. Details of some of the major issues and risks with this approach are given in the table below:

Issue	Description	Comment
Multiple R/3 Instances	Creating, Fielding and operating up to 100-450 SAP R/3 instances is an unproven technical architecture.	This technical architecture is currently unproven on a scale required by the Army and will increase the project risk to unacceptable levels. In addition to the technical risks, the creation this type of deployed architecture for the Army's tactical operations will have a significant impact on the operation of the supply chain, and appears to be contrary to vision statements made in Army initiatives such as Single Stock Fund and the National Maintenance Program. As this

Issue	Description	Comment
		architecture is unproven, there is no basis for performance or operational support benchmarking and any estimates in these areas would be unfounded. SAP R/3 database and application servers normally operate in a highly controlled and stable environment (e.g. a computer room) with consistent and clean voltage, consistent humidity and little or no physical vibration. Deployed R/3 servers would need to be sufficiently ruggedized to operate in hostile environments (e.g. 'tent cities") 24/7.
Army System Adminis-trators	Operating 100-450 SAP R/3 instances will overwhelm existing Army operational support resources and require changes to the Army's force structure to create new positions to support the SAP system.	Each BSA requires the ability to operate and maintain it's own SAP R/3 instance. This requires a minimum of one System Administrator per instance. Operating a SAP R/3 production instance is a non-trivial task that is normally given to highly trained computer professionals. The System Administrator would have responsibility for hardware, operating system, database, application (primarily SAP R/3, but may also include third-party applications) and communications sustainment. The Army does not have a sufficient number of staff with the required skills to perform this function and would need to revise its staffing profile to be able to provide the necessary number of System Administrators. Alternatively, the Army may consider contracting this function. Fielding the SAP system without an adequately skilled System Administrator is an extremely high risk that will almost certainly render the GCSS-Army system inoperable
ALE Scalability	The SAP ALE technology will not scale up to support 100-450 instances running maintenance and supply functionality	A representative from SAP stated that the ALE technology could support 450 R/3 servers synchronizing with a central system, however this would depend on the frequency and volume of data. The volume necessary to keep Maintenance and Supply chain operations 100% synchronized is extremely large and involves transactional data (e.g. Work Orders), master data (e.g. catalogs) and historical data (e.g. Maintenance History). SAP cited a customer that was using ALE to synchronize approximately 100 instances as their largest number of ALE'd systems, although detailed data was not made available on the types and volume of data being shared via ALE.
Satellite Communi-cations	Satellite communications are a critical component of the overall solution, as each of the mobile SAP R/3 servers will need to regularly synchronize with the central server.	The availability of the satellite communications equipment at the deployed SAP server is critical to the operation of the GCSS-Army system. We believe an operational, real-time, visible supply chain is necessary to achieve the benefits and objectives of the Army's logistics transformation initiatives. Without assured communications, the effectiveness of the Army's logistics supply chain will be severely diminished.
System Synchroni-zation	Synchronization will reduce data validity, accuracy and timeliness.	Each mobile server needs to be synchronized regularly (ideally no less frequently than daily) with the central instance. Even at a very frequent synchronization schedule, data held at the central instance will never be 100% accurate or up-to-date. We believe this is violating one of the chief objectives of the GCSS-Army program, which is to provide real-time management information. Strategies need to be created for ensuring the data and configuration (system patches, configuration changes, etc) on each of the BSA instances remains consistent with the Army baseline.
Fielding	Designing, Testing and Deploying the mobile SAP servers	Deploying SAP production servers would have to be a highly automated and fast activity or the burden of doing this 450 times would greatly increase the program cost and schedule.

Issue	Description	Comment
Sustain-ment	Applying changes to the SAP baseline configuration as systems are deployed	The best practice for maintenance of an SAP production system requires that maintenance updates be regularly applied and the SAP system be kept up-to-date. This requires system administrator effort and can also require regression testing. It is unclear what effort is involved in sustaining hundreds of mobile SAP servers and what impact this could have on the operation on the unit.

Mobile Engine

Background. The SAP Mobile Engine (ME) is an application development architecture that allows programmers to write custom "Mobile Applications" that interact with SAP R/3 systems using mobile devices. Mobile Applications (MA's) are designed to run on a wide-range of mobile devices, including mobile phones, Personal Digital Assistants (PDA's) and laptop computers. The Mobile Engine architecture provides a capability for Mobile Applications to access the data and business rules stored in an SAP R/3 system and thereby allows for a mobile "front end" to SAP. Mobile Engine also includes an Application Programming Interface (API) for storing small amounts of data on the local device and for synchronizing local data with the SAP system. Using the Mobile Engine, applications can be designed to operate in either "connected" or "disconnected" mode. This allows the Mobile Application to either communicate in real-time with SAP or to save local transactions to the local data store and synchronize with SAP at a later time, depending upon the availability of communications. Mobile Applications are written in the Java programming language and run inside a Java Virtual Machine.

The Mobile Engine currently supports a flat-file data structure for local data storage. A flat-file data structure limits the size and complexity of data that can be stored on the mobile device. A future release of the Mobile Engine, due by December 2002, will add the ability to use a local relational database management system (RDBMS) to store data on the mobile device. The German Army (3 Brigades) plans to use this release. The Mobile Engine currently does not support data exchange via floppy-disk or other removable media, however it is planned in a future release due around December 2002.

It is important to note that the Mobile Engine is an architecture only, and is not a sub-set of the SAP system. Mobile Engine is a new technology, initially released to 'beta' clients in Q3, 2001, with 'general availability' schedule for April 2002.

Mobile Engine Implementation

Mobile Applications have to be designed (blueprinted), developed (realized) and tested. This effort is in addition to the design, configuration and testing of the SAP R/3 system, although they should be performed in parallel. Design issues for Mobile Applications include:

- Functionality to be contained in the Mobile Application – the exact functional scope of the Mobile Application needs to be determined. The TCO estimate is based upon the basic maintenance functionality of work order processing and requisitioning.

- Functionality will need to be developed in the Mobile Engine application to allow Automated Identification Technology (AIT) data to be read from the End Item into the SAP system. Interfaces will need to be developed to transfer data between the Mobile Engine application and the Integrated Electronic Training Manual (IETM) and SPORT systems.
- Structure (size and complexity) of the local data store – the number of tables/fields/data that are stored on the local device. Complex maintenance functionality requires a large amount of local data to be available to the user, however the design of the CRT Mobile Engine application is expected to provide minimal functionality (e.g. critical functions only) compared to the entire suite of maintenance and supply functionality in the SAP system.
- Synchronization Rules – what data is synchronized with the R/3 instance and how synchronization errors are resolved (e.g. how to resolve data concurrency between the mobile device and R/3).
- User Interface design – the "look and feel" of the Mobile Application. To reduce training and support impact, the Mobile Application should be created to be consistent with the SAP User Interface standards as possible.
- Local Rules (edit checks) – the "business rules" that are contained in the Mobile Application (e.g. data edit checks).

Additional implementation resources are required for the following Mobile Application related tasks:

- Blueprinting – It is assumed that Mobile applications will be a subset of the standard SAP transactions defined in the Blueprinting phase and that the business rules will be identical. Java programmers with knowledge of SAP R/3 and ITS environments will be required to attend SAP blueprinting sessions in order to understand the overall R/3 system design and provide input to the SAP configuration teams on the capabilities and requirements of the Mobile Engine
- Development – Java programmers with knowledge of SAP R/3 and ITS environments will be required to develop the Mobile Applications
- Testing – additional testers will be required to test all elements of the Mobile Application. Additional testing effort will be required for User Interface design and volume (stress) testing

Building Mobile Engine Applications on the scale anticipated for the Army requires the following approach to project staff and teams:

- **Java Developers** – Java will be used extensively to write mobile side applications, including applet development.
- **SAP Functional Experts** – Each SAP functional team will require representation from the mobile team. The business rules have to be well understood before the applications can be written and the functional experts are required to articulate these rules to the Mobile Application developers.
- **ABAP Developers** – Even though the mobile applications are Java based, the code actually being called in SAP is ABAP. This could be custom code or SAP delivered code. Depending on the functionality desired, there could be significant

ABAP development required. At a minimum, ABAP developers of moderate experience are required.

- **Infrastructure\Systems Architect** – This role would take a medium to high view of the supporting infrastructure. The Infrastructure Architect needs to understand development and the business side at a medium to high level along with a much broader technology view of the network, interfaces, batch vs. real-time, sizing, scalability, fault tolerance issues, operational issues, etc. Typically filled by a senior resource.
- **Application Architect** – Similar to the Infrastructure Architect and with some overlap, this role would take a medium to high view of the all of the application development. The Application Architect needs to understand infrastructure and the business side along with a much broader view to develop integration points, make sure code meets architecture guidelines, performance guideline, coding standards, quality reviews, etc. In large environments this is a full time role. Typically filled by a senior resource.
- **Security** – Both SAP and non-SAP security issues need to be considered – for example, will mobile devices have secured logon, two-factor authentication or maybe use SAP's Secure Network Communication. Also, consideration for security outside of SAP is important as the network access points are expanded.
- **Basis Administration** – Is required to understand the mobile technology and potential impact on the R/3 systems and ITS systems. The Basis Administrators also support the project team on an on-going basis which can mean assisting with diagnosing problems caused by code, monitoring for system problems, performance tuning of ITS, SAP, etc.
- **Infrastructure** – Resources in the form of Network and Systems Technicians required to provide project team support in testing and fielding the solution.
- **Testing** – Additional resources with similar skills profile to a standard SAP test team are required to test the Mobile Applications. Mobile Applications will require greater testing effort than a standard SAPGUI based system, in the areas of: user interface, volume testing (both in the local data storage and for communications bandwidth during synchronization), data concurrency and Mobile Application business rules.
- **Training** – Resources with similar skills profile to a standard SAP training team are required when fielding the Mobile Applications.

The revised schedule incorporates additional resources in a separate 'Mobile Engine' sub-team of the development team, as well as additional resources for the technical support team. The Mobile Engine team is comprised of a team lead, four senior consultants and ten developers/team members each from the Government and the System Integrator.

BACKGROUND INFORMATION ON SAP

- 10 Million Users. 44,500 Installations. 1,000 Partners. 21 Industry Solutions.
- Founded in 1972, SAP is the recognized leader in providing collaborative e-business solutions for all types of industries and for every major market.
- Headquartered in Walldorf, Germany, SAP is the world's largest inter-enterprise software company, and the world's third-largest independent software supplier overall. SAP employs over 27,800 people in more than 50 countries. Our professionals are dedicated to providing high-level customer support and services.
- SAP has leveraged its extensive experience to deliver mySAP.com, the definitive e-business platform for today's economy. The mySAP.com collaborative e-business platform allows employees, customers, and business partners to work together successfully -- anywhere, anytime. mySAP.com is open and flexible, supporting databases, applications, operating systems, and hardware from almost every major vendor.
- By deploying the best technology, services, and development resources, SAP has delivered an e-business platform that unlocks valuable information resources, improves supply chain efficiencies, and builds strong customer relationships.
- SAP is listed on several exchanges, including the Frankfurt Stock Exchange and the New York Stock Exchange, under the symbol "SAP."
- SAP **R/3** is perhaps the best known ERP (Enterprise Resource Planning) system on the market. Originally dating back to the 1970s, it took the then-controversial approach of combining various business functions into one application and database.
- Originally, **R/2** was implemented atop mainframe databases like **DB/2** , **Adabas**, and **IMS**.
- In the 1980s, SAP designed a new architecture for the new **R/3** system using a multi-tiered Client/Server architecture, with data storage on a database server running some relational database, application code, written in their ABAP/4 language, running on a set of application servers.
- SAP intended to keep a degree of vendor-independence; the application server software can run on a number of platforms that have included several Unix flavors, VMS, and Microsoft **Windows NT**, whilst they have supported a variety of relational databases, including Oracle, Adabas, Informix, Microsoft **SQL Server**. Front end software uses their own proprietary protocols atop TCP/IP, and has run on various platforms.
- Web address: www.sap.com

EXHIBIT V - DIRECTORATE OF COMBAT DEVELOPMENTS FOR COMBAT SERVICE SUPPORT (DCD CSS) COMMENTS ON THE ADOPTION OF A COMMERCIAL ERP PRODUCT

1. Recommend the Army adopt a commercial ERP package vice a custom developed ERP. The adoption of commercial best practices should give us higher functionality and lower costs. "Most companies realize returns of investment (ROIs) in the 25% to 50% range, which is not bad, but they probably could have achieved 50% to 100% or higher if they had implemented with high ROI as their constant goal. Realistic ROIs for ERP systems range form 25% to 100% depending on the capabilities of the existing systems and how well the new system is implemented." (Source: *Enterprise Resources Planning and Beyond, Integrating Your Entire Organization*, by Gary A. Langenwalter, 2000, page XIV")

2. According to Langenwalter (page 327), 40% to 60% or higher of ERP implementations can be classified as "failures." He categorizes the reasons for failure as follows:

- People don't want the new system to succeed.
- People are comfortable, and don't see the need for the new system.
- People have unrealistic expectations of the new system.
- People don't understand the basic concepts of the system.
- The basic data is inaccurate.
- The system has technical difficulties.

From this list we see that people are the source of much of the risk of implementing an ERP solution. The risk is probably higher for a commercial ERP vice custom developed ERP. In order to deal with the people issues, active senior level support will be crucial to the success of either a commercial or custom ERP package. The use of a commercial ERP package will require many Program of Instruction (POI) changes which is probably the highest source of risk within TRADOC.

EXHIBIT VI - DIRECTORATE OF COMBAT DEVELOPMENTS FOR TRANSPORTATION (DCD TRANS) COMMENTS ON THE ADOPTION OF A COMMERCIAL ERP PRODUCT

1. Potential Impacts of Army's Adoption of Commercial Enterprise Resource Planning (ERP) Software for GCSS-Army Tactical from a Movement Tracking System Perspective:

a. Assumption: The basic assumption is that the selected ERP architecture does not result in a change to current hardware solutions but is mostly focused on sharing of data based resources.

b. BLUF: ERP is what we support. We don't know what the software methodology will change, do, or incorporate within either development effort. If we don't understand how it will look and feel, how can we tell what processes will change for an analysis effort? Since both are developing, the most revolutionary method would seem to be the likely supportable choice.

c. Impacts:

- Doctrine: Do not see much of an impact. Current doctrine for MTS written on its capability to provide ITV and TAV when it interfaces with other Systems such as GCSS-A and TC AIMS II. MTS should continue to be a communications link for transmitting data into the SAP based ERP of GCSS-A just as it is envisioned today. Unless the SAP/ERP calls for a new hardware system, the Commander's guide for MTS being written to capture TTPs from initial fieldings may only need to be modified to accommodate the look and feel of the new ERP software in GCSS-Army.
- Training: MTS POIs are currently developed for the baseline MTS. Expect the entire POI to be redeveloped as existing software on MTS would be changed to meet future developments between the two systems. However these changes would be expected for any patch or upgrade for the system in its configuration management.
- A commander's guide is being developed for the functions of MTS and can instruct the leveraging of the CSS operations for the commander. As interfaces are developed for any system the version release will be contain updates for all aspects of the system. If MTS and GCSS-Army have to build everything from scratch now, I don't see any significant impacts in this area either.
- Organization: Any changes in software in either system will not effect the current planned force structure environment that we are fielding to. It is not foreseen that additional hardware will be required.
- Materiel: MTS currently only provides the CSS commander ITV of his trucks and is not tied into a database or management system. Block two MTS will call for MTS to link into the various modules of GCSS-Army. Although we have developed the User Functional

Description of MTS that allows for the GCSS-Army link, no development dollars have been applied to MTS to make the interface a reality.

- Soldier: The soldiers will have to learn the interface specifications no matter which way the software development goes. No impact.

EXHIBIT VII - COMBAT SERVICE SUPPORT BATTLE LAB COMMENTS ON THE ADOPTION OF A COMMERCIAL ERP PRODUCT

Planning for the Objective Force and Future Combat System should look very closely at this initiative.

On the Plus Side:

Commercial Industry is way ahead of the military in this field (up to date technology)
Changes and updates would be timely
Software development cheaper (using standard software vs custom built software)
Many more functional experts available

On the Negative Side:

Retraining of Army personnel (using current STAMIS)
Time and cost of switch over

EXHIBIT VIII - INFORMATION SYSTEMS DIRECTORATE COMMENTS ON THE ADOPTION OF A COMMERCIAL ENTERPRISE RESOURCE PLANNING (ERP) PRODUCT

1. Enterprise Resource Planning (ERP) Adoption. A commercial ERP implementation would not automatically solve all system development and maneuver sustainment problems. ERP, as an off-the-shelf solution, would require the Army to change its culture and to adopt commercial business processes. It must be fully understood that ERP adoption for the Army in the Field would be a major change which brings with it new problems and challenges.

2. Doctrine, Training, Leader Development, Organization, Materiel, and Soldier (DTLOMS) Impacts. The potential impacts of implementing a commercial ERP product will be discussed in term of DTLOMS.

Doctrinal Impacts:

- To thoroughly determine the doctrinal impacts of adopting a commercial ERP package, the DCDs would need to conduct a detailed review to examine all applicable mission threads in relation to the new automation system and associated business processes. Procedures would have to be set up to coordinate this effort. It would need to be a continuous effort since the system will change over time based upon changes in the commercial industry.

- The real challenge after the initial look will be creating new doctrine that fits in the system or ensuring the system can change to accommodate new doctrine that the Army wishes to adopt. This also applies to DA G4 policy. They would need similar mechanisms and procedures.

- ERP will result in reduced flexibility for required/desired system changes. The Army is constantly changing to meet future war fighting capabilities in support of changes to the National Military Strategy. The commercial ERP software may or may not be able to accommodate the necessary changes. Basically ERP must be 'adopted;' not changed to meet your needs. Although 'bolt-on' applications are sometimes used to cover areas that are not addressed in the commercial ERP application, these add additional cost and complexity and may not provide the desired capabilities.

Training Impacts:

- Training would be the biggest impact of all. First, the ERP would require the Army to adopt new and different business processes. Soldiers, civilians and

contractors would have to be trained on these new business processes. Second, the 'automation' side would change significantly. The ERP package would likely contain purely commercial terms on the screens rather than the Army/MILSTRIP terms that today's soldiers are familiar with.

- The contractor would need to be tasked to produce the recommended training for the schools or to perhaps teach it in the schools. Any training developed must be more than just learning to push keys; it must include the operational context of why you are pushing the keys. This new training would also be required for existing users at the time as the ERP implementation.

- Additionally, the entire Army's institutional training base would have to be modified IAW the new ERP processes, terminology, and technology. This would include schools at all levels.

- This re-tooling of the Army's institutional training base would be even more difficult because the existing schoolhouse 'trainers' would require significant training. Traditionally, we have been able to provide 'train the trainers' level training to a group of senior, experienced cadre who could then pick up the training mission for the new soldiers in the next class. This approach might not be possible due to the amount of change to be expected with an ERP implementation.

Leader Impacts:

- New training would be needed for managing the system. They would need to understand what can be changed, what cannot be changed, and why. The contractor would need to be tasked to produce that training as well as handy guidebooks and TTPs. The contractor must understand the environment and be able to relate the software to the operational need.
- A commercial ERP capability has the potential to eliminate information choke points at management nodes (now at Divisional SPBS-R, SARSS 2AD, SARSS-2AC/B, SAMS-2).
- The availability of information at multiple levels could undermine the ability of the local commander to execute local requirements.
- Leaders and managers will need to overcome a number of cultural changes inherent in an ERP. If this cultural change is successful then it may be possible to eliminate positions which are "data research" intensive.

Organizational Impacts:

- The Supportability Strategy for both the hardware and the software may change. How will this system be managed in the field (outside of garrison)? Are contractors going to be needed forward for troubleshooting? If so, how many, where, and other concerns as referenced within AR 715-9, *Contractors Accompanying the Force*. Systems administration organizational impacts will need to be thoroughly assessed.

- The traditional structure of squad, detachments, companies etc, may not fit into the ERP process and could require modification. Organizational change could then impact rank structure in support units.

- The implementation of ERP may not accommodate the budget process of the Army and the different 'colors of money.'

Materiel Impacts:

- Implementation of a commercial ERP product in GCSS-Army will not result in a true 'enterprise' database because only the supply and maintenance data will be included in the ERP database. Other CSS areas (i.e., personnel, medical, finance, and transportation) are being modernized as part of other programs (e.g., DIMHRS, TMIP, and TC AIMS II) and would not be included in a GCSS-Army implementation of a commercial ERP. A data sharing arrangement (which is already being worked with the current custom code solution) must be possible.

- The software piece of materiel is the most challenging. How will configuration management work?

- ERP architecture must not result in a "100% communications dependent" solution. Tactical users must be free to accomplish at least their most critical tasks even when communications support is not available from their location to reach a remote enterprise level database.

- The acquisition of an ERP capability is far more than hardware and software. The solution set includes a support staff and proprietary techniques and materials. The deployment of the ERP could entail the transport of a considerable contractor force into or near a battle space. Although software development time is possibly shortened by an ERP, the opportunity costs associated with deployment could be substantial.

Soldier Impacts:

- MANPRINT issues concern the graphical user interface (GUI) and the reading level of the users manual under ERP. Also will the type/MOS soldier we currently have as operators and supervisors be able to operate/supervise a system that is ERP-functionality based? Will new MOS with new skills be required?

Will the number of soldiers in our current MOS be sufficient to accomplish the new mission/perform the new duties?

- Soldiers providing maneuver sustainment could be affected in terms of rank structure, professional training, and assignment.
- Army adoption of commercial ERP package for supply and maintenance may make it harder to retain trained soldiers. The Army has always had difficulty retaining well-trained ADP technicians. This will continue to be the case once we implement a commercial ERP package that will expedite the transition of Army personnel to careers within the commercial sector.

ATCL-S April 6, 2002

EXHIBIT IX - SOLDIER SUPPORT COMMENTS ON THE ADOPTION OF A COMMERCIAL ERP PRODUCT

1. The logistics community needs information from the personnel system for manifesting, estimating supply requirements (Class I, water, etc.), and logistics services such as laundry and bath, force provider, etc.

2. The Army Human Resource System will become an element of the Joint Human Resources System, under DIMHRS (Defense Integrated Military Human Resource System) – DIHMRS is being developed using ERP functionality; PeopleSoft has been awarded a contract for software development. DIMHRS was to interface w/GCSS-Army and any ERP, which would develop the functionality of GCSS-Army, should also have an inherent requirement to interface DIHMRS into the ERP product.

3. My earlier comments about functional requirements being the same regardless of the technical information enabler used to satisfy them were acknowledged by the People Support FICT on 6 March. Most of their comments to follow may well apply to any large, consolidated enterprise system undertaking, either GOTS or COTS. The Army GOTS systems have been around so long that there is at least some degree of data commonality and standardization that may be lost in a COTS solution. More a cultural change issue of which you are probably well aware from other related comments you may have received. The personnel community has less concern, as they are also going to an ERP solution for DIMHRS. Medical had the most concerns, as they have already invested heavily in a government developed design to interface to GCSS-Army Management Module. These concerns should be diminished by the fact that the Management Module has not yet been developed.

4. On 6 March 2002, the People Support FICT discussed your questions and they highlighted nine concerns:

a. Reliable, robust commo that can accommodate the large increase in user traffic and use of a web-based solution. (A major issue already addressed in other studies and comments)

b. Increased CSSAMO responsibilities for administering and ERP COTS application and associated increase in training time and needs. Group also mentioned the likelihood of greater loss of CSSAMO talent to industry once they are trained on a commercial package ERP.

c. Will SAP be user friendly in handling multiple users accessing the system at the same time? One of our members has experienced Army-wide information systems that can't seem to satisfactorily handle more than five users at a time. Commercial solutions must be able to handle large numbers of users accessing the system simultaneously.

d. Need for translation of data elements. FICT members are not confident that the DOD or Army will adopt a standard data element dictionary among its own government systems, let alone among government and a commercial ERP package. A commercial package will add even more disparate data structures above and beyond the current DoD non-standard ones.

e. Need for middleware to interface with disparate CSS databases at the joint level (DIMHRS, Finance, TMIP, and MP system). Non-standard data structures require middleware bolt-ons to facilitate interfaces between disparate databases. While this will be an issue for either a GOTS solution or a COTS ERP solution, there is concern that compatibility with COTS solutions will increase the middleware requirements for both sides of an interface. Heavily dependent on the EDI standard employed.

f. Difficulty in changing the interfacing CSS systems when new versions or changes to the ERP occur. Since interfaces must be built to joint personnel and joint medical systems, as well as the defense finance system, the interfacing systems are concerned that changes or upgrades to an ERP may require expensive updates in the interface.

g. Licensing costs, especially for the Reserves and National Guard. Reserves and NG fund their own system fieldings. COTS REP application software adds licensing costs beyond the usual COTS operating system costs.

h. Loss of vendor support for the ERP software or for needed changes in the future. The risks of commercial software companies going out of business or no longer supporting needed upgrades or changes has many historical precedents and is a real concern to many of the FICT members.

i. Incompatibility of current commercial ERP software with the unique information requirements of CSS areas such as: chaplain, legal, mortuary affairs. Expensive, unique software applications may have to be developed to accommodate these functionalities not traditionally found in an ERP solution.

