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United States Government Accountability Office
Washington, DC 20548

July 25, 2007

Congressional Committees

Subject: *Military Personnel: The Navy Has Not Provided Adequate Justification For Its Decision to Invest in MCTFS*

In June 2006, the Navy completed a feasibility assessment of both the Marine Corps Total Force System (MCTFS)—the Marine Corps' integrated personnel and payroll system—and the Defense Integrated Military Human Resources System DIMHRS. Based on the results of this assessment, the Navy expressed a preference to deploy MCTFS instead of DIMHRS. In August 2006, the Defense Business Systems Management Committee (DBSMC)[1] made a business decision to accept the Navy's plan to proceed with the development and implementation of MCTFS. However, the Department of Defense (DOD) had already committed to deploy DIMHRS to provide a joint, integrated, standardized military personnel and pay system across all military components. According to the department, as of September 2006, it had spent over $668 million[2] on the program.

The John Warner National Defense Authorization Act for Fiscal Year 2007, Pub. L. No. 109-364, §324 (2006) directed the Secretary of the Navy to prepare a report about MCTFS, including (1) an analysis of alternatives to MCTFS, including a comparison between the costs of deploying and operating MCTFS within the Navy and the cost of including the Navy in DIMHRS; (2) a business case analysis of the costs and benefits to both the Navy and DOD of the alternatives to MCTFS considered in the first objective; and (3) an analysis of the compatibility of MCTFS with the department's business enterprise architecture.[3] The Navy concluded in its report—which we received on April 25, 2007—that (1) either MCTFS or DIMHRS could provide basic personnel and pay capability for the Navy uniformed force at approximately equivalent cost; (2) the DIMHRS alternative has substantially higher risks on cost, schedule, and function because MCTFS is already operational; and (3) MCTFS is fully compatible and compliant with the department's business enterprise architecture.

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[1] The Deputy Secretary of Defense established the DBSMC, which oversees DOD's business transformation, and tasked it with responsibility for overall departmental transformation pursuant to 10 U.S.C. § 186.

[2] The cost figure includes costs incurred by the Enterprise Program Management Office-DIMHRS, the Army, the Air Force, the U. S. Marine Corps, and the Defense Finance and Accounting Office; it does not include costs incurred by the Navy since program inception.

[3] An enterprise architecture provides a clear and comprehensive picture of an entity, whether it is an organization (e.g., a federal department) or a functional or mission area that cuts across more than one organization (e.g., human resources). It is an essential tool for effectively and efficiently engineering business processes and for implementing and evolving systems that support the business processes.

The Act directs the DBSMC to determine—not sooner than 120 days after April 25, 2007—whether the deployment of MCTFS by the Navy is in the best interest of DOD.

The Act directed us to review the Navy's report and provide a written assessment to the congressional defense committees and the Chairman of the DBSMC within 90 days of our receipt of the Navy's report. Specifically, we determined whether the Navy in its congressionally mandated report has justified its decision to invest in MCTFS. As part of our review, we also determined whether the department's business enterprise architecture was sufficient to guide and constrain the acquisition of MCTFS.

Scope and Methodology

To perform our assessment, we reviewed the Navy report,[4] which summarized the results of the analysis of alternatives, the business case analysis of the costs and benefits of the alternatives, and the analysis of the compatibility of MCTFS with the department's enterprise architecture. Using our Cost Assessment Guide and relevant Office of Management and Budget (OMB) criteria,[5] we evaluated the analysis of alternatives and the business case analysis. According to these criteria, the decision to invest in any system should be based on reliable analyses of estimated costs and expected benefits over the life of the **system**. Best practices state that agencies should prepare a business case analysis—a comparative analysis that presents facts and supporting details about competing alternatives **(i.e., analysis of alternatives)**. A business case analysis **should** consider all life-cycle costs and nonquantifiable as well as quantifiable benefits. It should consider all possible alternatives and should not be developed solely to support a predetermined solution. A business case analysis should be rigorous enough that independent auditors can review it and clearly understand why a particular alternative was chosen. We evaluated the estimates that the Navy used in the analysis of alternatives and the business case analysis to determine whether these estimates were comprehensive, accurate, well-documented, and credible. Our Cost Assessment Guide considers an estimate to be: (1) 'comprehensive' if it includes all relevant cost elements; (2) 'accurate' if it is unbiased and neither overly conservative nor overly optimistic and is based on an assessment of the costs most likely to be incurred; (3) 'well-documented' if the it can be traced back to the documentation, which should include the source of the data, detailed calculations and results, and explanations of why a particular method or reference was chosen; and (4) 'credible' if limitations of the data and assumptions are documented.