EXHIBIT X - DIRECTORATE OF COMBAT DEVELOPMENTS FOR ORDNANCE (DCD ORD) COMMENTS ON THE ADOPTION OF A COMMERCIAL ERP PRODUCT

BLUF: The ORDNANCE CORPS supports the SAP ERP solution. MG Stevenson cannot speak to the other functional areas, but he was quite impressed with what he saw on the maintenance application of the SAP ERP. MG Stevenson's recommendation – "Go with SAP for at least the maintenance module – it will work."

On 9 January 2002, a demonstration of a SAP ERP solution was provided and MG Stevenson, Chief of Ordnance wrote, "I spent all day today at SAP in Washington, looking over their product, and quizzing the experts. Jesse Mason was on hand, as was Steve Marshman, lots of folks from the PM, several from HQDA DCSLOG, Larry Scheuble & LTG Beauchamp from AMC, a couple of "user jury" folks, Aviation DCD, etc. I accomplished what I set out to do, which is to determine the extent to which "bolt-ons" are required for our retail/tactical maintenance processes. I'm much more comfortable now than I was when I walked in this morning -- this software is extraordinarily powerful, and has an enormous amount of functionality we can use right out of the box (even much of AMAC's functionality). In fact, I did not find one thing that I was certain we'd need a "bolt-on" for at the tactical/retail level (obviously, even one day is not enough to say this for certain, but I am certain that if we will require bolt-ons, they will be few).

SAP also rolled out a potential solution to the comms problem . . . though at this point, all I can attest to is that it looks good on paper. We need to examine this solution much closer (PM got his first look at it today) . . . but PM said he doesn't really have time (or $) for a full-fledged "pilot" of that. Perhaps we don't need a "pilot" -- perhaps an ISEC evaluation or something would tell us what we need to know . . . I'm not sure. This needs further work.

If I were asked to vote today, I'd say go with SAP. It can do the work, maybe even without any bolt-ons. I think the comms problem (what to do if you cannot talk to the central repository of data) can be solved. The approach that Brian describes below, and that you mentioned to me on the phone, which would have us use SAP as a SAMS-I/TDA replacement, but a TRW-developed solution for all TOE maintenance activities, is going to cost us unnecessary duplication in effort and $. Worse, the longer we delay a decision on this, the more at risk we are for deploying the maintenance module to aviation maintenance activities by 2QFY03 as scheduled (it may be too late for that now, even if we made a decision today). We need to make this decision -- as quickly as possible -- and I say go with SAP. It's affordable (says Steve Broughall -- I reconfirmed that with him today), both PM and TRW say they can support going with SAP (but will need backing from the naysayers who want a custom-made solution for Army processes), and I believe the comms issue is solvable.

In summary, "The SAP ERP solution is a well designed product, right out of box, and we do not have much of anything to fear from changing our business process – but again, we can only talk to maintenance functionality at this point. When PM GCSS-A briefed us on the PricewaterhouseCoopers study of the SAP-based solution, TRW's position was that they supported it. OSD is going to eventually require an ERP solution sooner or later, so we might as well get on with it. There are numerous advantages to adopting the ERP (especially when you don't need a lot of bolt-ons), and earlier is better."

Our current maintenance management software programs include: ULLS-G, ULLS-A, SAMS-1, SAMS I/TDA, and SAMS-2. These do not include the various enablers that have been placed into various organizations as enhancements pending the fielding of GCSS-A/T. The current programs also have numerous ECP-S, some funded and some delayed due to lack of funding, to increase legacy STAMIS functions.

The future GCSS-A/T Maintenance module will replace the ULLS-G, ULLS-A, SAMS-1, and SAMS I/TDA legacy STAMIS programs. All of these current software programs will be combined to provide a single program with all the required maintenance management functions and to reduce the number of programs that need to be trained. The overall number of personnel to be trained will be significant and will require TRADOC to change POI's at a majority of the training facilities.

The SAMS-2 and SAAS-MOD functions will migrate into the GCSS-A/T Management module and provides the users greater capability as a manager. Training for this module will require a change to the current POI.

DTLOMS Impacts

Doctrine: Impact - Low

Maintenance Management doctrine does not go into specific functions of the software programs named in the manuals. Although the doctrine will require editing; going to an ERP solution or a custom developed program will not require the doctrine to undergo a major re-write. Soldiers will be able to use the current doctrine in performing maintenance management.

The one major addition to doctrine that is required for both the ERP solution and the custom developed program is:

"Maintainers will also enter maintenance data using a GCSS-A/T Computer system or a Maintenance Support Device with the capability to use ETM's, IETM's, Diagnostic software, and the GCSS-A/T Maintenance Module."

Ammunition management doctrine also does not go into specific functions of the software program named in the manuals. It is written at the "broad view" level. Soldiers should be able to use the current doctrine using an ERP solution. The greatest change

will be support for peacetime, contingency, and tactical requirements supporting the continuum of ammunition management operations. By combining these requirements with the use of common functions, common processes, and common screens, will reduce training requirements.

The ERP solution may be a commercial software application; but updates and changes are continually made to meet industry requirements and future needs. The changes may influence the business process; but our doctrine today is written broadly enough to support our different force structures no matter what software solution is employed. Another important factor will be teaching our leadership what are the capabilities of the future program, how to use these capabilities, and to capitalize on this powerful program in building combat power.

The greatest change will be at the unit level with the local SOP. Units will be required to re-write their SOP's for either solution as to which business process to use and how to deploy the system. Again, no matter which program is implemented the change will be to the business process and changes to policy.

Training: Impact - High

Training is the greatest impact as the number of users of GCSS-A/T is expected to multiply significantly. With all new or improved programs, training is required. Regardless of whether the Army GCSS-A/T program is an ERP solution or a custom developed program, it will require major changes to our training POI's especially for the maintainer's for the entire force. Currently, maintainer's are not trained on the current software maintenance management programs. Training of ammunition specialists to use either software will basically require changing the POI's to accommodate the program selected. In addition to Quartermaster soldiers, every school that trains maintainers (Ordnance, Signal, Military Intelligence, Medical, Transportation, Engineers, and Aviation) will be affected.

Training for this type of program, whether an ERP or custom developed solution, is a perishable skill. Therefore, the contractor needs to provide a training program that can be taught in the formal classroom and also be exportable for use away from the classroom. The software program should also include embedded help menus to assist the user when needed. Commercial products normally have extensive training programs and help desks are readily available.

Either we advance now to an ERP solution and change our training or we will change our training for custom development and then again for the ERP solution in the future. It is apparent that soldiers will eventually be trained on an ERP solution. The impact will be the density of soldiers that require re-training if the Army chooses custom development and then employ an ERP solution. The number of soldiers today requiring re-training on the ERP solution is minimal when compared to the density of users for the ERP solution.

Leaders: Impact – Medium

From top down and from the lowest level to the top, GCSS-A/T requires 100% support no matter which solution is selected. Leaders at all levels will need some form of training for either program selected to be used for GCSS-A/T. Commander guides need to be provided to assist the commander, as required, to know what decision support and management capabilities are available from the databases.

Custom development or an ERP solution for maintenance will bring a change to the way of doing business procedurally. Leaders and managers will require training in how procedures have changed and will require training in the flow of how to do business. The cultural change associated with using the ERP solution is that it provides the ability for all leaders or managers to access timely data based on the power of the software to gather data from multiple sources. Given the appropriate level of security, commanders will have near real-time readiness visibility at any given moment.

The custom developed program is envisioned to continue with canned reports known today and will eventually perpetuate to an ERP program allowing the commanders more visibility of data without going to other systems.

Organization: Impact - Low

No matter what the solution, an organization change will occur at least for the GCSS-A/T Maintenance Module. Both the custom developed program and the ERP solution will most likely require some type of systems administration. The harder question is how many times can the data be separated and still maintain integrity. Either system will require some form of synchronization process to keep the data up-to-date with all of the known users. How the organization processes, stores, and uses the data and programs will be a learning process for both solutions.

GCSS-A/T Maintenance Module will have the largest impact to an organization as the number of users will increase tremendously. How an organization trains and maintains the data and future software application is still unclear.

Material: Impact - Medium

Hardware - The GCSS-A/T Maintenance Module BOIP is still under-development and the hardware specifications, although defined, are subject to change. Under the current program, the vision has been stated that the maintenance module will also be loaded on the future Maintenance Support Device. PM GCSS-A has shared with PM TMDE, the current hardware specifications required to host the Maintenance module. The Maintenance Support Device is a powerful notebook computer that is capable of being upgraded if needed. The objective requirement for future maintainers is to use only one

computer system that is capable of performing all of the information requirements that a maintainer may have.

Software - Whether an ERP solution or a custom developed program, the software appliqué the user requires needs to be easy to support and not resource intensive. The software needs to be easy to use and easy to train. An ERP solution provides for the ease of making software changes as required to a specific function verses the whole application or baseline. Changes made to the custom developed software will most likely be similar as we have today in that the whole baseline would have to be updated.

Communications – To adopt an ERP solution will require a change to our communication infrastructure. However, even the future custom developed program will eventually require a more robust communication infrastructure than we have today.

Soldiers: Impact - Low

The Department of Defense and the Army has already taken on the challenge of soldiers using computers on a daily basis from doing Army business, reading Electronic Technical Manuals, using AKO, and online education. Using computer technology to conduct business from the battle space should have little to no impact with our soldiers of today and the future.

Using an ERP solution or the custom developed solution should have little to no impact on the soldiers MOS, rank structure, or position. The software should have the basic requirement to establish the role of the soldier and not to allow the soldier to exceed their authority unless decisions are made by policy to allow change.

The ERP solution or the custom developed program is not envisioned as being a means to reduce the force structure. These software programs will enhance the soldier's capabilities today.

Additional comments:

As the future GCSS-A/T custom developed program is assembled in Tier 1; the vision, as currently understood, the future maintenance module will be completed in different software builds. Therefore, the user will first get a combined and an enhanced version of the current maintenance programs and then receive further enhancements over a series of future software builds. The final product may not be realized for some years after the first software release with the goal of eventually going to an ERP solution.

To jump directly to an ERP solution, training maintainers as users would be a major change to our POI's but would not require soldiers to be re-trained. Our soldier's today have a better understanding and interface to computer operations than soldiers 10 years ago.

The challenge in proceeding to an ERP solution lies with the leadership. Our leadership must all support this major change if an ERP solution is expected to be beneficial and to attain a return on investment. An ERP solution has the capability to provide the leadership a solution to attain the Total Cost of Ownership and provide better management decisions.

The custom developed program will, over the years, provide valuable tools to the leadership; but will require multiple programs to accomplish the same output as the ERP solution. Both programs will require improved communications to move data and provide the commander one version of the truth.

As the Ordnance Corps works with the DA G4 on many subjects, shifting from the current maintenance programs to an ERP solution or to custom development will require a change in the policies. Ordnance stands ready to assist DA G4 in Maintenance Management procedures.

EXHIBIT XI - CASCOM DIRECTORATE OF COMBAT DEVELOPMENTS FOR QUARTERMASTER COMMENTS ON THE ADOPTION OF A COMMERCIAL ERP PRODUCT

1. The decision on whether the Army should adopt an Enterprise Resource Planning (ERP) system as the Army retail business system is a complex and far-reaching one. If the Army had not already begun developing its own customized integrated data solution, the Global Combat Support System Army (GCSS-A), clearly an ERP would offer an effective solution to the existing legacy systems. The Army has already spent a great deal of money, time, and effort on GCSS-A, a customized integrated data solution to meet the Army's business enterprise needs. Although GCSS-A is just now testing its first module, much work has been completed outlining requirements and developing both software and an architecture to support additional modules and functionality. GCSS-A is just now beginning to show concrete progress and much of the hardest work has been completed in the development of the initial module.

2. **GCSS-A:** The GCSS-A solution is a lower impact solution in the near term. The applications are user friendly, they are being phased in to replace legacy systems, and the integrated database concept is one that will meet the needs of the Army once the system is developed in full.

   Pros:
   - GCSS-A is a customized solution, specifically tailored to each set of users and based on accepted Army business practices.
   - GCSS-A is being developed to integrate into the Army battlefield architecture and has already begun development of a multi-level security system in order to integrate with classified systems.
   - A great deal of the requirements determination process and operational architecture has been completed in GCSS-A.
   - By design, GCSS-A is "user friendly".
   - GCSS-A would have less of an impact on all levels of users than an ERP.
   - GCSS-A will provide an integrated database and an interface to other systems.
   - The Army pays for development costs, then owns the software. There are no licensing fees.
   - GCSS-A is being developed in phases by modules and functionality, lessening the overall disruption of the transition from legacy systems to GCSS-A.

   Cons:
   - The GCSS-A applications require extensive software to be written for each application.
   - GCSS-A is phasing in functionality based on priorities of development, focusing on replacing existing legacy systems. Functionality which is

much needed, but has not previously been automated, such as fuel, water, mortuary affairs, airdop, field services, etc. must wait a long time to be automated and included in the GCSS-A system.

- GCSS-A will take many years to complete the development of the identified modules and be fully functional and integrated.
- By using a customized system based on Army business processes, the Army may not be using commercial best practices in all cases. Building a system which conforms to Army business practices may not result in the best business solutions.

3. **ERP:** An ERP offers increased functionality and efficiencies in the long run, though in the near-term there would be increased disruption.

Pros:

- Common reporting features and common functionality.
- Seamless processing of common data between applications.
- Much less software development, which equates to savings in development costs and time of development.
- Centralized update of software.
- Provider upgrades the system as new technologies emerge, something which often takes many years for the Army to accomplish.
- Significant improvements in financial processes and practices.
- One source of data provides for data management efficiencies.
- System allows for customization of screens, processing, and reports.
- ERP systems have much more initial functionality than GCSS-A's initial stages.
- The use of best commercial business practices may improve Army business processes.
- Standardized hardware would be implemented, which has many positive impacts, i.e. on maintenance, parts, supplies, etc.
- Scheduling activities are integrated into the system, providing service capabilities not currently planned for GCSS-A. (Scheduling could apply to maintenance and field services for example).

Cons:

- Lengthy timeline for efficiencies to emerge- i.e. it will take years of turmoil and change before the ERP system would begin to see increased effectiveness and efficiencies.
- Huge cultural change.
- Change management is significant.
- Requires total commitment and support from the entire chain of command.
- Since the license fees are based on the number of users vice the number of systems, the costs to implement an ERP throughout the Army could be enormous.

- Roles, responsibilities, and tasks of personnel will change. Personnel will need to adapt to these changes, plus the structure of the organization may also change.
- Increased training costs and increased length of training time.
- ERPs are not as flexible as customized systems. The Army will not know if an ERP meets all of the needs of the tactical Army until developers are actually mapping ERP functionality.
- Must change Army business processes to meet the requirements of the *ERP (although as noted above, this may also be a positive if the ERP processes improve Army business practices).*
- ERPs are not normally intuitive to the user; definitely ERPs require increased training time. Plus, ERPs will require training not only of the operators, but of the supervisors, staff/management, and the entire chain of command. NOTE: SAP seems to have an effective training system incorporated into their implementation program, which may offset some of the training costs by reducing classroom time.
- Interface and data conversion and data loading requirements are significant.
- Some risk to the customer is inherent during the transition period. Parallel operations may need to continue longer than for civilian transitions. During the transition to an ERP, Army customers may include soldiers in combat or contingency operations. Failure of support could increase risk to the soldiers on the ground.

4. There are significant impacts of implementing an ERP from the Quartermaster perspective. Following are impacts on the Army's doctrine, training, leadership, organization, materiel, and the soldier:

Doctrine: Army doctrine and regulations will have to be rewritten to reflect new business rules and new ways of doing business.

Training: The training required to implement and ERP is significant. Users, managers, and the entire chain of command need to have some training on the system and various applications. Because the ERP system is not intuitive to the average soldier, the training requirements for an ERP are higher than for GCSS-A. Progressive and imbedded training programs may offset some of the training costs.

Leadership: The entire leadership would need to be educated on an ERP. The entire chain of command needs to be actively involved and supporting the development of an ERP. Without leader commitment an ERP will not be successful.

Organization: As tasks, roles, and responsibilities will change in an ERP environment, organizational structure may change. Additionally, Tables of

Organization and Equipment (TOEs) may require changes to meet changes in doctrine and business processes.

Materiel: Will standardize hardware to some degree across the Army's business spectrum.

Soldier: The individual soldier will need additional training in both the system and the business processes of an ERP. Additionally, job skill sets will change and may affect military occupational specialty (MOS) classification and structure.

5. **Conclusion:** Both solutions are viable. The GCSS-A alternative equates to less risk and less disruption to Army personnel, units, and supply operations. Implementing an ERP is somewhat riskier, but this risk may be ameliorated by change management, including intense training and thorough preparation. An ERP provides increased business enterprise capabilities and efficiencies, plus may also offer efficiencies for the future, which are not readily apparent at this time, such as implementing new technological innovations or changes in management techniques. An ERP appears to be a feasible solution, but one which cannot be successful without the full commitment of the leadership and the support of all personnel involved. Additionally, the length of time to implement an ERP must not be underestimated. A recommendation of one alternative over the other cannot be made by DCD-QM without a full cost comparison and a study of ERPs' effectiveness in the entire realm of Quartermaster functions, such as split-base operations, airdrop, field services, fuel and water supply, and other functions not currently automated. An evaluation of one or several DoD activities currently using an ERP would be extremely helpful. Recommend CASCOM SMEs visit DoD sites using ERPs, especially SAP and PeopleSoft. For instance, the Newport News Shipping (NNS) activity implemented an SAP ERP in 1998-99. It would be well worth the effort to find out what the major problems NNS encountered were and to obtain feedback from NNS personnel.

EXHIBIT XII - CASCOM TRAINING DIRECTORATE COMMENTS ON THE ADOPTION OF A COMMERCIAL ERP PRODUCT

1. Introduction: From a training/leadership perspective, both alternatives...adoption of a commercial Enterprise Resource Planning (ERP) solution or continued development of customized (Army) software...result in the need to continually develop and update supporting training products. In other words, in addition to the benefits in functional capability and business practices that each alternative might/might not provide, the preferred solution must also support effective and efficient development, update and delivery of training. As such, the primary training consideration is to what extent does each alternative cause initial development and/or changes...large or small...to existing training materials, both in primary and secondary legacy/emerging applications, and to what degree we (the Army) are willing to fund/resource the full scope of training efforts associated with each option. This includes, but is not limited to, satisfying the three following categories:

a. Training Standards: Regardless of which alternative is chosen, the technical and functional features of the software must support expedient, cost effective and concurrent construction of training support packages (TSPs). Perhaps the commercial ERP solution includes training materials that can be converted to TRADOC standards, or maybe the Army customized approach best meets this need. In any case, the derivative TSPs must comply with the Army Digital Training Strategy (ADTS), The Army Distance Learning Program (TADLP), Army Systems Approach to Training (ASAT), and other governing DA/TRADOC policies and procedures. Likewise, the software must support development, integration and interoperability with related Training Aids, Devices, Simulators and Stimulations (TADSS). Although compliance to these standards might initially appear as separate in nature...and not related to the ERP decision...the technical makeup, proprietary rights and adaptability of the proposed software (commercial or customized) has a direct relationship to the cost, effort and time required to produce required training products.

b. Training Objectives: In concert with meeting the above stated standards, each alternative must be assessed in regards to functionally and cost effectively supporting achievement of specific training objectives, as depicted in the CASCOM automation training strategy and overarching Army Digital Training Strategy (ADTS). A determination must be made as to how many more (or less) tasks must be introduced during New Equipment Training (NET) to accommodate changes in system processes and procedures. The preferred software solution must readily accommodate development of Embedded Performance Support System (EPSS), providing immediate performance remediation and linkages to external/existing data repositories and emerging training simulation/stimulation systems. The underlying software code must allow for an efficient means of performing screen captures, replicating functionality, and developing Interactive Multimedia Instruction (IMI) distance learning products. The approved software solution, whether it is commercial or customized, must also be flexible enough to allow for the use of "over the shoulder" training applications, tele-classroom delivery,

and virtual instruction to individual soldiers, units and schoolhouses of the objective force. Again, this initially appears unrelated to the ERP decision at hand, but experience has shown the ability to satisfy training objectives is clearly influenced by the technical complexities and proprietary characteristics of the software.

c. System of Systems: Aside from the functional interoperability advantages or disadvantages each option presents, the full depth and breadth of the training impact must be evaluated. For example, given the aforementioned training implications to the primary systems being considered for ERP (e.g., GCSS-A), what are the 2nd and 3rd level effects to existing (and under development) training products supporting legacy (ULLS, SARSS, SAMS, SPBS-R) and/or other emerging systems (MTS, TC-AIMS II, FBCB2, CSSCS)? This obviously involves assessing to what extent the commercial ERP or alternative Army customized solution results in changes to ASAT tasks, lesson plans, programs of instruction (POIs), TSPs, Soldier Training Publications (STPs), simulation interfaces, distance learning IMI products, technical manuals, and the vast array of other training products/systems currently being used by units and institutional schools. This is not to say the scope of training changes is necessarily the overriding factor...the aggregate benefits in functionality may outweigh the collective impact to training...but the final ERP decision must include a succinct training integration strategy that specifies how adjustments to existing/evolving training products (for all affected systems) will be funded and cohesively developed, with minimal disruption to the field.

2. Summary: Both the commercial ERP and Army customized option present significant training development challenges. The decision as to which is best lies primarily with the option best suited to provide the Army with systems comprised of increased software functionality, but decreased training complexity. This can be achieved by ensuring combat, materiel, training and simulation developers collaboratively focus on spiral development processes, leverage funding, and horizontally/vertically integrate CSS tactics, techniques and procedures...both within and amongst systems. In support of this effort, CASCOM has initiated a Virtual Planning, Operations, Rehearsal, Training and Simulations (VPORTS) program...providing a platform for full, ongoing DTLOMS integration...and it envision this effort will greatly enhance follow-on development of whatever ERP solution is approved.

3. POC: CASCOM-TD (SID), CW5 Conway 5-1653 or conwayp@lee.army.mil

ATCL-S April 6, 2002

EXHIBIT XIII - OFFICE TRADOC SYSTEM MANAGER FOR THE COMBAT SERVICE SUPPORT CONTROL SYSTEM (CSSCS) COMMENTS ON THE ADOPTION OF A COMMERCIAL ERP PRODUCT

1. CSSCS is dependent on a variety of systems for the source data required to assess the Maneuver Sustainment status of any Army mission force it is supporting. Unfortunately, there is no "one common data structure" for CSSCS to access. Consequently it is very difficult to interoperate with all of the systems having data needed to support CSSCS, and in fact we have not been able to accomplish this formidable task.

2. If ERP is having success with WLMP at the wholesale level, then it may be extendable to the tactical level where it could provide effective interoperability with CSSCS & ABCS. This means that the CSS community could be in a better position to effectively contribute to the determination of Combat Power for the Warfighter.

3. We recommend that a prototype ERP tactical system be developed within one year, in parallel with ongoing GCSS-A / STAMIS development. At the end of this period a comparative evaluation can be made to decide whether an ERP solution or GCSS-A custom software or a combination of the two offers the best acquisition path forward for the Army.

EXHIBIT XIV - TRW STUDY EVALUATION SUMMARY

The scoring results from the evaluation procedures produced the following detail data across the evaluation criteria categories as shown in the table below. To review the detailed results of TRW's effort see Appendix C of their study.

Sub-criteria Scoring Final Results

Criteria Category	Sub-criteria	Weight	x	Score	=	Weighted Score
Functionality	Maintenance Requirements	80	x	99.51	=	79.6
	KPPs	20	x	96.00	=	19.2
	Subtotal	100				98.8
Adaptability	Business Process User Acceptance	25	x	77.63	=	19.4
	Configurable for Tactical Org	25	x	93.75	=	23.4
	Configurable for Tactical Comm	25	x	57.69	=	14.4
	Implementation Success	25	x	50.00	=	12.5
	Subtotal	100				69.7
Productivity	Ease of Use	25	x	64.33	=	16.1
	User Tailorable	25	x	77.71	=	19.4
	Data Entry Effort	25	x	73.71	=	18.4
	Training	25	x	95.00	=	23.8
	Subtotal	100				77.7
Usability	User Performance	40	x	71.36	=	28.5
	System Performance	30	x	90.00	=	27.0
	Reliability	30	x	85.00	=	25.5
	Subtotal	100				81.0
Flexibility/ Scaleability	Growth	40	x	60.00	=	24.0
	Use with Other Applications	40	x	90.00	=	36.0
	Organization Change	20	x	75.00	=	15.0
	Subtotal	100				75.0
Maintainability	User Account Maintenance	30	x	80.00	=	24.0
	License Maintenance	30	x	90.00	=	27.0
	Version Upgrade Maintenance	40	x	65.00	=	26.0
	Subtotal	100				77.0
	Total					81.6

The final score of 81.6 exceeds the threshold score of 70 by 11.4 units. No single subcriteria category scored less than 50%; therefore the score of 81.6 represents the SAP product score for this evaluation.

The Functionality Criteria measures SAP's ability to meet the requirements via out of the box capabilities, with customization, or by using third-party vendor software - not

how long it would take to implement them. The Functionality Criteria weighted score is 24.7 which is based on an unweighted score of almost 99%; this indicates that this product can technically meet the requirements.

The Adaptability Criteria weighted score of 14.0 (based on an unweighted score of almost 70%) represents the lowest score across all criteria categories. Contributors to this overall score include Configurable for Tactical Organization, Configurable for Tactical Communications, and Implementation Success. SAP scored close to 94% for split operations and tactical organization. Although a Commander cannot dynamically press a button to initiate a split operations organization, SAP has the underlying mechanism to support the split operations concept. The Configurable for Tactical Communications Subcriteria tried to be comprehensive in evaluating the SAP product. This subcriteria category used ORD requirements to assess the product. Since the ORD did not identify specific communication systems that the GCSS-A Maintenance Module needs to use, a very conservative approach was taken to evaluate the product. This approach included evaluating the product against existing radios such as EPLRS and SINCGARS and against future radios such as JTRS and future systems such as CAISI. SAP did not score well in meeting requirements for the low bandwidth tactical radios; however one point of note is that other ERP systems would also score poorly in this area as well as web-based systems. The Implementation Success Subcriteria provided the lowest score for this category with a score of 50%. Again a conservative approach was taken to evaluate SAP against the subcriteria by assessing it against current TRW development budgets and schedule. Using these values to score this subcriteria may not be a valid measure of success. This strict interpretation of implementation success does not account for SAP use across other GCSS-A/T modules that can be supported with the product; since the focus of this study is on the Maintenance Module and not GCSS-A/T as a system. A system wide assessment may show that SAP is a good return on investment for several modules.

The Productivity Subcriteria category produced a weighted score of 11.7 which is based on this category receiving an unweighted score of 78%. This category depended heavily on results from a User Jury who was responsible for evaluating a demonstration of a SAP maintenance system via a questionnaire. The scoring for this category was different for the two User Jury groups. The participants in the two groups had a broad range of ground and aviation maintenance experience and were of various ranks from warrant officers to Lieutenant Colonels. The difference between the two groups was that the first group had knowledge of GCSS-A/T. Many in this first group were members of the JAD or supported the program directly as part of the program office. The second group had no direct experience with GCSS-A/T except for two individuals. One observation made is that the first group with GCSS-A/T experience seemed to bring their knowledge of GCSS-A/T to the demonstration and this knowledge prevented them from being objective in their responses to the questionnaire. Their questions during the demonstration reflected risk areas that were outside of the scope of the demonstration. The second group gave higher scores in each of the Productivity Subcriteria categories than the first group. Early on, the second group was told to focus on the demonstration and not be concerned with implementation issues such as blueprinting, tactical communications, or interfacing to legacy systems. Since the samples were small in each

group, it was decided that all scores would be counted towards the final score. The score for this category represents a conservative score and could be higher if only the second group of User Jury results were used in the evaluation.

The Usability subcriteria category produced a score of 12.2. which is based on a category unweighted score of 81%. The System Performance and Reliability Subcriteria scored high in this category; since SAP is able to meet or exceed the reliability and availability requirements for the Maintenance Module. The User Performance Subcriteria produced a score of approximately 71% which is obtained solely from the User Jury questionnaire results. As mentioned in the paragraph on the Productivity Criteria category, this score represents a conservative score; since the second User Jury results were higher than the first by about ten points.

The Flexibility/Scaleability Subcriteria category produced a score of 11.3 which is based on a category unweighted score of 75%. The Use with Other Applications and Organization Change Subcriteria scored high in this category. SAP is able to interface easily with other applications and systems due to its layered implementation and adherence to standards. It also provides capabilities to easily modify the existing organization. The Growth Subcriteria scored low with an unweighted score of 60%. The reason for this low score is that once the SAP system is configured, process flow changes may be difficult to implement. Changes at the SAP module level can be accommodated easily; however, if the changes are made at a high level, the system may need to be re-blueprinted and reconfigured. Another problem that may arise is the transition from the initial system to the new system. If the new process change affects the definition of the data types, the transition may need to include mapping of the existing data to the new system. The low score of 60% was assigned due to SAP's inflexibility to change; but it should be pointed out that this problem is only a potential risk. This problem may not surface if the initial system is configured and blueprinted correctly.

The Maintainability Subcriteria category produced a score of 7.7 which is based on a category unweighted score of 77 %. The User Account Maintenance and License Maintenance scored high in this category; since SAP provides easy maintenance of user accounts with automated scripts for multiple adds and deletes. It also provides the feature to set user IDs and access profiles to expire at certain dates; thereby allowing the generation of status reports that indicate user license expiration. The Version Upgrade Maintenance Subcriteria scored low with an unweighted score of 65%. This score was assigned; since it may be a difficult process to upgrade an existing system to a new version of SAP. Similar to the Growth Subcriteria, this is a potential problem only and depends on the initial implementation of the SAP system. If the initial system is highly customized to include an extensive use of ABAP code, this special code requires compatibility checkout with the new version upgrade system before the upgrade is made. A worse case scenario would be if a capability not in the SAP system is added with the use of external code. If an upgrade version now included that capability, a decision would have to be made on which capability to use - the one embedded in SAP or the specially-designed code. The system implications could be extensive with conflicts to data between the similar functions.

Overall, this evaluation shows that SAP is a strong product and it is technically feasible to use SAP for the GCSS-A/T Maintenance Module. The study also identified several potential risk areas including tactical communications, flexibility/growth, and version upgrades. None of these areas are high enough in risk to the point that the product is not recommended. These are potential problems to be aware of if a decision is made to proceed with a SAP implementation. TRW strongly suggests that any subcriteria category that scored less than 60% be reviewed by the GCSS-A/T Program Office as candidates for further analysis.

EVALUATION OBSERVATIONS

Additional observations surfaced during the evaluation process. One observation is that the GCSS-A/T acquisition model is not suited for SAP implementation. The current implementation of GCSS-A/T is a module at a time with select interfaces to other modules left as an interface to be determined in the future. The SAP solution provides functionality across many of the GCSS-A/T modules, not just the Maintenance Module functionality. It is not cost efficient to build a Maintenance Module SAP system that interfaces to other legacy modules or development modules and then later in the future subsume the legacy/development module functionality back into the SAP system. A detailed implementation plan that identifies the members of the blueprinting team and their decision making authority, the scope of the SAP system functionality, the schedule of interfaces to legacy/developmental systems, and the transition plan for legacy systems upgrade is highly recommended.

SAP invests close to a billion dollars a year on product improvement. It continuously adds modules to provide new functionality for enterprise systems. During the period of this evaluation, new modules for a mobile sales force were developed and a new business area in mobile computing was assembled. A future objective of SAP is to provide embedded diagnostics capability reporting. All of this new functionality can be of benefit to GCSS-A/T and should be reviewed in the months ahead.

SAP consultants were used to support this technical evaluation. They are extremely knowledgeable on their product and are aware of future capabilities being considered for implementation. They are able to tap into the corporate knowledge base of experts and help resolve issues early. This study has shown that the use of SAP consultants will help mitigate risk areas in any future SAP implementation.

EXHIBIT XV - TRW COMMENTS FOR THIS AOA

TRW was requested to provide positive comments on their present custom development effort so this AoA would have a balanced debate on both alternatives. TRW's comments, with some small editorial changes, follow:

- The current, custom effort is building web-based, enterprise software, to the Army's specification. The development process is defining new business processes and will achieve most of the enterprise goals the Army has stated and all that are specified in the current requirements. This is not legacy software warmed over. While not as radical as a commercial ERP, perhaps, it will make the transition to the new system far easier. (Advantage custom)

- Custom software will precisely meet the Army's stated requirements without gaps. ERPs, by their nature, come with gaps in functionality that must be addressed. This is an unknown cost for the ERP and can be expected to be expensive. (Advantage custom)

- Communications requirements are not neutral to this discussion. COTS ERPs require good communication. or they can't work. The custom approach will, by design, have the capabiltiy to continue operations in the Army's anticipated near-term communications environment. (Advantage custom)

- The current program's funding profile is based upon the custom approach, but may not support a COTS ERP implementation (which needs more up front funding). The required budget adjustments are likely to delay the project. (Advantage custom, assuming the delay is a bad thing)

- A COTS ERP, for all its logistical horsepower, is not likely to support the full CSS scope of the Army's stated GCSS-Army requirements. The custom approach is being designed modularly to handle the full requirement. (Advantage custom)

- Interface design and maintenance is a complex problem, regardless the technical solution. This is not an area of strength for ERPs which are complex and highly proprietary. The custom approach is applying mature, proven, open standard, commercial techniques to this problem. In theory, the custom approach will deliver a more flexible solution that is more maintainable. (Advantage custom)

- The Army has not stepped up to the plate to provide the project governance required for a successful ERP project. The current approach is executable and will succeed within the current oversight. (Advantage custom)

Some details:

1. The body of requirements defined by the Army for GCSS-Army, while a comprehensive description of required capabilities, does not consist of implementation-level requirements in the sense software engineers need. The requirements require further analysis and decomposition to achieve an understandable, logical (to a computer programmer), implementable-in-software level of detail. Under the current development approach, TRW, CASCOM JAD, LOGSA, AAA, and the PM shop have devised a Business Process Reengineering methodology that is, at once, redesigning logistical processes and decomposing the requirements into the implementable state. Custom software development, whether "modular" or not, needs such a process. The current BPR/RAAD/JAD process (our term for it) works well and is one of the success stories of the current effort. It is a direct consequence of the decision to build custom software.

The fruit of the current process is a set of Software Requirement Specifications (SRS) which contain the detailed information needed by the developers to code the "to be" processes. These SRS' will, by definition, be the embodiment of the meaning and intent of the Army's requirements. The resultant software will be very specific to Army work processes and the work soldiers do. If we do this right, there will be no gaps in functionality and the software will be very intuitive and easy to train. (Our experience with the SPR Module, which is currently in Software Acceptance Testing, bears this out.)

2. There is a perception that the current development process is merely warming over the ULLS-G/SAMS-1 requirements. THIS IS NOT TRUE. The BPR/RAAD/JAD process takes the existing processes of Army maintenance as a starting point, takes them completely apart in order to understand why they are the way they are, then crafts new "to be" processes. While it is a fact that not every data entry task changes - remember that the MNT and SPR modules support data entry duties - many of the processes change fundamentally. For example, the legacy systems had no way to track maintenance actions and cost by end item - a required capability to support commercial-style Total Cost of Ownership maintenance. The new MNT Module will take the field with this capability built in. In fact, most of the so-called "best business practices" touted by the ERP companies will be achieved by the enterprise design of the custom modules. However, the implementation of these practices will not be generalized across a broad industry and customer base, such as those supported by ERPs. It will be very specific to the US Army and how the Army works. This is arguably an advantage as it incorporates all the "uniqueness" of the Army - all the public law, Congressional guidance, military terminology, organizational structures, need for task force and split ops, etc.

3. An ERP implementation needs a "discovery process" similar to the BPR/RAAD/JAD process during the blue printing phase. However, instead of being a relatively unconstrained process (with custom development we are limited only by common sense and the art of the possible), the defintion of the "to be" is constrained by the capablites of the ERP software. This is one of the important differences. Under the current effort, TRW can build whatever is defined - no gaps in functionality. The ERP is somewhat limited in that it can only implement within its capabilities. By definition there will be gaps in functionality - a difference between what is wanted and what the ERP software can do. This issue has to be addressed in virtually every ERP implementation.

The shortcomings (gaps) of the ERP software can be grouped into three categories - 1) the provided functionality is "good enough" and the Army can get along without the fine points; 2) the provided functionality is not good enough and the Army will need to build a "splice" of custom code into the ERP (a capability which is supported by ERPs); or 3) the provided functionality is not good enough and the shortfall is large enough or important enough to justify the addition of "bolt on" software or even another COTS package to fill the large gap. Again, virtually every ERP implementation confronts this problem to one degree or another. These categories will not exist for the custom developed software or we will not pass our operational testing regimen.

4. A disadvantage of the ERP is that the shortcomings do not become obvious until the blue printing process is underway. In effect, the Army will have already made a substantial investment before it discovers these limitations. As blue printing progresses, more and more of the gaps will be discovered. It is difficult to estimate the cost of the solutions until all the gaps are discovered and understood, which is well into the process. The addition of a significant third party product to fill a mission critical gap can be a large cost.

5. It is true that the leading ERP packages are mature products and contain within them solutions for most of the business problems specified for GCSS-Army to solve. For example, most support the use of small computing devices (handheld computers) for certain applications. The Army is interested in similar applications. In a sense, under the custom development, we are inventing these capabilities, which induces a certain element of risk. We have to take the requirements through the BPR process, cross-fertilize the group with an understanding of the technology and how it might be used, then draw from them the refined processes and requirements. Then we can build it. As stated above, chances are a vanilla version (built to meet the general needs of the ERP's larger customer base) already exists in the ERP and can be configured. The difference is the specificity of the resultant software to soldiers' work. The ERP will be general purpose, but perhaps good enough. The custom software will be dead on or it won't survive Government testing.

6. The major design constraint for this program is the communications infrastructure. Under the current effort, we have been instructed to assume no more communications capability than exists today. To design a web-based system that can operate in three states (no comms, intermittent comms, or network comms) requires ingenuity and the creative application of technology. We believe we have designed a system that can get the job done, using proven, mainstream techniques. We have grappled with and solved the problem of data synchronization in the various operational modes. We designed for the constraint.

The leading ERP packages are not designed to function well in this environment. They are built around a very centralized system architecture and gain much of their performance from being connected. Commercial firms do not constrain themselves by communications. If a high benefit system need more comms, which are relatively cheap

in the commercial world, a business justification is made and the comms are provided. This is the environment for which ERPs are optimized. They do have certain capabilities to deploy in different ways, but there are always limitations that stem from their basic design. These limitations are a high risk area in the SAP studies and bear significant weight. Communications IS NOT neutral, I argue, because we are designing for the constraint.

7. To argue the reverse, if additional communications are suddenly made available, the ERP's performance might be assured, and the requirement for the comm constrained custom solution obviated. While this is true, I must also point out that the custom design could also take advantage of better comms. If they were provided, the system would be much simpler and less expensive. Architecturally, we could centralize things more, as the ERPs like to do. Only in this case, would communications be neutral for analysis. The decision would then depend on other factors. But this is not the case.

8. The current modular approach was driven at least partly by available funding. Obviously, project execution is constructed to fit the PM's funding. The current funding is already planned and in the POM. As we have discussed, the funding profile for ERP projects is heavily weighted in the first 18-24 months, which is very different from the current funding profile. Changing this for an ERP implementation, within the confines of DoD PPBES, will be a herculean task not quickly accomplished. The potential to lose a lot of time is quite large. What is the delay worth?

9. Remember that GCSS-Army, in its final form, is intended to be a Combat Service Support system, not just a logistics system. Under the custom development we will flexibly fold in the differing requirements of the other CSS domains - each of which is at a different state of maturity, by the way - in an orderly, planned way. Each of the other CSS domains has its own feeder systems, many of them Joint systems (the personnel and medical systems, for example). These other systems are not and, I argue, will never be within the Army's control. Each of these CSS systems and the logistics systems contain readiness data of interest to commanders. It is not reasonable to assume that the required integration of these dissimilar systems can be accomplished by an ERP, no matter how many of the functional modules are employed. Neither is it reasonable to assume that there is a simple way to implement TMIP (one of the medical systems) within the ERP. Nor should one assume that the Joint medical community will automatically agree to do so. The kind of flexibility required to deal with this problem is not a strength of ERPs, but it is part and parcel to the custom approach.

10. Interfaces are also a significant issue. It is not possible to convert the entire Army to a new automated system overnight. Therefore, whatever new system is rolled out will have to be prepared to work in a mixed environment. The classic example is a deployment that includes some units on the legacy systems and some on the new system. The commanders in charge of that force need and expect their critical readiness information and will not tolerate its absence. In the current, custom approach, we are making provision for interfaces as a part of our design. Because we intend to migrate data from the legacy systems, we understand their data and how it flows. In fact, we've already

mapped most of it into our database (for SPR and MNT). We understand both the data flows that exist today and the record layouts of the files. Like the communications issue, we have accepted this as a constraint and are designing the capability to handle the mixed environment described above.

An ERP system will have to do likewise. This is an area of significant risk for ERP implementations. Because they have to support all of their functional modules, the leading ERP products are supported by very large databases. I believe SAP uses something like 3000 tables, compared to a couple hundred in our current custom enterprise model. Understanding a database this large well enough to map the legacy data into it is a daunting challenge. The transactions required for the ERP application to understand and use the data must also be understood, which requires special knowledge of the ERP product - hence the importance of consultants. This is another area of painstaking, detailed, expensive work that can be a major cost driver for an ERP project. While this is also a significant effort of the custom development, we have greater freedom to design for the requirement and a much more streamlined database design, which typically puts a lid on effort and cost.

Another aspect of the interface issue is so-called "enterprise integration". ERPs would seem to have a tremendous advantage in this area. By their nature, they integrate many of the typical functions of an enterprise because they have the required data structures and processes within them. However, this is only true if the enterprise choses to implement the appropriate modules. For example, Army logistics will not be integrated with Army personnel unless they are implemented within one ERP product. The Joint personnel community has already decided that the new DoD personnel system will be used by all services and will be based on PeopleSoft's ERP. If one assumes PeopleSoft is not in the running for Army logistics (I've never heard it mentioned), it seems unlikely that the two functions will be "integrated" for the Army enterprise. An exchange of data between PeopleSoft and the logistics ERP is possible and will be required for any logistics processes involving personnel information. This exchange is an interface, which must be built.

Even within Army logistics there will be requirements to deal with DLA's BSM, AMC's WLMP, AMC legacy systems not included in WLMP, the Army Battle Command Systems (ABCS), GCCS, and host of others. The point is that the "integrated enterprise" vision is like the Objective Force - it is a future, conceptual view, a goal toward which the Army should strive. The reality of the situation is that not even an ERP implementation will achieve the vision by itself. Too much is beyond the Army's control. For the foreseeable future, whatever GCSS-Army solutions are employed, the requirement will exist to exchange data with many other systems.

To further complicate things, most of the important "other systems" are also changing, making the data exchanges fluid over time. In this environment, closely coupled systems, like ERPs, are more expensive to maintain than loosely coupled systems. In fact, AMC's Commodity Command Standard System (CCSS), which is a marvlous engineering accomplishment, is an example of a closely coupled system that has proven too

monolithic and expensive to maintain for many of the same reasons. By contrast, our custom developed approach to GCSS-A/T recognizes this fluidity. Our custom software is highly modular and object oriented, partly because we have anticipated this requirement to change. Our web-based approach uses open, commercial standards intended to deal with problems of this type. ERPs, by contrast, are highly proprietary. While there is no magic solution that makes the problem go completely away, our flexibility and maintainability, we believe, are advantages in the "real" environment.

11. Lastly, I'd like to discuss project governance. For the current effort, we have an acquisition strategy that has been through a highly regulated decision process and was approved. We have a competitively awarded contract for the required scope of work. We have a development approach that is working. (I would never say this is a slam-dunk, because we struggle with problems large and small every day.) We are making measurable progress. The leadership structure knows its roles and who can decide what is pretty well understood. We know where to go when we need guidance or help. While it may be that some elements of this are less than ideal, it is well understood and has been working for some time.

In several of the recent ERP meetings, including some of the SAP meetings, the ERP purveyors have warned that project governance is a critical element for ERP implementation success. What is needed is a "process owner" for each process to be implemented in the ERP, who is available to the project and empowered to act. Without the ability to make decisions about how processes are to be implemented in hours or days, schedules are delayed and costs escalate dramatically. (The marching army must be fed, even when marching in place.) No such structure exists today; not for Army logistics and certainly not for CSS. The way of things is to make decisions by gaining the concensus of key senior leaders. Concensus takes lots of staff work and lots of time. If I understand the guidance enumerated above, this is a recipe for failure in the ERP world.

If the Army elects to go with a COTS ERP, what will change? I see no momentum toward stepping up to this challenge. At least the current effort can succeed within the current governance structure.

EXHIBIT XVI - PWC COMMENTS ON THIS AOA

1. PwC Consulting believes that for an organization to achieve ERP requires a process view of the entire enterprise that is integrated into a single software solution running on a single database. PwC Consulting does not believe that a suite of custom built GCSS-A/T programs that send/receive data to the WLMP SAP system constitutes a "single ERP tool for the Army".

2. PwC Consulting recommends that some of the lower-level functional requirements captured in the ORD are not applicable to an ERP solution and would need to be revisited during the ERP "blueprint" phase.

3. Extending the WLMP system to cover the tactical army was not recommended due primarily to functional differences between wholesale and retail operations.

4. PwC Consulting recommends the following approach: Adopt the Tactical ERP solution for deployable tactical (to include split ops) applications (not an ERP "purchased service") for the Army's installation/"retention boxes" level of supply and maintenance operations and the Army's deployable tactical operations and interface them with the Army's WLMP service contract.

5. The PwC Consulting study concluded that the Army can implement SAP within the GCSS-A/T schedule – i.e. all modules ready for fielding no later than 1Q 2005.

6. SAP provide a core suite of multiple business processes "out of the box" and infinite variations on core business processes via programming "enhancements" to the core SAP system. Organizations implementing SAP can choose from one of the many pre-delivered business processes and add customer specific "enhancements" as required. As such, the business processes inherent in SAP are mandated to some degree, however they are rarely inflexible or unable to be modified. In the business areas of maintenance, supply & management, PwC Consulting recommends that SAP delivered business processes are a good fit with the Army's requirements. PwC Consulting recommends that Army adopt the SAP business processes and that is fundamentally a change management issue.

7. PwC Consulting does NOT recommend the Army adopt SAP unless it has a centralized data model and sufficient communications capability to ensure the real-time integration benefits of SAP are realized.

PwC Consulting - Examples of Possible Process Changes with COTS ERP:

The following are a few potential process changes that I could foresee. It is important to note that SAP usually does not "require" process changes. It is highly flexible software that can be configured to adapt to almost any process flow. The advantage is that it offers process flows which are based upon the best business practices currently available. Like it's other customers, the Army would need to determine (via the process

workshops during the blueprinting phase) which processes it would like to change to fit the "vanilla" version of the SAP software and which processes SAP would need to be reconfigured to fit the Army version.

Having said that these are a few processes which I think will be effected:

1) The entire Document Control register process goes away. There will no longer be a need to manually capture the "audit" trail of the paper and transactions.

2) Since history for all equipment will be online and readily available. Most SAP customers take advantage and re-orient their mechanics to look for other occurrences of the same equipment problems prior to starting their repair work. Obviously this is not required and should be used judiciously, however when faced with an equipment failure the mechanic now has at their disposal all similar occurrences of that failure, or all occurrences of failure on that type of equipment. They can then create their work order based upon previously executed workorders saving data entry time, and also model their repair activities based upon those done to correct the problem previously. This is also very useful in the planning of maintenance.

3) All users can go online for their schedule. Every inspector, mechanic, shop clerk, etc... can view and respond to their specific workload without requiring upfront interaction with their supervisors.

4) Quality inspection efforts and scheduling can be triggered by action in a work order. When a given task is performed in a work order this can automatically schedule and give details to an inspector on the required role in the process. Thus reducing equipment downtime due to the need to pass paperwork or diskettes to initiate these activities.

5) Issuing of parts to work orders can be fully automated. If a part is requisitioned based upon a need of a specific work order. When that part is received no paperwork is required. It automatically is released against that workorder and the mechanic knows immediately the required part is available to continue the repair of the equipment.

6) The area of part ordering, receipt, issuing is a potential for a great advance in the Army processes. Many companies have moved to a "kitting" process whereby the mechanics never need to travel to a central place for their parts. The parts are collated and "kitted" then delivered to the mechanics. This maximizes the mechanics "wrench time".

EXHIBIT XVII - PWC STUDY SUMMARY

PWC Fit-Gap Analysis Summary

Fit-Gap Analysis	Number of Requirements	(% of Total Requirements)
Requires SAP Software Configuration Only	1,299	79%
Requires An Interface To Another System	113	7%
Requires A 3rd Party Product(s)	32	2%
Requires Reporting / Form Development	135	8%
Requires Custom Enhancement To The SAP Software (Development)	62	4%
TOTAL	**1,641**	**100%**

Note: Appendix A of the PwC study contains the detailed results of their requirements evaluation.