Using applicable guidance,[6] we evaluated the efforts taken by the Navy to show the extent to which MCTFS is compliant and compatible with the architecture. This guidance states that agencies should develop and use enterprise architectures to

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[4] Department of the Navy, *Report from the Secretary of the Navy to the Congressional Defense Committees and the Comptroller General on the Marine Corps Total Force System (MCTFS)*, April 2007.

[5] See GAO, *Cost Assessment Guide: Best Practices for Developing and Managing Program Costs*, OMB Circular A-11, and OMB Circular A-94.

[6] Office of Management and Budget (OMB) Capital Programming Guide, Version 2.0 ; GAO-03-584G; Department of Defense, *DOD IT Business Systems Investment Review Process, Business Enterprise Architecture (BEA) Compliance Guidance;* and Department of Defense, *Department of Defense Architecture Framework, Version 1.5, Volume 1.*

guide and constrain their investment decisions. We obtained and analyzed the documents provided—such as MCTFS architecture products, the results of the Navy's analysis of MCTFS using the Architecture Compliance and Requirements Traceability Tool, and a Gartner, Inc. report[7]—the technology standards, and version 4.0 of DOD's business enterprise architecture.

We interviewed officials to discuss the results of our work and to obtain explanations for the discrepancies we identified. Specifically, we interviewed officials from the following:

- Several organizations within the Department of the Navy, including the Office of the Chief of Naval Operations; the Assistant Secretary of the Navy Financial Management and Comptroller; the Manpower and Reserve Affairs, U. S. Marine Corps; and the Naval Center for Cost Analysis. These officials were responsible for developing the analysis of alternatives, the business case analysis, and the analysis of the compatibility of MCTFS with the department's business enterprise architecture.
- The Enterprise Program Management Office-DIMHRS, which is responsible for acquiring and implementing DIMHRS, including the DIMHRS Enterprise Deputy Program Manager.
- The Personnel and Readiness Information Management Office, which is responsible for developing the DIMHRS architecture, including staff supporting the investment management process.
- The Business Transformation Agency, which is responsible for maintaining and updating the department's business enterprise architecture, including the chief architect for the Business Mission Area.

Our work was conducted from April through July 2007 in accordance with generally accepted government auditing standards.

Summary

In its report, the Navy has not adequately justified its decision to invest in MCTFS. Specifically, the analysis of alternatives and the business case analysis of both MCTFS and DIMHRS were unreliable, because the cost and benefit estimates used in these analyses were not sufficiently comprehensive, accurate, documented, or credible. The Navy's analysis shows that MCTFS is sufficiently compatible with DOD's evolving business enterprise architecture to allow the Navy to begin acquisition.[8] However, we found that the architecture lacks sufficient content to be used effectively to guide and constrain the acquisition of MCTFS. DOD officials from the Navy, the Marine Corps, and the Business Transformation Agency[9] provided oral comments on the facts presented in this report and we have incorporated these comments as appropriate.

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[7] Gartner, Inc., *A Report for U. S. Marine Corps and Defense Finance and Accounting Service: Marine Corps Total Force System Program Evaluation (*June 19, 2006).
[8]Our analysis determined the extent to which MCTFS was compatible with version 4.0 of the department's business enterprise architecture.
[9]The Business Transformation Agency is responsible for leading and coordinating business transformation efforts across the department.

Analysis of Alternatives and Business Case Analysis Were Unreliable

The Navy's report included an analysis of alternatives and a business case analysis of MCTFS and DIMHRS; however, these analyses were unreliable because the cost and benefit estimates used for these analyses were not sufficiently comprehensive, accurate, documented, or credible. For example, the cost estimates were not comprehensive, because they did not include all possible alternatives. For example, the Navy's report included a third alternative that involves deploying MCTFS initially and then deploying DIMHRS after the Army and Air Force have successfully implemented it. However, the analysis of alternatives and the business case analysis did not include cost estimates for this alternative. In March 2007, DBSMC tasked the Navy to prepare the cost and benefit estimates for this alternative, after which Navy officials said that they discussed it with the Secretary of the Navy. These estimates were based on those that had been used for both the MCTFS and DIMHRS alternatives and we had concluded that these estimates were unreliable. The cost estimates were not accurate, because the Navy excluded the third alternative, which was more costly than the MCTFS and DIMHRS alternatives. This exclusion skewed the results of the analyses by showing that the MCTFS alternative was the least costly solution.   The cost estimates were not well-documented, because source data was not provided and the calculations performed for several cost elements were not explained. The cost estimates were not credible, because there were neither cross-checks of these estimates nor a current independent cost estimate; both of these are necessary in order to determine whether a different estimating method would have produced similar results.