PwC stated they did not see any reason for the perpetuation of custom developed systems, nor did they see requirements that cannot be met by an SAP implementation. GCSS-A/T must choose between embracing ERP technology with its advantages and challenges, or recreating the current basic systems and gaining only limited technological benefits through computer system modernization using custom development.
PwC Consulting believes that the major challenges to the Army in implementing SAP are in the areas of project sponsorship, project oversight and organizational change. The SAP software, along with system-enabled Business Process Reengineering (BPR), is capable of providing the Army with an integrated logistics system to meet and exceed the GCSS-A/T vision.

There are three areas where the Army's requirements diverge from standard SAP operation:

1) **Split-Based Operations.** The requirements call for the support of Split-Based Operations at all echelons, applications and sites with the ability to "maintain the transfer capability to download and upload selected unit data when elements are conducting Split-Based operations".
2) **Disconnected Operations.** The Army requirement states "The GCSS-Army will have safeguards and redundancies so that the loss of a single system component or the temporary interruption of network communications does not render the system inoperable locally".
3) **Task Force Operations.** There are multiple requirements for GCSS-A/T modules to support task force organization. Task forces are created for a specific mission and time period and are comprised of

units or components of units from the existing Army, Army Reserve (AR) and Army National Guard (ANG) structure.

The system requirements for Split-Based, Disconnected and Task Force Operations are derived from a mindset that the data and the system are co-located on the same physical hardware box, and that the system, data and hardware are all transported together. Each system contains certain functionality and a sub set of data for the unit and can therefore operate stand-alone. Any data modified or created on the system must eventually be transferred, aggregated and re-integrated with other STAMIS systems to provide overall system functionality. Importantly, the impact of the loss of any one individual system is largely restricted to the unit that system is supporting.

The limitations of this current model are considerable, as each stand-alone installation cannot readily access data either up or down the organization and the Army cannot manage its logistics operations from an enterprise perspective. We feel that the challenge of providing operations in a deployed, or "disconnected" environment is fundamentally a communications problem, which can be largely overcome using commercially available wireless technology.

The above issues must be addressed regardless of the path the Army chooses to follow in the GCSS-A/T program. Industry best business practice based Business Process Reengineering (BPR) must be performed and the logistics Telecomm infrastructure must be upgraded for any solution to be successful. It is not possible to achieve the current vision and goals of GCSS-A/T using the traditional project processes, basing the system upon current business processes and implementing that system using the existing Army technology infrastructure.

The study found that existing SAP software and telecommunication technology is available to address the Army's transformation goals. The SAP system in combination with system-enabled Business Process Reengineering can provide the Army with a complete business automation system that supports its logistics vision.

Risks

PwC Consulting has identified several potential risks to GCSS-A/T SAP implementation. The following figure details implementation risks by area, with potential mitigation strategies.

Potential Risks to GCSS-A/T

Area	Risk	Mitigating Actions
Project Governance	GCSS-A/T implementation timeline not in line with project scope, resources, and funding.	Use the expertise of the system integration team to provide the necessary time to provide for full implementation within the SAP methodology.
	GCSS-A/T Project Charter is not created and approved at the beginning of the project including governance structure, roles and responsibilities, etc.	Require that the development of the GCSS-A/T Project Charter be listed as an activity in the Project Plan. Develop approval procedures for acceptance of the Project Charter.

Area	Risk	Mitigating Actions
	Unclear scope statement regarding specifically what is in and out of scope could result in cost overruns.	Develop formal scope statement with sign-off by appropriate parties. Procedures for amending scope should be in place and adhered to. Project Charter should be updated to include formal scope of project, project governance, business impact of project, business objectives, etc.
	Non-alignment of Project Management approach to SAP methodology.	The SAP methodology is a proven project management tool which, when followed, allows for sufficient time for each phase of the implementation (i.e. design, testing, training, etc.)
Fielding	Fielding will not be completed as scheduled, due to delays at installation.	Fielding should be based on Army order of Precedence (AOP) to field the highest priority installations first but should be flexible enough to maximize efficiency of fielding teams ,
	Additional Data Conversion effort is required at installation, negatively impacting the fielding schedule.	Data should be cleansed prior to fielding. Pre-fielding checks should be performed on data to be transferred. Data conversion should not be able to slow the fielding schedule by allowing for a manual data conversion effort.
	User uptake of the new system is reduced due to lack of adequate skills transfer to Army personnel or reluctance to adopt the new system.	Precede the fielding effort with a comprehensive communications program and pre-training CBT's. Transition to the new system as fully and quickly as possible, minimizing the period of dual system operation.
Organization Impact	GCSS-A/T is not prepared for the organizational impact of implementing an ERP system.	The organizational impact of implementing an ERP system is lessened through training and appropriate change management activities. The development of the training strategy and change management strategy should begin at the start of the project. The success of these activities should be measured throughout the implementation.
	The GCSS-A/T SAP users do not understand the impact of the SAP implementation on their current jobs.	The specific jobs are considered roles in SAP. When the roles are established each of the users who will fulfill the specific roles should be informed. A flow of the current process and a flow of the new ERP process should be available for all users to understand the impact of the SAP system on the way they perform their duties.
	No formal communication plan is established.	Establish a team responsible for developing the formal communications plan. Empower the communications team to maximize the use of communication vehicles.
	Target audiences are not known.	Perform a communications diagnostic to determine the target audiences.

Area	Risk	Mitigating Actions
	End-users are not prepared for the inherent changes that occur in ERP implementations.	Communicate messages to the target audiences throughout the implementation project. Support of the system and process changes that occur is directly related to communications.
Change Management	No formal Change Management program initiated at the Senior Executive GCSS-A/T level to ensure effective implementation support.	Institute a formal Change Management program at the Senior Executive GCSS-A/T level to identify the need and method of introducing change in the GCSS-A/T business processes.
	Change Management is not recognized as an important part of the overall GCSS-A/T Project.	Change Management must be a top-down activity with the support of the Project Sponsor and other high-ranking officers and civilians.
	Change Management not included in overall project plan.	Change management activities must begin at the Blueprint phase of the SAP implementation project. These activities must be budgeted for and included in the overall project.
Business Drivers and Measurements	SAP implementation project cannot be measured as delivering the intended value and results.	Consider a *Benefits Realization* approach that includes benefit definition, quantification, monitoring and assigning benefit accountability to the appropriate stakeholders.
Project Team Training	GCSS-Army Project Team members are not properly trained in specific SAP modules.	Training schedule should be established for each project team member. Each team member should be required to follow the training schedule.
	Project team training is not in line with overall project implementation plan.	Project team training activities should be included in the overall project plan so that the time for these activities will be appropriately allocated.
	Knowledge transfer from the system integrator project team to the GCSS-A/T project team does not occur.	The knowledge transfer from the system integrator project team to the GCSS-Army project team should be monitored throughout the implementation. Communication of the quality of knowledge transfer should be included in status reports.
End User Training and Documentation	Training is not provided in a timely manner.	Time the training in accordance with the fielding strategy. Training tasks should appear on the full implementation project plan.
	Trainees do not receive needed training.	Training will be available in a several ways, i.e. web-based training, CBT's, instructor-led classroom training, etc. Trainees should have the opportunity to gain training relative to their subject area. Tracking of trainees through the appropriate web-based, CBT's and instructor-led training is essential.

Area	Risk	Mitigating Actions
	Training roles are not properly identified for training classes.	The definition of the process roles and identification of the individuals fulfilling these roles should begin during the Blueprint phase
	Errors in documentation.	Documentation should be available online as well as in hard copy. Online documentation will be more current than hardcopy documentation. All training material must go through a thorough quality assurance phase.
	Training materials are not prepared by experts in SAP.	The training materials will only be as good as the knowledge of the developers. The individuals preparing the training materials must have knowledge of SAP as well as Army practices and procedures.
Testing	Test plan is not coordinated early in the project.	Software test planning coordination should take place immediately upon contract award.
	Schedule delay due to long sign off process.	Software test planning should be in conjunction with streamlined Army guidelines, and continue throughout the program life cycle.
Post Implementation Service and Support	Response to user problems and difficulties will not be acceptable.	Establish a Center of Excellence with sufficient capacity to support the SAP system across the Army.
	The impact on user's missions/operations will not be considered when scheduling and performing system maintenance.	The CoE should have joint responsibility for system support and maintenance to remove potential schedule conflicts.
	System may not perform within an acceptable range.	The CoE should monitor system performance regularly and provide performance tuning and data archiving.
Technical Infrastructure	The technical infrastructure does not support the SAP system.	Telecommunications issue must be resolved to support the Web-based SAP system. Disaster Recovery plans should be created and tested on a regular basis.
Systems Development – Interfaces	Incomplete or old data is transferred from system to system and into the SAP system.	Move from the legacy STAMIS systems to the SAP system as quickly as possible to reduce the requirement for temporary interfaces.
	The cost of maintaining existing and developing new point to point interfaces significantly increases as web-based and state-of-the-art technology systems are added.	Leverage the existing SAP system (with its internal integration) in preference to creating new stand-alone systems.
	There is no consistent data extraction or error handling and recovery mechanism in place today	Minimize the amount of data transferred via interfaces where possible.

Area	Risk	Mitigating Actions
Systems Development – Data Conversion	Un-cleansed data will slow down the implementation. In addition, "bad" data that caused inaccurate information in the legacy system will do the same in the new system.	Ensure data cleansing prior to data conversion.
	Not having the same version of software at each installation can have disastrous results. New fields could potentially be added or data manipulated in a different way could result in data not loaded correctly or records being kicked out.	Allow for possible version discrepancies in the STAMIS systems and alternative (e.g. manual) data conversion strategies.
Systems Development – Reports and Forms	Spending significant development time and dollars on duplication of current reports.	Perform system enabled BPR to reduce the number of custom reports.
	Not taking advantage of built in reporting and information presentation capabilities.	Perform system enabled BPR to reduce the number of custom reports.
	Perpetuating "competing" sources of information.	Support a single system that contains one "version of the truth".
Systems Development – Enhancements	It takes more time and effort to continue to improve existing heavily maintained programs.	Reduce or eliminate the number of system enhancements.
	Significant time lag until those changes are fielded to all levels of the organization.	Reduce or eliminate the number of system enhancements.
	Make future system maintenance and upgrade efforts difficult or impossible via extensive system enhancements.	Reduce or eliminate the number of system enhancements and do not change the core SAP code.

Note: PwC is preparing an addendum to their report. They will be recommending that the Army provide more communications equipment to a SAP solution so users are always on-line. Simply, they do not recommend stand-alone operations.

EXHIBIT XVIII - CSC STUDY SUMMARY

Detailed results of the CSC requirements analysis is contained in Exhibit C of their study. CSC found that a SAP software solution could fulfill 77 percent of the tactical Army functional requirements. For the 23 percent of the requirements in the "Meets with Extension" category, the following bullets show the reasons that the CSC Team placed them in this category, and the number of requirements for each reason.

- Army unique, requires Blueprinting to determine match, processes that are not comparable to industry, or items that will require some additional effort to meet the specific Army requirement -- 88
- Satisfied by a bolt-on product -- 30
- Requirement is too broad to determine all requirements can be met -- 19
- Addressed by EAI -- 27
- Requirement will be replaced by ERP implementation -- 12

CSC states that based upon the functional requirements, Team CSC's concept architecture (based on SAP products) will satisfy the needs of both the tactical environment and the MACOMs. The following points had a significant impact on the concept design effort of the SAP Architecture:

- Fifty percent of the tactical Army's requirements were required at the Support Battalion level, which must be able to deploy and work without real-time communications capabilities.

- Team CSC then reviewed those high-level requirements to determine if they could be met by a software solution with a smaller footprint than mySAP. Team CSC concluded that several packages would be required to meet all of these requirements, such as maintenance, fleet management, and personnel system. The complexity of such a solution would have been greater than supporting multiple mySAP systems.

- Team CSC considered the value of a consistent work environment, whether in-garrison or deployed, and the desire for real-time, accurate information on readiness. This variable increased our desire to limit, as much as possible, the number of independent systems performing batch transfers. The readiness issue truly drives the goal to keep the number of mySAP environments to the required minimum. To address this issue, information must be accessed as quickly as possible at consolidated levels for each command level. Ideally, this requirement should be addressed in an integrated real-time environment.

CSC recommended bolt-on applications to SAP software to meet the Army's functional requirements in the following areas:

- Mobile computing integration. Symbol, Intermec, EPIC, and CIM are some of the options to address in the Army's Diagnostic Improvement Program (ADIP), warehouse management, and mobile computing requirements (mobile computing includes RF devices, PDAs, and computers with wireless connectivity).

- Document Management. Management of technical data such as service manuals, service bulletins. Documentum, Interleaf, and FileNet are examples of this type of software.

- Contract Management Software. Contract administration capability in a disconnected mode of operations rather than connecting to PADDS, PAI - IPRO and Prism are examples of this type of software.

- Enterprise Application Integration. Communication between mySAP environments (AMC to FORSCOM, for example) and communication with existing systems like DFAS and DLA. SeeBeyond will be used by WLMP and, therefore, could be leveraged for the tactical Army integration.

- Credit Card Processing. Provides a processing capability for receiving authorization from credit card companies (particularly in support of the IMPAC card).

CSC recommended that the GCSS-A/T be developed using an "Integrated Enterprise Approach" based on SAP products. The Integrated Enterprise Approach represents the development and deployment of an integrated enterprise solution built in parallel as GCSS-Army Tier II (Redefined) business and functional processes and a GCSS-Army Tier I deployable/split-base operations support package. AMC's WLMP modernization will continue as planned, as a second development effort is initiated to build an installation logistics support capability within a MACOM, and a third effort is initiated to develop the deployable/split-base operations support package. The MACOM initiative will leverage the baseline model of WLMP and will use a command prototyping methodology (involving the MACOM in the prototype development) to create an installation support capability for all units within the command. The GCSS-Army Tier I deployable/split-base operations package will replace legacy systems. It will use an integrated approach and prescriptive business processes and architecture when a unit or "slice" of a unit deploys. Business process reengineering across all organizations will be closely coordinated and will result in a single Army Enterprise that links all solutions using advanced technology.

Consistent with the GCSS-Army Tactical/Sustainment program goals, Tier II (redefined) processes are the integration of current wholesale logistics business processes with current field or retail logistics business processes using the WLMP ERP model as a baseline. It is designed to support all units on an installation with a seamless logistics chain from vendor to soldier. Using SAP prepackaged applications, this COA will develop a MACOM prototype for testing and development. This capability will be rolled

out simultaneously to all installations within a MACOM. The ERP uses SAP application functionality combined with industry best practices. It provides the advantages of the speed of a packaged solution and the openness and flexibility of a tailored in-house solution. A SAP-based solution will link related areas, speeding up and simplifying business procedures. All functions will enable access to a shared central database, eliminating data redundancy and relaying data immediately to where it is required. Data is entered only once and is immediately available to other applications throughout the enterprise. This eliminates the associated costs and labor that are required to maintain and operate mixed-application environments and their interfaces.

For the tactical TOE units, GCSS-Army Tier I (Redefined) will re-scope the tactical logistics processes to support necessary deployment/split-base operations. This system will be the "mySAPTM in a box" system. The Deployment/Split-base Operations Package is geared toward sustaining a Brigade Combat Team. The package will enable the extraction of data for use in a disconnected, deployed operation and will then synchronize data with its Master Dataset upon either reconnection or return to home station. This system is best described as "mySAPTM in a box" and is based on a pre-configured SAP system in a deployable shelter that can be loaded with data before departure. It will be Web capable and will offer modernized hardware, communications technology, and business processes to the soldier. The screens and processes will be consistent with those used at home station, thus minimizing the impact to the soldier and overall logistics execution.

RISK

The course of action offers an implementation strategy that manages risk while effecting the greatest degree of change to the Army, through the use of industry best practices. It also uses a rapid prototyping process of development and involvement of the user community to serve as a proof of principle for the Army before fielding. Data migration from WLMP and legacy systems into the ERP environment is required. Using the Integrated Enterprise approach in this COA, CCSS, SDS, and their associated logistics business processes will be replaced in accordance with the WLMP schedule. The sustainment of the legacy STAMIS and their associated logistics business processes will be necessary until completion of the development and deployment of the MACOM ERP and deployable/split-based operations packages. This includes ULLS-G/A/S-4, SAMS, SARSS, ILAP, EMIS, SPBS-R, SAAS, and other associated manual functional requirements. The enterprise development will include end-to-end reengineering and will leverage the blueprinting and reengineering of the AMC portions of the Army's logistics processes. Development will include a prototype proof-of-concept approach, and fielding will be by MACOM, until complete. Single Stock Fund and National Maintenance Management objectives will continue to be met using middleware with the legacy STAMIS systems, until replaced by the ERP.

DTLOMS Impacts

Common Doctrine, Training, Leadership, Organizations, Materiel, and Soldiers (DTLOMS)Impacts:

Doctrine

Risk: The implementation of an ERP requires numerous, far-reaching, multifunctional, and time-phased changes to policy, regulations, doctrine, and Tactics, Techniques, and Procedures (TTP). These changes will parallel and, of necessity, occur at the same time as those already being driven by Objective Force and Joint Vision 2010. For example, it is envisioned that a strategic-tactical integration of the Army's logistics business processes will cause the need to redefine the roles and responsibilities at echelons above brigade, and that current wholesale and retail logistics regulations will be rewritten to accommodate the end-to-end solution.

Risk Mitigation: The Army has established procedures for changing its policies, regulations, doctrine, and TTP. However, the complexity, and interrelated nature of the changes require a top-level integrated approach. Such an approach ensures that the change process considers all possible cause-and-effect consequences. Therefore, the formation of an Integrated Product Team (IPT) under the auspices of the Vice Chief of Staff of the Army (VCSA) is recommended. This IPT will be composed of two sub-IPTs - one for policy and regulation chaired by the HQDA Assistant Deputy Chief of Staff for Logistics (HQ ADCSLOG) and the other for doctrine and TTP chaired by the TRADOC Deputy Chief of Staff for Doctrine (DCSDOC).

Training

Risk: The changes to policy, regulations, doctrine, and TTP will require extensive changes to Army-wide civilian and military training on the business processes that are affected by the ERP solution. Also, because of the implementation timelines of each COA, much of this training will need to be written and conducted in a time-phased, concurrent process. Further, the implementation of a "mySAPä in a box" approach will require an intensive training effort for all affected soldiers and for supporting Department of the Army civilians and foreign nationals.

Risk Mitigation: ERP is a commercial product with extensive existing training courses, materials, and techniques. It is imperative for the Army to embrace and leverage these resources. Therefore, the Team recommends that the Army create an integrated Army/commercial team, composed of training experts from both, to rapidly develop and field the required training.

Leadership

Risk: The business process changes that are created and enabled by the ERP solution will cascade through the Army's chain of command, resulting in the creation of new command and control capabilities and TTP involving anticipation and planning optimization. The result of this will be the need to develop leaders who are committed to the change, armed

with new ways of leading and supervising. Further, unless controlled by leaders at all levels, the risk caused by such a significant change can cause a state of chaos until the change becomes stabilized. (For further discussion of an Organizational Change Management strategy that can be implemented upon the decision to go to a COTS-based ERP solution, see section 5.7 of this chapter.)

Risk Mitigation: An ERP training program will provide Army leaders of all branches and at all levels with the basic knowledge required to function in the enterprise environment proposed by each COA. However, this will not sufficiently address the deep cultural changes required to properly train these leaders to use the anticipation and planning optimization capabilities that are inherent in the solution. Participation by selected leaders in educational and professional organizations such as APICS, the Council of Logistics Management, the Wharton School of the University of Pennsylvania, and the Supply Chain Council will facilitate interaction with, and mentoring from, commercial ERP practitioners.

Organizations

Risk: Efficiencies that are derived from the ERP solution may result in substantial changes to CSS organizations (both management and operational) and force structure. These changes may require redefinitions of missions, roles, and functions at all levels. Also, Manpower Requirement Criteria (MARC) updates or adjustments and skill migration may be required.

Risk Mitigation: The Army's procedures for changing its organizational designs and force structure are complex, time-consuming, and not sufficiently agile enough to meet the needs of the changes resulting from implementation of any of the three COAs. Therefore, Team CSC recommends the formation of an IPT to address the impacts on organizational design and force structure, ideally to be directed by the TRADOC DCSDOC.

Materiel

Risk: Materiel impacts will be limited to the hardware and software that are associated with the ERP solution proposed by each COA.

Risk Mitigation: The Army has already proven its ability to field new systems hardware. The software to support the ERP solution is available now, is already fully tested, and has been deployed successfully throughout large and oftentimes complex corporate enterprises. However, it is recommended that the Army develop a strategy to ensure that it continues to capitalize on emerging technological advancements in its sustainment of the ERP solution.

Soldiers

Risk: Doctrinal, training, organizational, and material changes will all combine to create tremendous change and turbulence for the soldier.

Risk Mitigation: Effective two-way communication and training are the keys to mitigating these impacts. The soldier must understand and accept the need for the changes and must receive sufficient training to successfully perform the mission.

In the Integrated Enterprise Approach COA, CSC said there are no unique considerations for doctrinal change. The upgrade of current systems to modernized platforms at the full ERP implementation will require that the field be trained on Web-enabled, GUI, object-oriented systems while also maintaining currency on the existing logistics systems. Training on the new business practices will occur as the single enterprise system MACOM slices are deployed. Before the full ERP implementation, the Army's leadership can be trained in the business management techniques inherent to enterprise management. Some level of modernization of the GCSS-Army Tier I and WLMP system platforms will provide users with improved capability in the near-term until the fielding of new hardware systems. Finally, there will be a compelling requirement for implementing a change management program to make more manageable the magnitude of the change.

EXHIBIT XIX - CASCOM SUBJECTIVE EVALATION OF PERFORMANCE OBJECTIVES FOR EACH ALTERNATIVE

Responding Organization: CASCOM ISD

Name of Subject Matter Expert / Date: CW3 Ronald LaShomb, 920B / 15 MAR 02

1. References:

- Computer Sciences Corporation (CSC) report, "Army Tactical - Strategic Logistics Integration," dated 19 Feb 2001.
- Price Waterhouse Coopers (PWC) Consulting report, "GCSS-A/T SAP Implementation Analysis," dated December 2001.
- TRW Incorporated report, "GCSS-A/T SAP Enterprise Resource Planning (ERP) Evaluation Final Report," dated 17 January 2002.

2. Subject matter experts (SMEs) performing this evaluation should have three main qualifications:

- A knowledge of the strengths and weaknesses of the legacy STAMIS systems;
- A understanding of what the vision/goals are for Combat Service Support (CSS) automated information systems and what we expect to gain from a new system; and
- Understand what an Enterprise Resource Planning (ERP) system is and have enough background to be able to evaluate between alternatives.

3. Performance objectives had to be identified that were mutually exclusive and collectively exhaustive to provide distinctions between the alternatives. Further, the number of performance objectives was reduced to those of greatest importance. Many military requirements were assumed achievable by both alternatives. The performance objectives are stated as end results, not means to the ends. Performance is to be rated on the capability of each alternative to achieve objectives that the warfighter would find measures of success. SMEs will have to give special consideration to how objectives are affected if an associated baseline requirement is not a "fit" with only a SAP software configuration.

4. Each SME should rate the capability of each alternative to meet each objective. Additionally, each SME is asked to rank the 15 objectives from most important (1) to least important (15). By averaging the rankings of each objective (criterion), the weight of each objective will be determined. The scoring system is:

- Exceeds the warfighter requirement - Points 3
- Satisfactory fulfillment of the warfighter requirement - Points 2
- Fails to meet the warfighter requirement - Points 1

5. <u>Performance objectives</u>:

a. IMPROVED STAFF COORDINATION - Provides integrated ERP capabilities that comply with the JV 2010 Focused Logistics requirement for integrated logistics chains focused on customer service and system readiness - driven by unique military requirements (i.e., move, man, sustain, fix, arm, fuel)

Score for Custom Software: _3____
Score for Commercial Software: __2___
Objective Ranking: __14___

b. IMPROVED WEAPONS PLATFORM AVAILABILITY - Effective integration of weapon system-focused support to provide total combat logistics; availability of mission equipment instead of distinct elements (parts, maintenance, data, etc.)

Score for Custom Software: __2___
Score for Commercial Software: _1____
Objective Ranking: __1___

c. IMPROVED SYSTEM INTEROPERABILITY - Provides the best design for interoperability with wholesale systems and, as required, the integration of wholesale processes; seamless flow of information between interfacing information systems

Score for Custom Software: ___2__
Score for Commercial Software: _2____
Objective Ranking: _3____

d. IMPROVED LOGISTICS PLANNING - Improves the process for planning and execution of logistics operations

Score for Custom Software: _3____
Score for Commercial Software: _2____
Objective Ranking: __13___

e. IMPROVED LOGISTICS SOLDIER PRODUCTIVITY - Improves operational support with more effective applications or software tools for use by the soldier

Score for Custom Software: __2___
Score for Commercial Software: ____1_
Objective Ranking: _11____

f. IMPROVED LOGISTIC SYSTEM RESPONSIVENESS - Improves responsiveness of the overall supply chain on the battlefield

Score for Custom Software: ___3__
Score for Commercial Software: ____2_
Objective Ranking: __2___

g. IMPROVED LOGISTICS SITUATIONAL AWARENESS - Improves logistics situational awareness; improved means of providing the combatant command logistics information

Score for Custom Software: __2___

Score for Commercial Software: ___1__
Objective Ranking: _10____

h. REDUCED THEATER FOOTPRINT - Reduces the theater footprint by improved asset visibility; provides real-time control over logistics assets
Score for Custom Software: ____2_
Score for Commercial Software: _1____
Objective Ranking: __5___

i. REDUCED MEAN TIME TO REPAIR - Speeds maintenance with improved processes; reduces response time with automated work orders and the ready availability of on-line technical data
Score for Custom Software: _2____
Score for Commercial Software: __3___
Objective Ranking: _12____

j. IMPROVED SYSTEM DEPLOYABILITY AND MOBILITY - Reduces the system footprint by limiting its system components required forward on the battlefield for operations
Score for Custom Software: ___2__
Score for Commercial Software: _2____
Objective Ranking: __9___

k. REDUCED ADMINISTRATIVE BURDEN - Reduces paper transactions through the use of modernized information systems
Score for Custom Software: ___2__
Score for Commercial Software: __2___
Objective Ranking: _15____

l. IMPROVED COMMUNICATIONS FLEXIBILITY - Has the ability to support the mission using existing/planned communications infrastructure
Score for Custom Software: _3____
Score for Commercial Software: _2____
Objective Ranking: _4____

m. VARIABLE SYSTEM CONFIGURATIONS - Has the ability to operate in stand-alone mode when communications are not available
Score for Custom Software: __2___
Score for Commercial Software: ____2_
Objective Ranking: _6____

n. EASIER TO USE - Simpler operational procedures lessens the number of training hours that have to be allocated to train a soldier
Score for Custom Software: __2___
Score for Commercial Software: __1___
Objective Ranking: __7___

o. MORE EFFICIENT OPERATIONS - Reduced manpower requirement for system operations; aggregate number of enlisted soldiers added or removed from the total Army when GCSS-A/T is operational as compared to today

Score for Custom Software: __2___
Score for Commercial Software: ___1__
Objective Ranking: __8___

Remarks: View the national level (formerly wholesale) and the tactical level (Army retail) as two distinct enterprises. What the tactical army needs is a business to business (B2B) solution set that will leverage the increased responsiveness of WLMP. We do not necessarily need a proprietary "75% solution" ERP product.

It makes sense for the users of archaic wholesale systems such as CCSS, HAS, and SDS to embrace the SAP/ R3 solution. The culture shock and associated Change Management processes are a part of the investment that a well managed civilian work force can tolerate. Those who can adapt will succeed; those who cannot will quit or be terminated. What will be painful for the national level workforce would be disaster for our soldiers.

EXHIBIT XX - CASCOM SUBJECTIVE EVALATION OF PERFORMANCE OBJECTIVES FOR EACH ALTERNATIVE

1. Responding organization: CASCOM ISD
2. Name of subject matter expert / Date: CW4 Antonio Ocasio / 15 March 2002

3. Guidelines: Each SME should rate the capability of each alternative to meet each objective. Additionally, each SME is asked to rank the 15 objectives from most important (1) to least important (15). By averaging the rankings of each objective (criterion), the weight of each objective will be determined. The scoring system is:

- Exceeds the war fighter requirement - Points 3
- Satisfactory fulfillment of the war fighter requirement - Points 2
- Fails to meet the war fighter requirement - Points 1

4. Performance objectives:

	PERFORMANCE OBJECTIVE	CUSTOM SOFTWARE	COMMERCIAL SOFTWARE	OBJECTIVE RANKING
A.	IMPROVED STAFF COORDINATION - Provides integrated ERP capabilities that comply with the JV 2010 Focused Logistics requirement for integrated logistics chains focused on customer service and system readiness - driven by unique military requirements (i.e.,	3	2	14
B.	IMPROVED WEAPONS PLATFORM AVAILABILITY - Effective integration of weapon system-focused support to provide total combat logistics, availability of mission equipment instead of distinct elements (parts, maintenance, data, etc.)	3	2	1
C.	IMPROVED SYSTEM INTEROPERABILITY - Provides the best design for interoperability with wholesale systems and, as required, the integration of wholesale processes, seamless flow of information between interfacing information systems	2	2	3
D.	IMPROVED LOGISTICS PLANNING - Improves the process for planning and execution of logistics operations	2	2	9
E.	IMPROVED LOGISTICS SOLDIER PRODUCTIVITY - Improves operational support with more effective applications or software tools for use by the soldier	3	1	11
F.	IMPROVED LOGISTIC SYSTEM RESPONSIVENESS - Improves responsiveness of the overall supply chain on the battlefield	2	2	4
G.	IMPROVED LOGISTICS SITUATIONAL AWARENESS - Improves logistics situational awareness; improved means of providing the combatant command logistics information	3	2	5
H.	REDUCED THEATER FOOTPRINT - Reduces the theater footprint by improved asset visibility; provides real-time control over logistics assets	3	2	8

I.	REDUCED MEAN TIME TO REPAIR - Speeds maintenance with improved processes, reduces response time with automated work orders and the ready availability of on-line technical data	2	2	12
J.	IMPROVED SYSTEM DEPLOYABILITY AND MOBILITY - Reduces the system footprint by limiting its system components required forward on the battlefield for operations	2	2	7
K.	REDUCED ADMINISTRATIVE BURDEN - Reduces paper transactions through the use of modernized information systems	3	2	15
L.	IMPROVED COMMUNICATIONS FLEXIBILITY - Has the ability to support the mission using existing/planned communications infrastructure	2	1	2
M.	VARIABLE SYSTEM CONFIGURATIONS - Has the ability to operate in stand-alone mode when communications are not available	2	1	6
N.	EASIER TO USE - Simpler operational procedures lessens the number of training hours that have to be allocated to train a soldier	2	1	13
O.	MORE EFFICIENT OPERATIONS - Reduced manpower requirement for system operations, aggregate number of enlisted soldiers added or removed from the total Army when GCSS-A/T is operational as compared to today	3	1	10

5. Performance Objectives: Many of the listed performance objectives are not mutually exclusive – making them difficult to rank. By far the prime objective is IMPROVED WEAPONS PLATFORM AVAILABILITY. IMPROVED COMMUNICATIONS FLEXIBILITY optimizes the flow of transactions and data. This objective enables IMPROVED SYSTEM INTEROPERABILITY resulting in IMPROVED LOGISTIC SYSTEM RESPONSIVENESS. The natural byproduct of these improvements is a keener AWARENESS OF THE LOGISTICS SITUATION and the potential for more efficient management. Operationally and tactically significant is the ability to DEPLOY, BE MOBILE and be ABLE TO OPERATE IN A STAND-ALONE MODE. In combination, these capabilities will allow for the efficient management of logistics assets and gradually REDUCE THE THEATER FOOTPRINT. The remaining performance objectives flow from the first eight.

6. Having reviewed the three studies (CSC/TRW/PwC) provided, I took the opportunity to provide a practical, "ground zero" user level perspective. I will not revisit the DTLOMS since it has been adequately covered by other elements within CASCOM. The following is offered:

- The authors recommend SAP as a viable solution but CAVEAT their recommendations with "must do" riders such as
  - Corporate Priority
  - Change Management
  - Enhanced Communications

Translation: Implementation leaves little to no room for error. In reality, we have not done well at all trying to field systems or perform conversions error free.

- SAP appears to be an expensive open-ended proposition.

- The SAP blanket can effectively be tossed over a commercial "brick and mortar" business activity. The wholesale system (WLMP) seems like a good fit. Even TRADOC with intense but predictable training scenarios and a well developed communications infrastructure could potentially benefit from such a system. Toss this blanket over a fluid and ever changing tactical Army with varying levels of communications capabilities and the prospects diminish significantly.

- The human element is being glossed over as "culture shock". It is much more; one prime example was Ft Rucker's conversion from PRISM to the STAMIS suite and Single Stock Fund Milestone I&II. An entire population of GS civilians and contractors went from PRISM experts to SARSS/SAMS/ULLS novices overnight. The cost to recover was significant.

7. The only practical approach would be the following:

Approach One - Extend the WLMP "services" down to the Army's installation/"retention boxes" level of supply and maintenance operations and interface with "custom built" (non- Enterprise Resource Planning (ERP)) solution for deployable tactical (to include split operations) applications.

EXHIBIT XXI - CASCOM SUBJECTIVE EVALATION OF PERFORMANCE OBJECTIVES FOR EACH ALTERNATIVE

1. Responding Organization: CASCOM Ordnance

2. Name of Subject Matter Expert / Date: CW4 Moore, Keith A. / 15 March 2002

3. References:

- Computer Sciences Corporation (CSC) report, "Army Tactical - Strategic Logistics Integration," dated 19 Feb 2001.
- Price Waterhouse Coopers (PWC) Consulting report, "GCSS-A/T SAP Implementation Analysis," dated December 2001.
- TRW Incorporated report, "GCSS-A/T SAP Enterprise Resource Planning (ERP) Evaluation Final Report," dated 17 January 2002.

4. Subject matter experts (SMEs) performing this evaluation should have three main qualifications:

- A knowledge of the strengths and weaknesses of the legacy STAMIS systems;
- A understanding of what the vision/goals are for Combat Service Support (CSS) automated information systems and what we expect to gain from a new system; and
- Understand what an Enterprise Resource Planning (ERP) system is and have enough background to be able to evaluate between alternatives.

5. Performance objectives had to be identified that were mutually exclusive and collectively exhaustive to provide distinctions between the alternatives. Further, the number of performance objectives was reduced to those of greatest importance. Many military requirements were assumed achievable by both alternatives. The performance objectives are stated as end results, not means to the ends. Performance is to be rated on the capability of each alternative to achieve objectives that the warfighter would find measures of success. SMEs will have to give special consideration to how objectives are affected if an associated baseline requirement is not a "fit" with only a SAP software configuration.

6. Each SME should rate the capability of each alternative to meet each objective. Additionally, each SME is asked to rank the 15 objectives from most important (1) to least important (15). By averaging the rankings of each objective (criterion), the weight of each objective will be determined. The scoring system is:

- Exceeds the warfighter requirement - Points 3
- Satisfactory fulfillment of the warfighter requirement - Points 2
- Fails to meet the warfighter requirement - Points 1

7. Performance objectives:

a. IMPROVED STAFF COORDINATION - Provides integrated ERP capabilities that comply with the JV 2010 Focused Logistics requirement for integrated logistics chains focused on customer service and system readiness - driven by unique military requirements (i.e., move, man, sustain, fix, arm, fuel)

Score for Custom Software: __2___
Score for Commercial Software: __3__
Objective Ranking: __1___

b. IMPROVED WEAPONS PLATFORM AVAILABILITY - Effective integration of weapon system-focused support to provide total combat logistics; availability of mission equipment instead of distinct elements (parts, maintenance, data, etc.)

Score for Custom Software: __2___
Score for Commercial Software: __3__
Objective Ranking: __5___

c. IMPROVED SYSTEM INTEROPERABILITY - Provides the best design for interoperability with wholesale systems and, as required, the integration of wholesale processes; seamless flow of information between interfacing information systems

Score for Custom Software: __2___
Score for Commercial Software: __3__
Objective Ranking: __11___

d. IMPROVED LOGISTICS PLANNING - Improves the process for planning and execution of logistics operations

Score for Custom Software: __2___
Score for Commercial Software: __3__
Objective Ranking: __7___

e. IMPROVED LOGISTICS SOLDIER PRODUCTIVITY - Improves operational support with more effective applications or software tools for use by the soldier

Score for Custom Software: __3___
Score for Commercial Software: __2__
Objective Ranking: __10___

f. IMPROVED LOGISTIC SYSTEM RESPONSIVENESS - Improves responsiveness of the overall supply chain on the battlefield

Score for Custom Software: __2__
Score for Commercial Software: __3__
Objective Ranking: __6___

g. IMPROVED LOGISTICS SITUATIONAL AWARENESS - Improves logistics situational awareness; improved means of providing the combatant command logistics information

Score for Custom Software: __3___
Score for Commercial Software: __2__
Objective Ranking: __4___

h. REDUCED THEATER FOOTPRINT - Reduces the theater footprint by improved asset visibility; provides real-time control over logistics assets
Score for Custom Software: __2___
Score for Commercial Software: __3__
Objective Ranking: __8___

i. REDUCED MEAN TIME TO REPAIR - Speeds maintenance with improved processes; reduces response time with automated work orders and the ready availability of on-line technical data
Score for Custom Software: __2___
Score for Commercial Software: __3__
Objective Ranking: __9___

j. IMPROVED SYSTEM DEPLOYABILITY AND MOBILITY - Reduces the system footprint by limiting its system components required forward on the battlefield for operations
Score for Custom Software: __2___
Score for Commercial Software: __2__
Objective Ranking: __15___

k. REDUCED ADMINISTRATIVE BURDEN - Reduces paper transactions through the use of modernized information systems
Score for Custom Software: __2___
Score for Commercial Software: __2__
Objective Ranking: __12___

l. IMPROVED COMMUNICATIONS FLEXIBILITY - Has the ability to support the mission using existing/planned communications infrastructure
Score for Custom Software: __2___
Score for Commercial Software: __2__
Objective Ranking: __3___

m. VARIABLE SYSTEM CONFIGURATIONS - Has the ability to operate in stand-alone mode when communications are not available
Score for Custom Software: __2___
Score for Commercial Software: __2__
Objective Ranking: __2___

n. EASIER TO USE - Simpler operational procedures lessens the number of training hours that have to be allocated to train a soldier
Score for Custom Software: __2___

Score for Commercial Software: __2__
Objective Ranking: __13___

o. MORE EFFICIENT OPERATIONS - Reduced manpower requirement for system operations; aggregate number of enlisted soldiers added or removed from the total Army when GCSS-A/T is operational as compared to today

Score for Custom Software: __2___
Score for Commercial Software: __2__
Objective Ranking: __14___

EXHIBIT XXII - PMO GCSS-A/T SUBJECTIVE EVALUATION OF PERFORMANCE OBJECTIVES FOR EACH ALTERNATIVE

Responding Organization: USAISEC Fort Lee Engineering Office

Name of Subject Matter Expert / Date: Ronald R. Michon / 17 Mar 02

1. References:

- Computer Sciences Corporation (CSC) report, "Army Tactical - Strategic Logistics Integration," dated 19 Feb 2001.
- Price Waterhouse Coopers (PWC) Consulting report, "GCSS-A/T SAP Implementation Analysis," dated December 2001.
- TRW Incorporated report, "GCSS-A/T SAP Enterprise Resource Planning (ERP) Evaluation Final Report," dated 17 January 2002.

2. Subject matter experts (SMEs) performing this evaluation should have three main qualifications:

- A knowledge of the strengths and weaknesses of the legacy STAMIS systems;
- A understanding of what the vision/goals are for Combat Service Support (CSS) automated information systems and what we expect to gain from a new system; and
- Understand what an Enterprise Resource Planning (ERP) system is and have enough background to be able to evaluate between alternatives.

3. Performance objectives had to be identified that were mutually exclusive and collectively exhaustive to provide distinctions between the alternatives. Further, the number of performance objectives was reduced to those of greatest importance. Many military requirements were assumed achievable by both alternatives. The performance objectives are stated as end results, not means to the ends. Performance is to be rated on the capability of each alternative to achieve objectives that the warfighter would find measures of success. SMEs will have to give special consideration to how objectives are affected if an associated baseline requirement is not a "fit" with only a SAP software configuration.

4. Each SME should rate the capability of each alternative to meet each objective. Additionally, each SME is asked to rank the 15 objectives from most important (1) to least important (15). By averaging the rankings of each objective (criterion), the weight of each objective will be determined. The scoring system is:

- Exceeds the warfighter requirement - Points 3
- Satisfactory fulfillment of the warfighter requirement - Points 2
- Fails to meet the warfighter requirement - Points 1

5. Performance objectives:

a. IMPROVED STAFF COORDINATION - Provides integrated ERP capabilities that comply with the JV 2010 Focused Logistics requirement for integrated logistics chains focused on customer service and system readiness - driven by unique military requirements (i.e., move, man, sustain, fix, arm, fuel)

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __5___

b. IMPROVED WEAPONS PLATFORM AVAILABILITY - Effective integration of weapon system-focused support to provide total combat logistics; availability of mission equipment instead of distinct elements (parts, maintenance, data, etc.)

Score for Custom Software: __2___
Score for Commercial Software: ___1__
Objective Ranking: ___6__

c. IMPROVED SYSTEM INTEROPERABILITY - Provides the best design for interoperability with wholesale systems and, as required, the integration of wholesale processes; seamless flow of information between interfacing information systems

Score for Custom Software: __1
Score for Commercial Software: __2___
Objective Ranking: __4___

d. IMPROVED LOGISTICS PLANNING - Improves the process for planning and execution of logistics operations

Score for Custom Software: ____2_
Score for Commercial Software: ____2_
Objective Ranking: __7___

e. IMPROVED LOGISTICS SOLDIER PRODUCTIVITY - Improves operational support with more effective applications or software tools for use by the soldier

Score for Custom Software: ___2__
Score for Commercial Software: __2___
Objective Ranking: __1___

f. IMPROVED LOGISTIC SYSTEM RESPONSIVENESS - Improves responsiveness of the overall supply chain on the battlefield

Score for Custom Software: __2___
Score for Commercial Software: __3___
Objective Ranking: ___8__

g. IMPROVED LOGISTICS SITUATIONAL AWARENESS - Improves logistics situational awareness; improved means of providing the combatant command logistics information

Score for Custom Software: __2___
Score for Commercial Software: ___2__
Objective Ranking: _9____

h. REDUCED THEATER FOOTPRINT - Reduces the theater footprint by improved asset visibility; provides real-time control over logistics assets
Score for Custom Software: ___2__
Score for Commercial Software: __2___
Objective Ranking: __11___

i. REDUCED MEAN TIME TO REPAIR - Speeds maintenance with improved processes; reduces response time with automated work orders and the ready availability of on-line technical data
Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __10___

j. IMPROVED SYSTEM DEPLOYABILITY AND MOBILITY - Reduces the system footprint by limiting its system components required forward on the battlefield for operations
Score for Custom Software: ___2__
Score for Commercial Software: __1___
Objective Ranking: __2___

k. REDUCED ADMINISTRATIVE BURDEN - Reduces paper transactions through the use of modernized information systems
Score for Custom Software: ___2__
Score for Commercial Software: ___2__
Objective Ranking: ___14__

l. IMPROVED COMMUNICATIONS FLEXIBILITY - Has the ability to support the mission using existing/planned communications infrastructure
Score for Custom Software: __2___
Score for Commercial Software: __1___
Objective Ranking: __12___

m. VARIABLE SYSTEM CONFIGURATIONS - Has the ability to operate in stand-alone mode when communications are not available
Score for Custom Software: __2___
Score for Commercial Software: __1___
Objective Ranking: __3___

n. EASIER TO USE - Simpler operational procedures lessens the number of training hours that have to be allocated to train a soldier
Score for Custom Software: __2__
Score for Commercial Software: __2__

Objective Ranking: __13__

o. MORE EFFICIENT OPERATIONS - Reduced manpower requirement for system operations; aggregate number of enlisted soldiers added or removed from the total Army when GCSS-A/T is operational as compared to today

Score for Custom Software: ___2__
Score for Commercial Software: __2__
Objective Ranking: __15__

Remarks:

_____
_____
_____
_____
_____

EXHIBIT XXIII - PMO GCSS-A/T SUBJECTIVE EVALUATION OF PERFORMANCE OBJECTIVES FOR EACH ALTERNATIVE

Responding Individual's Organization: PM LIS

Name of Subject Matter Expert / Date: MAJ Pat Flanders

1. References:

- Computer Sciences Corporation (CSC) report, "Army Tactical - Strategic Logistics Integration," dated 19 Feb 2001.
- Price Waterhouse Coopers (PWC) Consulting report, "GCSS-A/T SAP Implementation Analysis," dated December 2001.
- TRW Incorporated report, "GCSS-A/T SAP Enterprise Resource Planning (ERP) Evaluation Final Report," dated 17 January 2002.

2. Subject matter experts (SMEs) performing this evaluation should have three main qualifications:

- A knowledge of the strengths and weaknesses of the legacy STAMIS systems;
- A understanding of what the vision/goals are for Combat Service Support (CSS) automated information systems and what we expect to gain from a new system; and
- Understand what an Enterprise Resource Planning (ERP) system is and have enough background to be able to evaluate between alternatives.

3. Performance objectives had to be identified that were mutually exclusive and collectively exhaustive to provide distinctions between the alternatives. Further, the number of performance objectives was reduced to those of greatest importance. Many military requirements were assumed achievable by both alternatives. The performance objectives are stated as end results, not means to the ends. Performance is to be rated on the capability of each alternative to achieve objectives that the warfighter would find measures of success. SMEs will have to give special consideration to how objectives are affected if an associated baseline requirement is not a "fit" with only a SAP software configuration.

4. Each SME should rate the capability of each alternative to meet each objective. Additionally, each SME is asked to rank the 15 objectives from most important (1) to least important (15). By averaging the rankings of each objective (criterion), the weight of each objective will be determined. The scoring system is:

- Exceeds the warfighter requirement - Points 3
- Satisfactory fulfillment of the warfighter requirement - Points 2
- Fails to meet the warfighter requirement - Points 1

5. <u>Performance objectives</u>:

a. Provides integrated ERP capabilities that comply with the JV 2010 Focused Logistics requirement for integrated logistics chains focused on customer service and system readiness - driven by unique military requirements (i.e., move, man, sustain, fix, arm, fuel)

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __14___

b. Effective integration of weapon system-focused support to provide total combat logistics; availability of mission equipment instead of distinct elements (parts, maintenance, data, etc.)

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __3___

c. Provides the best design for interoperability with wholesale systems and, as required, the integration of wholesale processes

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: _11____

COMMENT: Close call, but I think "a wash."

d. Improves the process for planning and execution of logistics operations

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __5___

e. Improves operational support with more effective applications or software tools for use by the soldier

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: ___8__

f. Improves responsiveness of the overall supply chain on the battlefield

Score for Custom Software: _2____
Score for Commercial Software: __3___
Objective Ranking: __7___

g. Improves logistics situational awareness; improved means of providing the combatant command logistics information

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __4___

h. Reduces the theater footprint by improved asset visibility; provides real-time control over logistics assets

Score for Custom Software: __2___
Score for Commercial Software: ___2__
Objective Ranking: _13____

i. Speeds maintenance with improved processes; reduces response time with automated work orders and the ready availability of on-line technical data

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __6___

j. Reduces the logistics footprint by limiting its system components required forward on the battlefield for operations

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __15___

COMMENT: The same number of boxes are present in both situations except for BDE level servers (custom development requires these, if BN level COMMS are not available) and number of SATCOM systems is more than currently planned (for ERP).

k. Reduces paper transactions through the use of modernized information systems

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: __9___

l. Has the ability to support the mission using existing/planned communications infrastructure

Score for Custom Software: __3___
Score for Commercial Software: __2___
Objective Ranking: _12____

COMMENT: ERP will require some COMMS not currently planned.

m. Has the ability to operate in stand-alone mode when communications are not available

Score for Custom Software: __3___
Score for Commercial Software: __2___
Objective Ranking: __1___

n. Simpler operational procedures lessens the number of training hours that have to be allocated to train a soldier

Score for Custom Software: __2___
Score for Commercial Software: __2___
Objective Ranking: ___10__

o. Reduced manpower requirement for system operations; aggregate number of enlisted soldiers added or removed from the total Army when GCSS-A/T is operational as compared to today

Score for Custom Software: __2___
Score for Commercial Software: __3___
Objective Ranking: __2___

COMMENT: If we are to build a system with a standalone capability requiring servers to the BSA, then we ought to at least provide a system administrator.

Remarks:

The responses included in this survey are my own and in no way represent the opinions of the LIS Project Office.

I have assumed that in order to provide the standalone capability (which I see as a plus for modular development and a very high objective) I trade the ability to operate a modular solution in fully connected mode until WIN-T is fielded (so for trade off, I made system responsiveness the second highest objective).

I feel that items "l" and "m" are redundant so I purposely rated "l" low on the objective list.

EXHIBIT XXIV - AMC SUBJECTIVE EVALATION OF PERFORMANCE OBJECTIVES FOR EACH ALTERNATIVE

Responding Organization: AMC/WLMP

Name of Subject Matter Expert / Date: Larry Asch / 15 Mar 02

1. References:

- Computer Sciences Corporation (CSC) report, "Army Tactical - Strategic Logistics Integration," dated 19 Feb 2001.
- Price Waterhouse Coopers (PWC) Consulting report, "GCSS-A/T SAP Implementation Analysis," dated December 2001.
- TRW Incorporated report, "GCSS-A/T SAP Enterprise Resource Planning (ERP) Evaluation Final Report," dated 17 January 2002.

2. Subject matter experts (SMEs) performing this evaluation should have three main qualifications:

- A knowledge of the strengths and weaknesses of the legacy STAMIS systems;
- A understanding of what the vision/goals are for Combat Service Support (CSS) automated information systems and what we expect to gain from a new system; and
- Understand what an Enterprise Resource Planning (ERP) system is and have enough background to be able to evaluate between alternatives.

3. Performance objectives had to be identified that were mutually exclusive and collectively exhaustive to provide distinctions between the alternatives. Further, the number of performance objectives was reduced to those of greatest importance. Many military requirements were assumed achievable by both alternatives. The performance objectives are stated as end results, not means to the ends. Performance is to be rated on the capability of each alternative to achieve objectives that the warfighter would find measures of success. SMEs will have to give special consideration to how objectives are affected if an associated baseline requirement is not a "fit" with only a SAP software configuration.

4. Each SME should rate the capability of each alternative to meet each objective. Additionally, each SME is asked to rank the 15 objectives from most important (1) to least important (15). By averaging the rankings of each objective (criterion), the weight of each objective will be determined. The scoring system is:

- Exceeds the warfighter requirement - Points 3
- Satisfactory fulfillment of the warfighter requirement - Points 2
- Fails to meet the warfighter requirement - Points 1

5. <u>Performance objectives</u>:

a. Provides integrated ERP capabilities that comply with the JV 2010 Focused Logistics requirement for integrated logistics chains focused on customer service and system readiness - driven by unique military requirements (i.e., move, man, sustain, fix, arm, fuel)

Score for Custom Software: _1____
Score for Commercial Software: _3____
Objective Ranking: _2____

b. Effective integration of weapon system-focused support to provide total combat logistics; availability of mission equipment instead of distinct elements (parts, maintenance, data, etc.)

Score for Custom Software: _1____
Score for Commercial Software: _1____
Objective Ranking: __4___

c. Provides the best design for interoperability with wholesale systems and, as required, the integration of wholesale processes

Score for Custom Software: _1____
Score for Commercial Software: _3____
Objective Ranking: __3___

d. Improves the process for planning and execution of logistics operations

Score for Custom Software: _2____
Score for Commercial Software: _3____
Objective Ranking: _5____

e. Improves operational support with more effective applications or software tools for use by the soldier

Score for Custom Software: _2____
Score for Commercial Software: _3____
Objective Ranking: _6____

f. Improves responsiveness of the overall supply chain on the battlefield

Score for Custom Software: _2____
Score for Commercial Software: _3____
Objective Ranking: __1___

g. Improves logistics situational awareness; improved means of providing the combatant command logistics information

Score for Custom Software: _2____
Score for Commercial Software: _2____
Objective Ranking: _7____

h. Reduces the theater footprint by improved asset visibility; provides real-time control over logistics assets

Score for Custom Software: _2____
Score for Commercial Software: _2____
Objective Ranking: _10____

i. Speeds maintenance with improved processes; reduces response time with automated work orders and the ready availability of on-line technical data
Score for Custom Software: _2____
Score for Commercial Software: _2____
Objective Ranking: __8___

j. Reduces the logistics footprint by limiting its system components required forward on the battlefield for operations
Score for Custom Software: _2____
Score for Commercial Software: _2____
Objective Ranking: _9____

k. Reduces paper transactions through the use of modernized information systems
Score for Custom Software: _2____
Score for Commercial Software: _3____
Objective Ranking: _15____

l. Has the ability to support the mission using existing/planned communications infrastructure
Score for Custom Software: _3____
Score for Commercial Software: _2____
Objective Ranking: _13____

m. Has the ability to operate in stand-alone mode when communications are not available
Score for Custom Software: _3____
Score for Commercial Software: _1____
Objective Ranking: __12___

n. Simpler operational procedures lessens the number of training hours that have to be allocated to train a soldier
Score for Custom Software: _2____
Score for Commercial Software: _2____
Objective Ranking: __14___

o. Reduced manpower requirement for system operations; aggregate number of enlisted soldiers added or removed from the total Army when GCSS-A/T is operational as compared to today
Score for Custom Software: _2____
Score for Commercial Software: _3____
Objective Ranking: __11___

Remarks: Very difficult to rate these areas based on the limited information supplied.in the AoA and guidance on filling this evaluation form. Also would have preferred to have an area to put comments. This evaluation form and process makes it difficult to give an adequate recommendation to our leadership.

EXHIBIT XXV - AMC SUBJECTIVE EVALATION OF PERFORMANCE OBJECTIVES FOR EACH ALTERNATIVE

1. Responding organization: AMC

2. Name of subject matter expert / Date: Ed Shimko / 15 March 2002

3. Subject matter experts (SMEs) performing this evaluation should have three main qualifications:

- A knowledge of the strengths and weaknesses of the legacy STAMIS systems;
- A understanding of what the vision/goals are for Combat Service Support (CSS) automated information systems and what we expect to gain from a new system; and
- Understand what an Enterprise Resource Planning (ERP) system is and have enough background to be able to evaluate between alternatives.

4. Performance objectives had to be identified that were mutually exclusive and collectively exhaustive to provide distinctions between the alternatives. Further, the number of performance objectives was reduced to those of greatest importance. Many military requirements were assumed achievable by both alternatives. The performance objectives are stated as end results, not means to the ends. Performance is to be rated on the capability of each alternative to achieve objectives that the warfighter would find measures of success. SMEs will have to give special consideration to how objectives are affected if an associated baseline requirement is not a "fit" with only a SAP software configuration.

5. Each SME should rate the capability of each alternative to meet each objective. Additionally, each SME is asked to rank the 15 objectives from most important (1) to least important (15). By averaging the rankings of each objective (criterion), the weight of each objective will be determined. The scoring system is:

- Exceeds the warfighter requirement - Points 3
- Satisfactory fulfillment of the warfighter requirement - Points 2
- Fails to meet the warfighter requirement - Points 1

6. <u>Performance objectives</u>:

a. IMPROVED STAFF COORDINATION - Provides integrated ERP capabilities that comply with the JV 2010 Focused Logistics requirement for integrated logistics chains focused on customer service and system readiness - driven by unique military requirements (i.e., move, man, sustain, fix, arm, fuel)

Score for Custom Software: _3___
Score for Commercial Software: 1.5_____
Objective Ranking: _12____

b. IMPROVED WEAPONS PLATFORM AVAILABILITY - Effective integration of weapon system-focused support to provide total combat logistics; availability of mission equipment instead of distinct elements (parts, maintenance, data, etc.)

Score for Custom Software: _____3
Score for Commercial Software: __3___
Objective Ranking: _2____

c. IMPROVED SYSTEM INTEROPERABILITY - Provides the best design for interoperability with wholesale systems and, as required, the integration of wholesale processes; seamless flow of information between interfacing information systems

Score for Custom Software: _____2
Score for Commercial Software: __3___
Objective Ranking: __3___

d. IMPROVED LOGISTICS PLANNING - Improves the process for planning and execution of logistics operations

Score for Custom Software: _____3
Score for Commercial Software: __3___
Objective Ranking: ___4__

e. IMPROVED LOGISTICS SOLDIER PRODUCTIVITY - Improves operational support with more effective applications or software tools for use by the soldier

Score for Custom Software: _____3
Score for Commercial Software: __2___
Objective Ranking: ____13_

f. IMPROVED LOGISTIC SYSTEM RESPONSIVENESS - Improves responsiveness of the overall supply chain on the battlefield

Score for Custom Software: ___3__
Score for Commercial Software: 3_____
Objective Ranking: _____1

g. IMPROVED LOGISTICS SITUATIONAL AWARENESS - Improves logistics situational awareness; improved means of providing the combatant command logistics information

Score for Custom Software: _3___
Score for Commercial Software: _2____
Objective Ranking: _____5

h. REDUCED THEATER FOOTPRINT - Reduces the theater footprint by improved asset visibility; provides real-time control over logistics assets

Score for Custom Software: __3_
Score for Commercial Software: __2.5___
Objective Ranking: _____6

i. REDUCED MEAN TIME TO REPAIR - Speeds maintenance with improved processes; reduces response time with automated work orders and the ready availability of on-line technical data

Score for Custom Software: _3____
Score for Commercial Software: __3___
Objective Ranking: _____10

j. IMPROVED SYSTEM DEPLOYABILITY AND MOBILITY - Reduces the system footprint by limiting its system components required forward on the battlefield for operations

Score for Custom Software: ___3__
Score for Commercial Software: 2.5_
Objective Ranking: _____8

k. REDUCED ADMINISTRATIVE BURDEN - Reduces paper transactions through the use of modernized information systems

Score for Custom Software: _2___
Score for Commercial Software: __2___
Objective Ranking: _____15

l. IMPROVED COMMUNICATIONS FLEXIBILITY - Has the ability to support the mission using existing/planned communications infrastructure

Score for Custom Software: __3__
Score for Commercial Software: __2___
Objective Ranking: _____9

m. VARIABLE SYSTEM CONFIGURATIONS - Has the ability to operate in stand-alone mode when communications are not available

Score for Custom Software: __3___
Score for Commercial Software: __2___
Objective Ranking: _____7

n. EASIER TO USE - Simpler operational procedures lessens the number of training hours that have to be allocated to train a soldier

Score for Custom Software: __2.2___
Score for Commercial Software: _1.8____
Objective Ranking: _____14

o. MORE EFFICIENT OPERATIONS - Reduced manpower requirement for system operations; aggregate number of enlisted soldiers added or removed from the total Army when GCSS-A/T is operational as compared to today

Score for Custom Software: _____2
Score for Commercial Software: __2___
Objective Ranking: _____11

Remarks: Prioritizing the importance of these functions was difficult. Many are interrelated and in reality would be difficult to segregate in requirements determination. The relative value rankings are obviously subjective and final scores cannot actually be assessed until the system development and process reengineering/blueprinting/configurations are complete.

ATCL-S April 6, 2002

EXHIBIT XXVI - ARMY G-4 COMMENTS

LTC Austin, Army G-4:

1. This is in response to your e-mail of 8 Mar 02, requesting that Deputy Chief of Staff, G-4 (DCS, G-4) identify two subject matter experts (SMEs) to complete and return the Performance Objectives Evaluation Form -- Analysis of Alternatives (AoA) for Development of an Enterprise Resource Planning (ERP) Capability in the Global Combat Support System-Army/Tactical (GCSS-A/T) evaluation performance form by COB 15 March 2002.

2. I decline to answer the questions reference the Performance Objectives Evaluation Form because I disagree with the characterization of the current GCSS-A/T custom development software solution as an ERP. My concern is the premise that merging capabilities of GCSS-A/T and WLMP will result into a single ERP tool for the Army as stated in Alternative "a. paragraph 5. of the 10 Mar 02, Abbreviated Analysis of Alternatives (AoA) Enterprise Resource Planning (ERP) Capability Global Combat Support System - Army/Tactical (GCSS-A/T) which reads "Utilizing an incremental development approach, to limit disruption to present development efforts, merge the Enterprise Resource Planning (ERP) capabilities of GCSS-A/T and WLMP into a single ERP tool for the Army."

3. ERP combines all elements of an enterprise together into a single, integrated software program that runs off a single database so that the various elements can more easily share information and communicate with each other. Per the above paragraph, non-ERP custom development or COTS ERP solutions can be made to work given enough time and resources to do so. The real question is, which option can be done faster, cheaper and provide the best integration across the enterprise.

4. I recommend that the PM GCSS-A/T change the GCSS-A/T technical solution development strategy from custom modular development via incremental replacement of functionality provided through spiral development to a Commercial ERP Software Solution -- GCSS-A ERP functionality to be developed based on incorporation of SAP software applications.

5. The decision to move to a commercial ERP technical solution should stand on its on merits as meeting GCSS-A/T requirements. I believe we are better off making or not making that case based on the three studies that have been done at the Army's request and cited by LTC Pennington in his AOA (working draft - 10 March). All three reports state that an ERP solution can work and go a step further to recommend using SAP since the Army has already made an SAP investment with WLMP. Do you really need to take this analysis beyond the three studies mentioned above?

7. After review of the AOA questions (found on the Performance Objectives Evaluation Form) I conclude that the DCS, G-4 or any other Army SMEs meet all the qualifications

requirements as outlined in your e-mail dated Friday, March 08, 2002, Subject: Request for SMEs -- Analysis of Alternatives (AoA) for GCSS-A ERP Functionality. My apprehension is that no Army SMEs will meet your requirements. While I believe that the Army can supply SMEs with the qualifications required in the first two bullets below, I do not believe that the Army has the SMEs that combine the qualifications in the first two bullets with the ERP knowledge required in the third bullet. To date, the Army has consistently had to obtain its ERP expertise through contractors external to the Army. That said, those attempting to answer the AOA questions risk not being able to substantiate their answers or back-up answers with validated data. Therefore, I question the AOA process and doubt it will withstand scrutiny. Qualifications musts for SMEs are:

- Have a knowledge of the strengths and weaknesses of the legacy STAMIS systems

- Understand what the vision/goals are for Combat Service Support (CSS) automated information systems and what we expect to gain from a new system; and

- Understand what an Enterprise Resource Planning (ERP) system is and have enough background to be able to evaluate between alternatives.

8. We appreciate the opportunity to provide comments and welcome any opportunity to assist you in the future.

Note from the DCSLOG on the status of the SPR Module as representative of the difficulties of custom development:
EXECUTIVE SUMMARY: Visited Fort Hood to observe the Standard Property Modular, System Acceptance Test. The Property Book modular build 2 was ongoing with units from the 49th Div, out of Austin, Texas. The members of the unit were extremely receptive of the program and gave it high marks in comparison to SPBS-R. However, a major draw back being the response time by the system during data input. In observing several property functions it was clear to me that response times averaging 15 seconds to 12 minutes would be a showstopper in fielding this program. In discussion with Mr. Schuller GCSS-A, members of the JAD and ATEC all concurred this was not an expectable response time for user in the field. In measuring this response time I considered the fact that less then thirty users at any given time was on the system. Additionally, it was my observation that key manager tools currently in the existing STAMIS (SPBS-R), like date of last adjusted (DLA), and serial number history tracking were not active in this build. Recommendation: The Army re-look the proposed fielding of SPRY Property modular. The contractor continues to work the development of the software and develop a secure network system that will be time sensitive to the user workload. CW5 Willie M. Brown, Jr, (703) 692-9853 (22 March 2002)

Ms. Donna Shands, Army G-4:

I/we believe either system can be made to work well for the war fighter. I believe both systems have (or will have) experts building them, either from ground up design or thru blueprinting of already designed software. The questions I think we need to focus on

are 1) which one has the better chance of getting the most processes and/or applications out there faster, 2) which will be more accurate on first deployment 3) which will provide the most integration of processes (given state of art in technology, do not believe we want to build old architecture that says we interface, but rather insist on integrations) 4) has a shared data environment, ie single data bases where ever possible and elimination of duplicative data elements in separate files that require reconciliations and passing of data back and forth that might not get updated if someone doesn't run an application in sync with other applications.

ATCL-S April 6, 2002

EXHIBIT XXVII - HEADQUARTERS UNITED STATES ARMY AVIATION CENTER AND FORT RUCKER COMMENTS ON GCSS-A MAINTNENACE MODULE FUNCTIONALITY ALTERNATIVES

SENT BY:HQ.MICOM RSA AL 35898 ; 3-20- 2 ; 9:28AM ; ADMIN SVCS DIV→ 8047341198;# 2/ 2

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY AVIATION CENTER AND FORT RUCKER
453 NOVOSEL STREET
FORT RUCKER ALABAMA 36362-5106

REPLY TO
ATTENTION OF

ATZQ-CG 19 March 2002

MEMORANDUM FOR Commander, CASCOM (LTG Soloman) 3901 A. Avenue Suite 200, Fort Lee, Virginia 23801-1809

SUBJECT: GCSS-A Maintenance Module Functionality Alternatives

1. We understand that an Analysis of Alternatives for the GCSS-A Maintenance Module is ongoing to evaluate SAP as an alternative to the modular development approach currently on-contract. While we recognize the strategic strengths of an ERP solution like SAP, we are extremely concerned about the ability of a SAP-ERP solution to achieve our goals. We strongly believe the AoA must consider all of the feasible information technology solutions that will improve the ability of our maintenance soldiers and enable improved Army readiness.

2. The Aviation community has continuously provided input into GCSS-A requirements; as our goals have evolved. Specifically, we have continued efforts of the Digital Aviation Logistics Prototype (DAL-P) team and other activities to define a commercial paradigm for fleet management and to reengineer our business processes. Significant advances have been made in the definition of what the Aviation community requires in functionality of an "at the aircraft" maintenance management system. Our objectives in these efforts have been to foremost, reduce soldier workload, enable fleet management, and improve field maintenance.

3. SAP, as demonstrated in a commercial aviation maintenance operation, exhibited several functionality gaps compared to Army aviation requirements:

- Maintenance and logistics records are not paperless.
- Heavy manual data collection burden on the soldier.
- "Fault-Based" i.e., no task based data collection or maintenance process feedback.
- Current Army processes must conform to SAP software.
- Unable to seamlessly capture and distribute necessary logistics information.
- No integration of technical data.
- Unable to automate configuration management.
- Does not provide tools for predictive mission support planning.
- Not designed to accommodate individual-to-institutional training processes.

4. The Advanced Maintenance Aid Concept (AMAC) is an example of an integrated maintenance management system that represents the functionality envisioned by DAL-P and the Aviation Logistics Concept for Future Army Operations. Incorporation of a system with this functionality will ensure success of the GCSS-A Maintenance Module.

5. We believe the GCSS-A Maintenance Module AOA should consider the AMAC functionality as an alternative in providing a reduced workload automated "at aircraft" system.

JOHN M. CURRAN
Major General, USA
Commanding

JOSEPH L. BERGANTZ
Major General, USA
Program Executive Officer, Aviation

LARRY L. LODGEN
Major General, USA
Commanding

EXHIBIT XXVIII - SINGLE STOCK FUND (SSF) DISCUSSION

Gregory W. Kropp, Chief Automation Initiatives Br., ISD, CASCOM:

On 21 Mar, Mr. Mills forwarded three questions that GEN Kern wanted to be discussed at the 25 Mar GAIT. Questions with our answers are listed below:

Question 1: "Is it true that either option [ERP or custom build software] will ultimately operationally retire the SARSS, middle-ware, and CTASC box latch up for SSF MS I and II?"

Yes, the goal of new automation efforts is to replace SARSS throughout the Army. Since the original intent of middleware was to allow SARSS to include SSF without creating a second SARSS software baseline, it follows that the functionality and/or business rules that are currently implemented in the SSF middleware will be incorporated in the new automation as it replaces SARSS. It has always been the plan that the legacy functionality in SARSS-1, SARSS-2AD, and SARSS-2AC/B will be accomplished under GCSS-Army by a combination of the Supply Support Activity (SSA), Integrated Materiel Management (IMM), and Management (MGT) modules. SSF functionality and business rules, including those incorporated in middleware, are part of the legacy systems to be replaced.

Question 2: "Would an ERP fix for SSF MS I & II but custom build for SSF MS III leave us with middleware to a SSF MS I and II interface even if we have an ERP melding between SSF MS I and II sites and Modernized WLMP solution?"

Question asks if, with an ERP solution like WLMP, at the installation level (where SSF MS I&II is), and a mix of the GCSS-Army SSA/IMM/MGT modules for tactical users (Corps, Divisional and non-Divisional SSAs and MMCs) for SSF MS III, we would need middleware to interface the installation level with the National level. The answer to the question is No. The new automation will replace SARSS and middleware functionality will be included in the new automation.

Question 3. "What are the pros and cons of each of those options as they pertain to SSF MSI&II and MS III?"

The purpose of SSF was to integrate the wholesale and retail levels of supply and to integrate supply and financial management. SSF is an Army-wide process that led to the BPR that resulted in a single point of sale, single credit process, integrated requirements determination, and enabling of national maintenance management. SSF implementation uncovered many less than optimal business practices that required changes to successfully implement and execute SSF business rules. Whether we use an ERP or a custom build, we must incorporate all SSF functionality and business rules. SSF has impacted many different automated systems currently used by the Army. It would be unrealistic to build or buy any automation solution that did not incorporate SSF.

ISD is not able to address cost and schedule considerations.

ATCL-S April 6, 2002

David A. Mills, Assistant Deputy to the Commanding General, U. S. Army Materiel Command

Quote from 25 March 2002 e-mail:

Appreciate the feedback and understand that either option will eliminate SARSS and SSF middleware (MW) "as we know it today" although some continued use of MW will apply driven by the SSF business rules that apply, the technical solutions that are pursued, the degree of integration that can be melded in and the future of the DoD's financial systems ERP initiatives. (Not real clear on CTACS boxes). Additional comments on AoA follow:

1. As we see it the Bottom-line of this AoA is that both alternatives project pros and cons as they pertain to SSF MS I&II and MS III but they are keyed to the inviolability of existing and emerging SSF business rules and as you know the core concept of a commercial ERP and it's success is to adopt business practices to maximize the benefits and flexibility provided by an ERP solution not to adopt and ERP solution to the exiting business practices and organizational set up. Our quick take on key pros and once is as follow:

a. Custom Code development pros are best support implementation of SSF Business rules **as they currently exist**, least affected by communication structure, and allows for greater flexibility (this could be viewed by some as a CON). Cons are does not provide for adaptation of capabilities of an ERP

b. Commercial ERP adaptation pros are promotes establishment of Collaborative Enterprise Environment (CEE), moves to standard business process, and supports DLA BSM and other Service Modernization efforts in ERP environment as leverage off collaborative process. Cons are business process changes will be needed.

2. Both the custom build and commercial ERP alternatives stick to the traditional wholesale/retail separation and neither considers the lines SSF has drawn in our logistics chain.

3. Two of the four approaches to these alternatives do consider the "WLMP extension" only to SSF MS I&II (installation) level (SSF MS I&II) but they do not adequately address SSF MS III and its implications. If the Army fully implements SSF MS III it is AMC's view is that the most expeditious and cost effective way to **operationally retire our legacy systems** and get to an end-to-end integrated system is to extend the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM. To support hat approach GCSS-A Tactical could develop the split base functionality and other tactical special requirements and integrate them into WLMP using the either the WLMP ERP's Application Link and Enabling (ALE) functionality or the Enterprise Application Integration (EAI). This would ensure the elimination of the SARSS, middle-ware, and CTASC box latch up for SSF MS I&II and for MS III. This needs to be addressed in this AoA.

4. One of the two approaches listed in the AoA analysis for extending the WLMP ERP solution to the SSF MS I&II functionality (installation level), the SSF supply chain would still be broken and the requirement for interface middleware would still exist if GCSS-A Tactical pursues a non-ERP based development effort.

5. In AMC's view any further development of SSF business rules should be incorporated into the objective system, and not be tailored for the legacy capabilities such as the case of the RON/DON functionality, which as you well know will cost the government almost $8 million because of its processes being well out of the realm of best business practices. Continuing to develop in the legacy environment will require expensive and extensive coding to be done in tactical and national level systems, middleware, and now WLMP ERP middleware. Most of this investment would be for interim work-arounds that would be tossed as the ERP inevitably extends down to tactical and the legacy systems and associated middleware **are retired**. Again, this needs to be addressed as a part of this AoA effort in our View

Clearly, the Army's SSF Business Rules are a key consideration here and a key "decision point" in sorting between alternatives. Movement to an ERP would by its very nature drive business process re-engineering to include currant SSF MS I&II processes and rules as well as planned MS III processes and rules. We need to get on with the extension of WLMP ERP functionality for all of MS I&II and sort best fix for SSF MS III at GCSS-A Tactical level. Clealry staying the course for a "custom build" at that level is a workable solution to be presented to the CG AMC and his 3-Button council on 8 Apr 02.

EXHIBIT XXIX - ENTERPRISE RESOURCE PLANNING (ERP) INFORMATION

The Gartner Group coined the term "enterprise resource planning" in the early 1990s to describe the business software systems that evolved as an extension of Material Requirement Planning (MRP) II-type systems. They stipulated that such software should include integrated modules for accounting, finance, sales and distribution, human resource management, material management, and other business functions based on a common architecture that linked the enterprise to both customers and suppliers. This description implies three key properties. First, ERP systems are multi-functional in scope, tracking a range of activities such as financial results, procurement, sales, manufacturing, and human resources. Second, they are integrated in nature, meaning that when data are entered into one of the functions, information in all related functions is also changed immediately. Third, they are modular in structure and usable in any combination of modules. A firm can implement all the modules or a subset of them, as well as connect to other support systems, including "bolt-ons." Bolt-ons are specialized systems that normally provide a customized capability, often taking the form of a decision support system. Many ERP systems also come with industry-specific solutions, or templates, that enhance the standard system by addressing key issues or business processed within an industry group. *("Enterprise Resource Planning: Common Myths Versus Evolving Reality" by Vincent A. Mabert, Ashok Soni, and M.A. Venkataramanan; For reprints call HBS Publishing at (800) 545-7685)*

In 1999, Meta Group did a study looking at the Total Cost of Ownership (TCO) of ERP, including hardware, software, professional services, and internal staff costs. The TCO numbers include getting the software installed and the two years afterward. Among the 63 companies surveyed—including small, medium and large companies -- in a range of industries:

- The average TCO was $15 million (the highest was $300 million and lowest was $400,000)
- The average ERP implementation took 23 months, had a total cost of ownership of $15 million
- It took eight months after the new system was in (31 months total) to see any benefits.
- **The TCO for a "heads-down" user over that period was $53,320**
- The median annual savings from the new ERP system was $1.6 million per year.

(Report: "Enterprise Resource Management (ERM) Solutions and Their Value" authored by Meta Group in 1999; Price: $2,500; www.metagroup.com)

InfoWorld Article: "The 70-percent failure," dated October 26, 2001, authored by Bob Lewis: (http://www.infoworld.com/)

META GROUP REPORTS that a staggering 55 percent to 75 percent of all CRM projects fail to meet their objectives. Clearly it is just the latest in a long line of overhyped technologies.

Or is it? On average, about 70 percent of all IT-related projects fail to meet their objectives, so CRM's failure rate -- along with the appalling 70-percent failure rate for ERP implementation projects and the shockingly high 70-percent failure rate experienced by those implementing SCM (supply-chain management) -- is about as distressing as a 70-percent failure rate for a hitter in baseball.

Which is to say this is actually good news. Any manager in baseball would be thrilled to have a team batting average of.300, and if CRM and SCM projects are succeeding as well or better than traditional IT projects, it is remarkable. Why? CRM and SCM aren't like traditional IT projects. They're the next stage in an ongoing shift in the role of IT -- from solution to enabler.

When I had hair and Cobol was the only programming language used in business, we automated an existing process, and we were done. The new application was the solution.

ERP systems, in contrast, ship with built-in business processes. They're more than software, and as a result require far more coordination between IT and business management -- something that caught many early ERP implementers off-guard. Businesses usually implement ERP systems to replace obsolete technology and think of the new processes as added baggage, not added value.

SCM and CRM are fundamentally different -- neither is a category of software.

SCM is a business discipline. Its goal (loosely stated) is to maximize the quality of the raw materials used in creating a company's products while minimizing handling costs. It requires sophisticated manufacturing and distribution processes, along with the cooperation of your suppliers, their suppliers, and the shipping and distribution companies that move stuff from one to another.

CRM is a core business strategy, driving success through the management of customer relationships which become assets, where ongoing investment yields ongoing returns. It involves personalized marketing and service, mass customization in manufacturing, and employees whose good judgment and attitude, assisted by technology, turn every customer experience into not just a pleasant interaction but part of an ongoing relationship between each customer and the business.

With both SCM and CRM, IT is just one of many enablers. And that's a fundamental change in our relationship with the enterprise.

From the Darwin Magazine Article: "Executive Guides: Enterprise Resource Planning," dated January 31, 2002:

The Hidden Costs of ERP:

ERP pros vote the following areas as most likely to result in budget overrun.

1. **Training**
   Training is the near-unanimous choice of experienced ERP implementers as the most elusive budget item. It's not so much that this cost is completely overlooked as it is consistently underestimated. Training expenses are high because workers almost invariably have to learn a new set of processes, not just a new software interface. Later in the article it is stated: It is believed increasingly by experts that poor education of the broad user community of managers and employees, who are supposed to run the business, is the reason that most ERP implementations fail to meet objectives.

2. **Integration and Testing**
   Testing the links between ERP packages and other corporate software links that have to be built on a case-by-case basis is another often underestimated cost. A typical manufacturing company may have add-on applications for logistics, tax, production planning and bar coding. If this laundry list also includes customization of the core ERP package, expect the cost of integrating, testing and maintaining the system to skyrocket.

   As with training, testing ERP integration has to be done from a process-oriented perspective. Instead of plugging in dummy data and moving it from one application to the next, veterans recommend running a real purchase order through the system, from order entry through shipping and receipt of payment-the whole order-to-cash banana-preferably with the participation of the employees who will eventually do those jobs.

3. **Data conversion**
   It costs money to move corporate information, such as customer and supplier records, product design data and the like, from old systems to new ERP homes. Although few CIOs will admit it, most data in most legacy systems is of little use. Companies often deny their data is dirty until they actually have to move it to the new client/server setups that popular ERP packages require. Consequently, those companies are more likely to underestimate the cost of the move. But even clean data may demand some overhaul to match process modifications necessitated—or inspired—by the ERP implementation.

4. **Data analysis**
   Often, the data from the ERP system must be combined with data from external systems for analysis purposes. Users with heavy analysis needs should include the cost of a data warehouse in the ERP budget—and they should expect to do quite a bit of work to make it run smoothly. Users are in a pickle here: Refreshing all the ERP data in a big corporate data warehouse daily is difficult, and ERP systems do a poor job of indicating which information has changed from day to day, making selective warehouse updates tough. One expensive solution is custom programming. The upshot is that the wise will check all their data analysis needs before signing off on the budget. Stick to the plain vanilla version of the package, with as little customization as possible.

5. **Consultants Ad Infinitum**
   When users fail to plan for disengagement, consulting fees run wild. To avoid this, companies should identify objectives for which its consulting partners must aim when training internal staff. Include metrics in the consultants' contract; for example, a specific number of the user company's staff should be able to pass a project-management leadership test—similar to what Big Five consultants have to pass to lead an ERP engagement.

6. **Replacing Your Best and Brightest**
   It is accepted wisdom that ERP success depends on staffing the project with the best and brightest from the business and IS. The software is too complex and the business changes too dramatic to trust the project to just anyone. The bad news is, a company must be prepared to replace many of those people when the project is over. Though the ERP market is not as hot as it once was, consulting firms and other companies that have lost their best people will be hounding yours with higher salaries and bonus offers than you can afford—or that your HR policies permit. Huddle with HR early on to develop a retention bonus program

and to create new salary strata for ERP veterans. If you let them go, you'll wind up hiring them—or someone like them—back as consultants for twice what you paid them in salaries.

7. **Implementation Teams Can Never Stop**
Most companies intend to treat their ERP implementations as they would any other software project. Once the software is installed, they figure, the team will be scuttled and everyone will go back to his or her day job. But after ERP, you can't go home again. You're too valuable. Because they have worked intimately with ERP, they know more about the sales process than the salespeople do and more about the manufacturing process than the manufacturing people do. Companies can't afford to send their project people back into the business because there's so much to do after the ERP software is installed. Just writing reports to pull information out of the new ERP system will keep the project team busy for a year at least. And it is in analysis—and, one hopes, insight—that companies make their money back on an ERP implementation. Unfortunately, few IS departments plan for the frenzy of post-ERP installation activity, and fewer still build it into their budgets when they start their ERP projects. Many are forced to beg for more money and staff immediately after the go-live date, long before the ERP project has demonstrated any benefit.

8. **Waiting for ROI**
One of the most misleading legacies of traditional software project management is that the company expects to gain value from the application as soon as it is installed; the project team expects a break, and maybe a pat on the back. Neither expectation applies to ERP. Most don't reveal their value until after companies have had them running for some time and can concentrate on making improvements in the business processes that are affected by the system. And the project team is not going to be rewarded until their efforts pay off.

9. **Post-ERP Depression**
ERP systems often wreak cause havoc in the companies that install them. In a recent Deloitte Consulting survey of 64 Fortune 500 companies, one in four admitted that they suffered a drop in performance when their ERP systems went live. The true percentage is undoubtedly much higher. The most common reason for the performance problems is that everything looks and works differently from the way it did before. When people can't do their jobs in the familiar way and haven't yet mastered the new way, they panic, and the business goes into spasms.

A few things to ponder when planning for ERP

- Which processes are most important now and why?
- Does this system meet our needs or go beyond them?
- Who will be the change champion(s)?
- Who are the stakeholders?
- What is the business culture at our company and what are its strengths?
- What subcultures do we have and what are their strengths?
- How can we apply those strengths to business change?

- What cultural attributes are weak or will interfere with the change?
- What will be the toughest changes, and how will we address them?
- Who will be responsible for change management?

(http://guide.darwinmag.com/technology/enterprise/erp/index.html)

Links:

DARWIN Magazine
http://guide.darwinmag.com/technology/enterprise/erp/index.html

CIO - Enterprise Resource Planning Research Center
http://www.cio.com/research/erp/
The front page of CIO.com's ERP Research Center not only supplies the standard articles and resources. You will also find ERP related metrics, Q&A's and a feature known as CIO Radio, which consist of online interviews with industry experts.

ERPCentral
http://www.erpcentral.com/
This portal to ERP issues links to trade publication articles as well as B2B, CRM, Wireless and e-Business information.

ERP Fan Club
http://www.erpfans.com
Yes, ERP does have its own fan-club site on the Web, with links to news, vendor information and the like.

The IT Industry Portal - ERP
http://www.erphub.com
Even though this site is a subsection of EarthWeb, another IT industry portal, non-IT executives will still find useful feature articles and case studies on topics like ERP implementation strategies, infrastructure and system performance.

IT Toolbox - ERP
http://www.erpassist.com
At this Yahoo-style portal, extensive links to ERP books, white papers, articles and other resources are organized by vendor and by broad topic themes.

ATCL-S April 6, 2002

EXHIBIT XXX - WHOLESALE LOGISTICS MODERNIZATION PROGRAM (WLMP) INFORMATION

POC: Mr. Larry Asch, Wholesale Logistics Modernization Program, Business and Operations Office, PHONE: 732-427-1076, DSN: 987-1076, FAX: 732-427-1093, E-MAIL: lawrence.asch@mail1.monmouth.army.mil

PURPOSE: The Wholesale Logistics Modernization Program will modernize the Army's wholesale logistics business processes and practices. WLMP will provide agile, reliable, and responsive services by leveraging best practices and technology that enable AMC to deliver world-class logistics and readiness to the warfighter and will advance with the challenges in the Army vision. The commercial SAP solution being used is to support the overall objectives of Logistics Modernization in providing the following:

- Total Asset Visibility and Velocity Management
- Enhanced Decision Support Capabilities
- Collaborative Planning Environment
- Single Source of Data
- Real Time Access and Update of Information
- Easy Accessibility and Flexibility
- Defense Industry-Specific Functionality

WLMP WEBSITE: http://www.wlmp.com

PROBLEMS:

Question: What have been the major problems experienced by WLMP and what caused the schedule to be revised?

Answer: The two major areas are as follows:

1. Program Management: As you know the track record in Government for software development has not been good. One report we have (available on request) shows the Government succeeds with out cost, schedule or performance problems only 18% of the time and fails 30% of the time. On ERP's the failure rate you stated is about one third as you stated at this week's GAIT, but the reasons are different as Mr. Scheuble stated. I have numerous cases of the reasons I can share with you, but they are more not software failures, but program implementation and management problems. Our contract has a

very detailed and effective performance bonus (PB) incentive arrangement in which the contractor must "exceed performance" or he will not receive PB pool dollars (approximately 75% of the contract) for not exceeding performance. The importance of this program to CSC and this tool has got the attention of the contractor and he completely replaced his program management team to mitigate future concerns in this area. We would like to share with you our PB arrangement at your convenience, and believe the quality of this new program management team will assure success.

2. Functionality Gaps: We had a proof of concept demonstration in June of 2001. The purpose of this demo was to show the breadth of AMC's functionality could be met with SAP and identify functionality gaps. Functionality gaps were identified and have been worked in concert with CSC and SAP. We have been pleased with the support from CSC and SAP and these gaps have been closed. We can provide additional information in this area to you.

3. In closing I feel the problems we had are mainly related to Program implementation and management. In software development my experience has been much of the problems are in programming and again I have examples near and dear to all of us I can supply you, but in an ERP the problems are more management and people related.

4. Below in a spreadsheet is the history on Government WLMP resources for all efforts. TDY expenditures: Approximately $2.6mil last year; $5.1mil estimated for FY-02; and $4.6mil estimated for FY-03.

PERIOD	CORE SERVICES/FIT*	LONG LEAD*	DATA	DEVELOPMENT/INTFC	TEST COORD TEAM	PTWG	IT	Core INTEG	Non-Core INTEG	TOTALS
Dec-00	66 (FT/55; PT/11)	101	(Part of Core Figure)	(Did not exist)	(Did not exist)		1	(Did not exist)	(Did not exist)	168
Feb-01	87 (FT/72; PT/15)	97	(Part of Core Figure)	(Did not exist)	(Did not exist)		1	(Did not exist)	(Did not exist)	185
Jun-01	83 (FT/66; PT/17)	103	(Part of Core Figure)	(Did not exist)	(Did not exist)		1	(Did not exist)	(Did not exist)	187
Jan-02	66 (FT/48; PT/18)	0	41 (FT/12; PT/24; OC/5)	4 (FT/3; PT/1)	13 (FT/9; PT/4)	12 (FT/1; PT/11)	2 (FT/1; PT/1)	7 (FT/6; PT/1)	1 (FT)	146

CORE SERVICES - Majority of Part Time personnel are LAISO & DFAS

LONG LEAD - Long Lead Teams started in Oct 2000 and dropped off in June 2001. All Long Lead Team support was in Part Time status, although some members supported this effort on Full Time status at Home Station. Data Cleansing LL Team has been ongoing. Future State Enterprise Mapping LL Team and Bills of Material LL Team have recently energized their efforts. All groups have varied in level of participation at Moorestown and Home Station.

INFORMATION TECHNOLOGY - There has never been a Full Time IT WG

PERSONNEL AND TRAINING - This WG has always been comprised mostly by CORE/FIT team personnel on Part Time basis

EXHIBIT XXXI - USAREUR VOTES AND COMMENTS

From: Oldaker, William R. Mr. [mailto:William.Oldaker@hq.hqusareur.army.mil]
Sent: Wednesday, March 27, 2002 10:26 AM
To: 'penningtonh@LEE.ARMY.MIL'

USAREUR's votes follow:

GAIT: Reference GAIT VTC, 25 March 2002. The following note is to emphasize key points underlying the alternatives upon which you have been asked to vote.

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:

* Custom development; or
* COTS ERP

Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

Response: COTS ERP. We believe that SAP, or at least an ERP, is the best course of action for GCSS-Army/T in support supply, maintenance, distribution, resource management, and finance/accounting activities. Among the reasons for our position are the developmental costs we would incur with custom software in an environment of unconstrained requirements from many diverse constituencies. The very nature of adapting to known and successful business operating procedures and software will result in an unprecedented level of integration and standardization. In our opinion, we need to go thru the process of sorting out which of our procedures should be changed to be more like private industry. We know the Army has some important considerations that private industry does not (such as risk to soldiers), but we should be able to adapt our business practices to an ERP environment. Adequate and dependable communications (both garrison and tactical) will be fundamental to success with an ERP in the GCSS-Army/T environment, and we believe addressing these requirements must be a part of the management plan and not just assumed to be covered by another activity or agency. We understand that ground equipment to support assured satellite communications is included in the cost estimate for the ERP solution. We believe that planning for implementation should also ensure that necessary satellite air-time and adequate, world-wide satellite coverage are provided.

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level.

Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

Response: **Yes and No**. We do not believe a pilot is required but, should one be undertaken, the target should be tactical and installation. We do believe that blueprinting and development effort, beyond that to be done for WLMP, is required in the tactical and installation environments.

Vote Three -- Whether WLMP should extend its processes to:
* Installations; or
* Tactical SSAs

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Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

Response: **Installations: Possibly depending on blueprinting results, Tactical: No**. While we believe that the GCSS-A/T system should be aligned with wholesale level operations (WLMP), the tactical environment, due to its existing differences from wholesale operations and the underlying reasons for those differences, a separate blueprinting and development effort is required. We do, however, believe that economy of scale, institutional knowledge gained by the WLMP contractor and the seamlessness that could be achieved by using the same vendor for GCSS-A/T ERP and WLMP could prove extremely beneficial to the Army.

Bill Oldaker

ATCL-S April 6, 2002

EXHIBIT XXXII - ARMY NATIONAL GUARD VOTES AND COMMENTS

From: Glenn.Walker@NGB.Army.mil [COL Glenn Walker, ARNG, G4, NGB-ARZ-S, 111 South George Mason Drive, Arlington, VA 22204-1382, DSN 327-7481, (703) 607-7481]
Sent: Tuesday, March 26, 2002 14:00 PM
To: penningtonH@lee.army.mil

Reference: GAIT VTC, 25 March 2002. The following is the ARNG votes.

- *Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:*
Custom development; or
Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

✓ **ARNG G4 vote is for COTS ERP. Decision dialogue – (1) ERP solution will support sameness for installation personnel and warfighters, train on same systems at peace and at war –** this is especially important for ARNG organizations since the statutory requirements of the full time support personnel is to train and sustain the part time force; **(2) Army experience with custom build places this approach in the medium to high risk category; (3) Funding-stream better resources ERP solutions, there are existing unfunded requirements in G-Army, of which the predominant share is against ARNG requirements; (4) An ERP solution provides the best opportunity for compatibility within the entire DA/DoD logistics and financial community, a long sought goal. This would be as close to a true factory-to-foxhole solution we may ever realize; (5) ERP is already web-based, while our custom build suffers; (6) ERP will provide a synchronized fielding across MACOMs and Components; this should mitigate the modular fielding in which we have experienced computer and software issues.**

- *Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level.*
Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

✓ **YES, for funding and executing an ERP demonstration program. We concur with DA G4 that a pilot program may not be the right approach. It would be best to convert a comprehensive enough organization to truly show the viability of an ERP solution. Decision Dialogue –We would offer that the sites best suited for a demonstration are Fort Rucker, to support high priority aviation training critical to Aviation Transformation; (2) Europe, as a community in which installations and**

combatant commands are closely integrated, and offer an ARNG state - Mississippi (a state with the widest variety of organizations to integrate – combat brigade, AVCRAD, CSMS, RSMS, RTS-M, M1 Technical Training, etc.

- *Vote Three -- Whether WLMP should extend its processes to:*

Installations; or

✓ *Tactical SSAs*

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

✓ **ARNG G4 vote is for Tactical SSAs. Decision dialogue – ARNG has no choice, our installations and full time support structure, provide the necessary environment in which to train our personnel on wartime systems. They, in turn, use that competency to train the part time force. Any deviation between peacetime and wartime systems will seriously deter from our mission. If the community votes to continue with Custom build we will use those systems in our installation environment. We strongly believe this is the best opportunity to provide a corporate, seamless solution to the automation needs of the Army.**

EXHIBIT XXXIII - U.S. ARMY PACIFIC VOTES AND COMMENTS

From: Lampros George Jr USARPAC DCSLOG(n) [mailto:LamprosG@shafter.army.mil]
Sent: Wednesday, March 27, 2002 9:56 PM
To: penningtonh@LEE.ARMY.MIL

USARPAC vote is as follows:

The basis for the vote below and comments is primarily the AoA document recently provided the field for review. As what was stated in the VTC on 25 March is "That we don't know what we don't know". Some of the primary decision points had to deal with our inability to deliver complete and timely custom coded products in the past. Also, with a great many of the requirements automatically satisfied with an already codes and standardized product, the Army can concentrate relooking our business rules and and examining where the ERP product fails to accomodate Army doctrine. We also felt that there has to be considerable benefit that GCSS-A/T can draw on from the AMC WLMP experience. Cost data and any analysis remains problematical since data is incomplete.

GAIT: Reference GAIT VTC, 25 March 2002. The following note is to emphasis key points underlying the alternatives upon which you have been asked to vote.

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:

1. **Custom development; or**
2. **COTS ERP?**

Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

Response: COTS ERP. Rationale/comment: Most of the business processes in supply and maintenance and their related financial processes are no different than those in the commercial sector. Where the Army perhaps differs is in the required mobility of units for deployment, in many cases, to extremely austere environments (limited/unreliable communications, limited beddown infrastructure, requirement to move perhaps frequently under hostile conditions, split base and task oriented operations, etc.). What we in the development community need to concentrate our efforts on is focusing on the Army unique factors and not have to worry about routine business processes. We need to ensure that the system does not drive Army doctrine but adapt ERP to meet those requirements. There is also much to be gained by the experience that AMC is going through with WLMP and the direct integration and standardization that a total ERP can offer.

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level?

Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation

processes could best be met with a commercial ERP application.

Response: No. Rationale/comment: If the decision is to utilize an ERP solution for GCSS-A/T, then we feel that the Army is totally committed to that solution. If we understand the ERP process correctly once the various blueprinting and development processing is completed for even a single installation and tactical unit, the system is ready for testing and fielding. We, therefore, feel that normal development, testing and fielding procedures that we always use be continued here.

Vote Three -- Whether WLMP should extend its processes to:

1. **Installations; or**
2. **Tactical SSAs?**

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

Response: No to both. Rationale/comment: There are major differences at wholesale business processes and in business processes at both installation and tactical SSA levels, perhaps more pronounced at the latter. For example our installations support directly tactical units that could be deployed. Such is the case today for the 10th ASG (SSF milestone 1 & 2 SARSS 1) in Okinawa, Japan is in direct support of deployed units under Operation Freedom Eagle - Philippines. In fact, almost all installations provide direct support to reserve and tenet tactical units who do not have organic DS support. In addition, the importance of the installation in support of the IBCT appears to be significant, however, is still developing. For these and other supporting reasons we feel that a separate blueprinting and development ERP process is required. We also agree with USAREUR in that it makes a lot of sense to utilize SAP and same vendor as for WLMP. Now when I say a separate development process that is not to say that if a process is done in WLMP it is altogether possible that it be pulled down and made available for GCSS-A/T. Catalog data is a good example: Once completed in WLMP it should also be made immediately available below wholesale. Data bases for both systems should utilized shared data base technology. All changes made at any level are immediately posted for use by either system. Goal, we feel, should be to eliminate duplicate processing would only be done on an exception basis.

EXHIBIT XXXIV - U.S. ARMY SOUTH VOTES AND COMMENTS

From: Barry J. Steil [mailto:Barry.J.Steil@us.army.mil]
Sent: Thursday, March 28, 2002 11:49 AM
To: penningtonh@LEE.ARMY.MIL

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:

- **Custom development; or**
- **COTS ERP?**

Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

USARSO Vote: COTS ERP

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level?

Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

USARSO Vote: Yes, unless WLMP is extended to the installation

Vote Three -- Whether WLMP should extend its processes to:

- **Installations; or**
- **Tactical SSAs?**

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

USARSO Vote: Installation yes; Tactical SSA NO

Barry J. Steil, US Army South, ODCS-G4, Logistics Automation Coordinator
Ft. Buchanan, Puerto Rico, DSN 740-3017, (787) 707-3017 or 505-5624 (cell)
E-Mail: Barry.J.Steil@us.army.mil

EXHIBIT XXXV - U.S. ARMY SPECIAL OPERATIONS COMMAND (USASOC) VOTES AND COMMENTS

From: Morris, Brenda L. MRS [mailto:morrisbr@soc.mil]
Sent: Thursday, March 28, 2002 1:34 PM
To: 'penningtonh@lee.army.mil'; Hill, Bobby MR.

LTC Pennington,

USASOC, votes follow:

GAIT: Reference GAIT VTC, 25 March 2002. The following note is to emphasize key points underlying the alternatives upon which you have been asked to vote.

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:
* Custom development; or
* COTS ERP

Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

Response: COTS ERP. USASOC believes that SAP, or at least an ERP, is the best course of action for GCSS-Army/T in support supply, maintenance, distribution, resource management, and finance/accounting activities. Although we do not have the total cost as stated in the GAIT we still feel that it will be more diversified than custom built because of the following reasons:
-- ERP ensuring that there will be communication at all times.
-- We will be forced to follow the flow of new business processes.

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level.

No. It should be an independent blueprinting and development.

Vote Three -- Whether WLMP should extend its processes to:
* Installations; or
* Tactical SSAs

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

Installations: Maybe, depending on blueprinting results, Tactical: No. USASOC believe that the GCSS-A/T system should be aligned with wholesale level operations (WLMP), the tactical environment, due to its existing differences from wholesale operations and the primary reasons for those differences: Separate blueprinting and development effort is required Separate business process at wholesale level vs. installation

EXHIBIT XXXVI - ARMY G-4 VOTES AND COMMENTS

From: Austin, Wayne D LTC Army G-4
Sent: Thursday, March 28, 2002 5:45 PM
To: 'penningtonh@LEE.ARMY.MIL'

CS, G-4 vote is as follows:

GAIT: Reference GAIT VTC, 25 March 2002. The following note is to emphasis key points underlying the alternatives upon which you have been asked to vote.

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:

- **Custom development; or**
- **COTS ERP**

Response: COTS ERP. Rationale/comment: An ERP solutions would minimize complexity and provide an option for establishing a single integrated logistics system using COTS.

Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level.

Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

Response: Yes. Rationale/comment: The installation pilot must be the basis for further extension of an ERP into the tactical battle space. Any pilot should occur as part of the Realization Phase of the ASAP process and should not be confused with a throwaway prototype. This pilot also offers an opportunity to evaluate and benchmark the linkage between ERP communications capabilities and requirements.

Ms. Donna Shands, e-mail Thursday, March 28, 2002 5:45 PM -- The Army should execute a pilot to ensure blueprinting...but the pilot cannot be a throw-away, must be part of the initial implementation/installation plan and the cost should be included in the ERP implementation costs, not additive.

Vote Three -- Whether WLMP should extend its processes to:

- **Installations; or**
- **Tactical SSAs**

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

Response: Yes to both. Rationale/comment: We acknowledge that dissimilarity exist between the wholesale business processes from business processes in installation and tactical SSA s . We believe that the possibility may exist to leverage portions of the WLMP blue printing template and that there is expectable risk in extending the ERP to the installation level. However, extreme caution should be exercised before extending ERP into the tactical battle space. The tactical level ERP requires proof of concept that must be demonstrated first at the installation level then at the tactical level as a pilot.

EXHIBIT XXXVII - EIGHTH U.S. ARMY VOTES AND COMMENTS

From: Popp, James E. [mailto:PoppJ@usfk.korea.army.mil]
Sent: Thursday, March 28, 2002 7:55 PM
To: penningtonh@LEE.ARMY.MIL

EIGHTH US Army vote is as follows (Response block after each question):

GAIT: Reference GAIT VTC, 25 March 2002. The following note is to emphasis key points underlying the alternatives upon which you have been asked to vote.

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:

- **Custom development; or**
- **COTS ERP?**

Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

Response: COTS ERP. Rationale/comment: We support ERP and understand the pain and delay which may result, however the business process evaluation and change is long overdue. We failed to do this in the current GCSS-A effort. However, as pointed out, the SPR (SPBS-R/ULLS-S4) should proceed on current track and initially interface with, rather than be part of, the ERP product. The number of proposals floating on maintenance module indicates business process change may be needed. Additionally, ERP will provide the opportunity to fully integrate the retail supply, maintenance, and financial products in light of ongoing changes resulting from Single Stock Fund. We simply must have integration of the financial processes in whatever the new product is. We need a vertically integrated billing system so we don't continue to chase our tails after credits that get posted against a system (CCSS) that units with SARSS never see. Additionally, we note the cost of communications in the ERP analysis is actually an unstated (not in ORD) requirement in the custom approach.

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level?

Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

Response: No to a pilot, yes to a development prototype which will become the system of record at that site. Rationale/comment: A prototype which meets both installation and

tactical requirements should be used. It should be as much as possible subject to the same testing measures now in effect.

Vote Three -- Whether WLMP should extend its processes to:

- **Installations; or**
- **Tactical SSAs?**

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

Response: No to both. Rationale/comment: A close lashup with the current WLMP ERP is necessary, but the retail end should be developed separately to assure the needs of the tactical user are met. The best approach may be to use the same contractor doing WLMP and use much of the process as practical

EXHIBIT XXXVIII - FORCES COMMAND (FORSCOM) VOTES AND COMMENTS

From: Koons, J. Stephen, SES - G4 [mailto:steve-koons@us.army.mil]
Sent: Friday, March 29, 2002 11:58 AM
To: 'penningtonh@LEE.ARMY.MIL';

FORSCOM's votes follow.

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:

* Custom development; or
* COTS ERP?

FORSCOM supports the COTS ERP solution for GCSS-A/T development. We endorse a phased approach to ERP implementation; beginning with the installation garrison and extending to the tactical level as success is achieved. There are several factors that FORSCOM considers essential to the success of a COTS ERP solution. The system must have assured communications and a remote operating capability for situations when communications are not available. The system must also cause no further slip in delivery over the current GCSS-Army/Tactical fielding schedule. FORSCOM concurs with USAREUR that a Blueprinting and development effort, beyond that to be done for WLMP, is required in the tactical and installation environments. We must also define and program (POM) the costs of interfaces, bolt-ons, satellite airtime, etc, over and above the basic purchase cost of ERP software and implementation services. The Army must also make every effort to define and document C/CS/CSS, tactical and strategic impacts up front. Finally, and most critically, we must achieve senior leadership buy in on the COTS ERP-mandated operational and DOTLMS changes.

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level?

FORSCOM supports the funding and execution of an installation ERP pilot. As stated in our earlier position, FORSCOM supports a phased approach to ERP implementation, beginning with installation garrison. We would support extension of the ERP system to tactical units after successful testing with user participation throughout (e.g. lab, IGT, SQT, SAT, IOT&E).
This approach to ERP implementation is in line with WLMP and Single Stock Fund efforts in that it is phased, based on milestones, beginning with the national level and then proceeding to installation and tactical levels as the system is proved out. User/Gaining Command participation throughout the

testing process is critical both to manage change, ensuring user acceptance, and to provide practical expert review.

Vote Three -- Whether WLMP should extend its processes to:

* Installations; or
* Tactical SSAs?

FORSCOM supports WLMP extension to installation to the lowest level, again, in a phased approach, beginning with the installation garrison and proceeding to the next lower level when and only when successful deployment to AMC WLMP lead site and testing with user participation throughout (e.g. lab, IGT, SQT, SAT, IOT&E) are completed. Whatever solution we implement, however, must comply with PBD 422, enabling visibility, transaction processing, and management of both AMI and NAMI (AMC and DLA) items.

EXHIBIT XXXIX - U.S. ARMY MEDICAL COMMAND (MEDCOM) VOTES AND COMMENTS

From: Novak, William R COL AMEDDCS [mailto:William.Novak@CEN.AMEDD.ARMY.MIL]
Sent: Friday, March 29, 2002 12:05 PM
To: penningtonh@LEE.ARMY.MIL

Subject: Voting Information - **USA MEDCOM**

> **Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:**
>
> *** Custom development; or**
>
> *** COTS ERP**
>
> GAIT comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

MEDCOM Response: Concur with COTS ERP alternative if the following **critical** comments are **supported and funded**. The AMEDD must have an interface with GCSS-A to provide warfighter commanders required medical C2 data. While the ERP alternative may delay this required interface; this delay is acceptable if the Army can obtain a more efficient software package that supports Army Transformation objectives and fully supports other CSS integration. Risk is a significant factor that is directly affected by funding.

Our first Critical concern is the cost and ability of the ERP to develop necessary CSS interfaces to and between these systems. As stated during the 25 Mar GAIT meeting, costs for both the present GCSS-Army solution and the ERP alternative included costs for interface development with the other CSS systems. However, we feel the figures are not accurate. In software development the cost of changing established program code (post production) is extremely high and time consuming as opposed to building the required functions upfront and early in development. The ERP and SAP likely will require both large amounts of money and time to develop the current required interfaces with all the non-supply/ maintenance functions. With the high cost of these interfaces; unless provisions are made, understood, and supported at all levels; it is likely they will continually either slip or remain unfunded. If this occurs we will solidly establish the stove-piped functional programs we are attempting to eliminate. **CSS interface development must be supported and funded up-front or risk will be at an unacceptable level.**

Our second major concern is the **adequacy of communications** to support the ERP alternative. The Army must be willing to fund very likely cost increases in order to have a communications infrastructure that supports not only the supply and maintenance functionality in the ERP software but the other CSS functionalities that will interface with ERP as well. **Communications infrastructure must be supported and funded in concert with development and deployment of the ERP.**

The following extracts from the AoA also emphasize our concerns.

Comments from page 37 of the document

Ø Implementation of a commercial ERP product in GCSS-Army will not result in a true 'enterprise' database because only the supply and maintenance data will be included in the ERP database. Other CSS areas (i.e., personnel, medical, finance, and transportation) are being modernized as part of other programs (e.g., DIMHRS, TMIP, and TC AIMS II) and would not be included in a GCSS-Army implementation of a commercial ERP. A data sharing arrangement (which is already being worked with the current custom code solution) must be possible.

From page 40 of the document

Ø Need for middleware to interface with disparate CSS databases at the joint level (DIMHRS, Finance, TMIP, and MP system). Non-standard data structures require middleware bolt-ons to facilitate interfaces between disparate databases. While this will be an issue for either a GOTS solution or a COTS ERP solution, there is concern that compatibility with COTS solutions will increase the middleware requirements for both sides of an interface. Heavily dependent on the EDI standard employed.

Ø Incompatibility of current commercial ERP software with the unique information requirements of CSS areas such as: chaplain, legal, mortuary affairs. Expensive, unique software applications may have to be developed to accommodate these functionalities

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level.

GAIT comment: This effort would be an independent blueprinting and development effort. It WOULD NOT be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

MEDCOM Response: MEDCOM does not support funding a separate ERP pilot program that is not related to WLMP and not related to the GCSS-A tactical system (assumes that GCSS-A/T is a custom application). If GCSS-A/T continues as a custom developed system, there would be two separate and unrelated ERP efforts ongoing at wholesale and at installation level and custom development at GCSS-A/T that potentially is not related as well. This is unnecessary fragmentation of the programs.

MEDCOM supports funding of a separate ERP pilot program at the installation level if GCSS-A/T opts to use an ERP solution. In this scenario, there is a continuum of support using an ERP system from tactical through installation to the wholesale level.

MEDCOM is concerned that the GCSS-A management module or interface to the ERP system does not become the bill payer for this UFR. The GCSS-A management module should have priority, in our opinion, because it provides critical tactical interfaces for all CSS systems.

Vote Three -- Whether WLMP should extend its processes to:

*** Installations; or**

*** Tactical SSAs**

GAIT comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

MEDCOM Response: MEDCOM supports extending the WLMP process to the tactical level if proper interface costs are supported and with proper blueprinting of the retail processes that support local customers . The MEDCOM is restricted/constrained by the requirement to use the Joint, Defense Medical Logistics Standard System (at the installation level) and the Theater

Medical Information program (which at the tactical level integrates DMLSS) . Whatever the solution is the funding for the interface to the DMLSS and TMIP-Army programs must be funded or all medical actions/transactions will be stove-piped.

EXHIBIT XXXX - COMBINED ARMS SUPPORT COMMAND (CASCOM) VOTES AND COMMENTS

-----Original Message-----
From: Aldridge, Kenneth D. COL
Sent: Friday, March 29, 2002 3:35 PM
Cc: Pennington, Hozie W. LTC

CASCOM Vote:

GAIT: Reference GAIT VTC, 25 March 2002. The following note is to emphasis key points underlying the alternatives upon which you have been asked to vote.

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:

- **Custom development; or**
- **COTS ERP**

Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

Response: Custom Development
Comment: Stay the current course. There are too many unknown DTLOMS impacts and the real-time communications infrastructure proposed to support the commercial solution needs much evaluation. To this point, the Army has required information systems to have the ability for local operations when long-haul communications are not available to the rear. Once the ERP is successful at AMC and an Army installation review the progress and determine the tactical Army applicability based on those results.

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level.

Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

Response: Fund and conduct a robust pilot at the installation level.

Vote Three -- Whether WLMP should extend its processes to:

- **Installations; or**

- **Tactical SSAs**

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

Response: Extend WLMP to the installation level following the SSF concept. Hold off on any decision regarding tactical implementation until success at installation and above. Tactical implementation may require a different "enterprise." As an additional note: Extending WLMP processes is not meant to imply which contractor or organization would lead that effort.

ATCL-S April 6, 2002

EXHIBIT XXXXI - U.S. ARMY MATERIEL COMMAND (AMC) VOTES AND COMMENTS

-----Original Message-----
From: Scheuble, Larry Civ AMCLG01
Sent: Monday, April 01, 2002 7:48 AM
To: 'penningtonh@lee.army.mil'

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T is "Custom development for the three modules being worked now (SPR, Maintenance, and Management.) However the installation requirements (SAMS I/TDA) for the maintenance module should not be built in this custom software. "

Comment: This question is central to the reason for the Abbreviated AOA and is well explained in the AOA document. Given your organization's mission, which alternative seems best able to meet your requirements .

Response. First of all AMC agrees with CASCOM that there is not enough data in the AOA to justify abruptly changing the Army's Logistics Automation modernization strategy. In addition AMC does not feel an ERP solution can be implemented at the tactical level within the the schedule and cost the PWC study and subsequent information indicates. This would result in an additional delay in getting much needed new software to our soldiers. At this point in the decision process we have a lengthy list of risks which the three AOA studies point out and no specifically identified ROIs.

In addition AMC feels this decision IAW with the GCSS-A Prime Directive should be a GCSS-Army GOWG decision.

Before we could take it to the GOWG we should be able to address all of the PWC prerequisite questions and we should be able to address or at least identify the specific returns on investment and advantages we will achieve by assuming this risk.

Examples of AMC concerns with a sudden switch in modernization strategy to a tactical ERP include:

1. What is our change management process going to be, everyone generally supports radical change until it affects them. Who will be the final decision authority and how will we frame and present the decisions? Will the ARMY commit to a SENIOR project officer with the authority to make decisions which the CSA/VCSA/G3/G4/G6 will enforce? Will TRADOC accept doctrinal changes and will HQDA support force structure changes when necessary?
2. Should we expect the ARMY to answer how the blueprinting SME bill (personnel and tdy) will be paid before we commit to this strategy?

3. Should we get a commitment from the G6/VCSA to fund the requisite satellite equipment and air time?
4. Should we get a validation from the TRADOC Signal center that the satellite plan will provide the needed coverage?
5. How are we going to address the project oversight concerns the PWC study and briefing say is absolutely necessary.
6. How do we get the acquisition authority to move at any where near the speed to achieve the timeline we are on now
7. Since GCSS-Army is currently an ACAT 1AC program on a list to become an ACAT 1D program are we sure this level of change to the materiel solution will not cause a shift from our current Milestone II decision back to a Milestone A decision point?
8. Shouldn't we get some level of detail on the business processes being modernized, which business practices would be adopted, which metrics for improvement we will use to judge the benefits, and some idea of the business case we will use to articulate our decision to GAO, AAA, OSD, Congress etc. The business case needs to address what improvements will be made and how they affect our operating costs/effectiveness.

AMC is obviously a supporter of ERPs but they are not a panacea and need to entered into only after you understand the specifics of what you are getting into.

Vote Two -- YES The Army should fund and execute an ERP pilot program at the Installation level and immediately move to lay in funding stream to field at Installation and "Retention Boxes" level across the Army by end of FY05.

Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

The first question at the installation level is what business processes will be included in the blueprint and implementation? This gets back to how the installations will be managed, who will be making these decisions, what their intended role as a power projection platform will be, what other development efforts we are willing to absorb, and what this will do to cost and schedule.

If we are focusing on the DOL Supply and Maintenance mission areas, then this is the decision that was made last year. It does not make sense from an ERP implementation process perspective to start an independent blueprinting process when the Army's stated objective is to build an end-to-end enterprise solution. Integration will best be achieved by integrating the functional processes. We have to integrate the basic national business processes being developed in WLMP, SSF, NMM, and whatever BPR is done within the installation blueprint. This will be virtually impossible starting fresh. The WLMP blueprint must be the start point and the foundation for the installation blueprint.

Vote Three -- Yes to tactical ssa and to tactical ammunition units. No to tactical DS Maintenance units. QUALIFIER -- the extension to the tactical SSA and ammunition applications will be dependent upon the installation pilot, blueprinting, and DTLOMS analysis.

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

The Army'sWLMP ERP core enterprise solution should be extended to the Installation level and immediately move to lay in funding stream to field at Installation and "Retention Boxes" level across the Army with custom build at the deployable TO&E/MTO&E levels of the Army. Extension of Army's WLMP ERP core enterprise solution should be fielded to the Army's "Training Fleet" installations in FY03 and operational forces' "Power Projection" installations beginning in FY04 (high volume/pay-off sites first in each group). This will build upon the national level modernization, standardize the way we manage our training and power projection, help achieve potential ROI asap.

AMC is not saying that this work has to be accomplished under the WLMP contract. The WLMP contract vehicle can be made available if that is considered cost effective for the ARMY. The products, lessons learned, and business rules will be made available as a minimum.

EXHIBIT XXXXII - U.S. ARMY TRAINING AND DOCTRINE COMMAND (TRADOC) VOTES AND COMMENTS

From: Resnick, Al, SES [mailto:allan.m.resnick@us.army.mil]
Sent: Friday, March 29, 2002 1:31 PM
To: Pennington, Hozie W. LTC
:

Here's our vote on the three issues identified in the VTC of 25 Mar 02 are as follows:

Vote 1 -- Which development alternative is deemed most appropriate for GCSS-Army/Tactical? **Ans**: The **custom development** currently underway is deemed the most appropriate in light of the lack of concrete information on ERPs, their business processes, and their flexibility to execute Army doctrine. Frankly, in spite of the noble effort to perform the analysis, the ERP is too ill-defined.

Vote 2 -- Should the Army fund and execute an ERP pilot program at installation level? **Ans**: As a logical follow-on to our first response, the answer to this is **NO**. If, however, additional external resourcing can be found to support a pilot program, then we might reconsider -- in spite of the fact that a pilot may aid the Army in understanding an ERP and eventually its impact on the tactical Army.

Vote 3 -- Should current WLMP extend its processes to the installation or Tactical SSAs. **Ans**: Extend current WLMP to the **installation** because this option assists AMC in managing SSF and further assists the Army in better defining ERP, while still insulating tactical units (SSAs) from any adverse effects.

.
If you require additional information you may contact Mr. David Smith at (703) 788-4288/DSN 680-4288, smithd4@monroe.army.mil

Al Resnick
ADCSCD

EXHIBIT XXXXIII - U.S. ARMY RESERVE COMMAND (USARC) VOTES AND COMMENTS

From: Christopher, Bobby COL (USARC DCSLOG) [mailto:Christop@usarc-emh2.army.mil]
Sent: Friday, March 29, 2002 1:28 PM
To: 'H. Pennington'

Question 1: Custom or SAP?

- *Position*: SAP for Installations and Custom for Tactical (TOE and Support Structure)

- *Rational*:

-- Flexibility

* USAR 95% of time Peacetime role; 5% mobilized (approx). USAR has differing requirements in peacetime, i.e., FEMA, local, extensions to service criteria, etc. SAP is a very demanding and rigid program that is not prone to conformability without extensive software changes that require the SAP community approval. Uniqueness of the component is difficult to address in a single ERP.

* SAP is inherently inflexible. Changing the baseline to account for uniqueness is very difficult without the approval of the entire SAP community since they all share in the same baseline. The standard answer is to address the issue by attaching a "bolt-on" product which is very expensive and can involve extensive interface. Whenever possible, "bolt-ons" are discouraged.

* Changes to SAP cannot be address in a timely manner. All changes to the baseline must go before the international CCB and are voted on by all users. These users are composed of, mostly, commercial businesses. In other words, we are not the masters of our own future when it comes to SAP.

-- Training Requirements

* SAP is very dependent on user training. The USAR has a very high rate of turnover. Retention of training is dependent on use of the product. The USAR soldier is part-time. Retention of training is a major issue in the USAR even without including the turnover rates.

-- Communication

* The Army's communication system is too immature to support SAP requirements.

* Dedicated and assured commo, as required by SAP, is not a reality in the USAR. The USAR structure is not part of the "installation". We're spread far and wide in small and large towns across the U.S.

-- Funding

* It is questionable if SAP can address the different colors of funding, i.e., OMA, OMAR.

Question 2: Army fund and execute ERP pilot at Installation?

- ***Position***: **Fund and execute at commodity installations only!**

- ***Rational:***

--Mobilization/Power Projection installations should be compatible with the tactical Army. The tactical Army is much more diverse and dynamic than the wholesale Army which is more closely related to civilian commercial operations. WLMP (SAP) is more appropriate for commercial activities.

-- In addition to question 2 response above, extending WLMP down to our DS activities both MTOE and TDA would effectively, disconnect our command structure. Our support activities, AMSAs and ECSs, serve as the USAR support maintenance activity which performs many levels of maintenance. These activities are directly responsible to our support structure and should not be included in the national AMC mission.

Question 3: WLMP extend to Installations or Tactical?

- ***Position:*** **Fund and execute at commodity installations only!** Above rational applies

Notes:

USAR concerns with ERP:

a. The implementation of ERP may not accommodate the budget processes of the USAR **(OMAR and RPA) and the cost associated with sustainment of the ERP solution**.

b. The ERP requires significant communication infrastructures and bandwidth that is not in placed today in any of the components. Communications must be definite, and assured for an ERP solution to be successful.

c. The availability of information at multiple levels could undermine the ability of the local commanders to execute local requirements. In the USAR, commanders of most of our units are man-day soldiers and drill only twelve times a year. The cultural changes in management, along with leadership development, are dramatic under ERP and are difficult to support with our citizen soldiers.

d. The USAR is more widely dispersed than any other components. As an example, the USAR has eleven Regional Support Commands (RSC) in CONUS and two OCONUS. The RSCs provides Base Operation Support to units within its designated area of responsibility. Each of the regions is as large as one Active Component Corps region. The USAR has seven Training Divisions (IT), five Training Support Divisions that are integrated with both Active and Reserve organizations and numerous direct reporting units. Some of these units are multi-component, integrated or split-based.

e. The ERP must accommodate all types of personnel in the USAR (Drilling Reservist, Army Guard & Reserves, Civilian Unit Technicians and Individual Mobilization Augmentees).

f. The USAR has both COMPO 1 (Active) and COMPO 3 (Reserve) organizations within its force structure. The USAR has Area Support Maintenance Sites that does Organizational Maintenance for our fleet and is operated by civilian technicians. We have Equipment Concentration Sites (ECS) that have storage, supply and maintenance responsibilities for unit equipment that cannot be maintained at the units' home station due to the lack of full-time personnel. An ERP solution must be able to accommodate both structures.

g. The EPR solution may not be able to accommodate **congressional requirements** on how the USAR must account for its equipment inventories.

EXHIBIT XXXXIV - MILITARY DISTRICT OF WASHINGTON VOTES AND COMMENTS

From: Hahl, Michael Mr MDW
Sent: Friday, March 29, 2002 2:27 PM
To: 'penningtonh@LEE.ARMY.MIL'

MDW's vote is as follows:

GAIT: Reference GAIT VTC, 25 March 2002. The following note is to emphasis key points underlying the alternatives upon which you have been asked to vote.

Vote One -- The software development alternative deemed most appropriate for GCSS-A/T:

* **Custom development; or**
* **COTS ERP**

Comment: This question is central to the reason for the Abbreviated AoA and is well explained in the AoA document. Given your organization's mission, which alternative seems best able to meet your requirements?

Response: COTS ERP. MDW supports the COTS ERP solution for GCSS-Army/Tactical. MDW concurs with the comments of FORSCOM, USAREUR, and others. A phased approach to ERP implementation is required. Installations/Garrisons must be proven first, before we look to the tactical unit implementation. As pointed out by Mr. Popp, EUSA, work on SPR, and the MGT Module for that matter, must stay on track. The question of sustainment cost to the operator and who pays that bill has not been answered to MDW's satisfaction. Under current STAMIS practices, the cost is born by PEO EIS, (formally PEO-STAMIS).

Vote Two -- Whether the Army should fund and execute an ERP pilot program at the Installation level.

Comment: This effort would be an independent blueprinting and development effort. It would not be related to WLMP efforts. Its focus would be on ascertaining if Installation processes could best be met with a commercial ERP application.

Response: MDW supports the Army's funding and execution of an installation ERP solution. This process must be as detailed that which AMC/WLMP has experienced.

Vote Three -- Whether WLMP should extend its processes to:

* **Installations; or**
* **Tactical SSAs**

Comment: This is related to the development of an end-to-end integrated system that extends the WLMP solution to the tactical SSA and DS maintenance to follow the AMC mission thread under SSF and NMM.

Response: No to both. MDW echoes the comments of USARPAC, USAREUR, and EUSA. Installation/garrison & Tactical level SSA missions, types of support and business processes are major differences from that at the wholesale level.

Added comment: Within the next six months, there will be a "new" player in this game. The program, known as Transformation of Installation Management, (formerly called Centralized Installation Management), becomes effective 1 Oct. 2002. Under this program, the MACOMs on longer "own" installations/garrisons. However, many of the POC's we now deal with as MACOM representatives, may be assigned to this new organization.

EXHIBIT XXXXV - U.S. ARMY INTELLIGENCE COMMAND (INSCOM) VOTES AND COMMENTS

From: Williams, Zackary R Mr HQ INSCOM [SMTP:zrwilli@vulcan.belvoir.army.mil]
Sent: Wednesday, April 03, 2002 11:17 AM
To: 'sempekb.contractor@LEE.ARMY.MIL'
Subject: RE: Analysis of Alternatives - Voting Info

INSCOM abstain on the question

ZACKARY R. WILLIAMS
HQ, INSCOM
ACofS, G4
Chief, Log Automation Office
DSN 235-1126
Comm: (703) 706-1126

[Whereupon, at 4:09 p.m., the subcommittee adjourned.]

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