Moreover, the analyses based on these cost estimates did not take into account the following risks: (1) the potential impact of moving MCTFS development operations from Kansas City to Indianapolis as part of the Base Realignment and Closure 2005 actions and (2) the potential impact of the contractor discontinuing its support of DIMHRS after 2013, as planned. A Navy official responsible for MCTFS development operations stated his intent to delay the closing of the Kansas City site as long as possible in order to mitigate its impact on MCTFS. However, this official did not provide documentation of his authority to carry out this intent or of the Navy's plans for doing so within the time limitations established for the Base Realignment and Closure 2005 actions. After the Navy issued its report, the contractor changed its policy and stated its intent to support DIMHRS indefinitely; however, this support will be limited. For example, 'sustaining support' does not include key services, such as new updates, product fixes, security alerts, critical patch and regulatory updates, and certification of DIMHRS with new products developed by the contractor. It is unclear what the costs, if any, will be for this sustaining support. However, the contractor's change in policy is not a binding legal agreement; the contractor could later decide to discontinue its support of DIMHRS or increase the cost prohibitively for sustaining support. Since the accuracy of the cost estimates is in question, the benefits or cost savings to be realized are also in question.

According to best practices,[10] the decision to invest in any system should be based on reliable analyses of estimated costs and expected benefits over the life of the system. Best practices state that agencies should prepare a business case analysis—a comparative analysis that presents facts and supporting details about competing alternatives. A business case analysis considers all life-cycle costs and quantifiable and nonquantifiable benefits. It should consider all possible alternatives and should not be developed solely to support a predetermined solution. A business case analysis should be rigorous enough that independent auditors can review it and clearly understand why a particular alternative was chosen.

Navy officials said that the report did not include the strategic alternative showing the Navy's intent to ultimately transition to DIMHRS because the mandate did not require them to do so. However, best practices require that an agency consider all possible alternatives when preparing a business case analysis, so this alternative should have been included in the report. In November 2006, the Navy had tasked the Naval Center for Cost Analysis to develop cost estimates for the business case analysis to be included in the report by February 2007. Naval Center for Cost Analysis officials said that this deadline give them adequate time to meet best practices for developing comprehensive, accurate, well-documented, and credible cost estimates. These officials stated, and we agree, that it typically takes 6 months to develop reliable cost estimates. DIMHRS program officials stated that the cost and benefit estimates the Navy used in its analyses were outdated and did not reflect the current DIMHRS program. They also stated that they had not been contacted by the Naval Center for Cost Analysis to provide updated information for the Navy report. However, officials from the Naval Center for Cost Analysis provided documentation showing that they had in fact contacted DIMHRS program officials and that these officials had refused to answer programmatic and technical questions about the DIMHRS program. Because the analyses were unreliable, Congress and the DBSMC cannot be assured that the most cost-effective solution will be selected.

MCTFS Is Compatible with the Business Enterprise Architecture, but the Architecture Is Insufficient to Guide Investment Decisions

The Navy's analysis of the compatibility of MCTFS with the department's business enterprise architecture was sufficient for the Navy to begin acquisition of the system. However, we found that the architecture lacks sufficient content to be used effectively to guide and constrain investments for systems such as MCTFS. As a result of this lack of architectural constraint on systems, the Navy determined the architecture requirements MCTFS will need to meet to fit within the department's vision as outlined in the evolving architecture. According to best practices and DOD guidance,[11] agencies should develop and use enterprise architectures to guide and

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[10]GAO, *Cost Assessment Guide: Best Practices for Developing and Managing Program Costs,* July 2007; Office of Management and Budget (OMB) Circular A-11, *Preparation, Submission, and Execution of the Budget, Part 7: Planning, Budgeting, Acquisition, and Management of Capital Assets* (June 2006); and OMB Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs* (Revised Oct. 29, 1992).
[11]Office of Management and Budget (OMB) Capital Programming Guide, Version 2.0 (June 2006); GAO, *Information Technology: A Framework for Assessing and Improving Enterprise Architecture Management (Version 1.1),* GAO-03-584G (Washington, D.C.: April 2003); Department of Defense, *DOD IT Business Systems Investment Review Process, Business Enterprise Architecture (BEA) Compliance Guidance, Version 1.0 (Apr. 10, 2006);* and Department of Defense, *Department of Defense Architecture Framework, Version 1.5, Volume 1 (Apr. 23, 2007).*
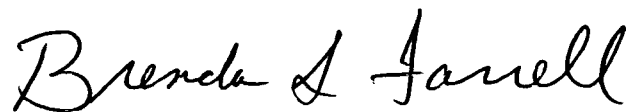
constrain investment decisions. Senior DOD and Navy officials acknowledged that the architecture cannot be used at this time to effectively guide and constrain component-level system investments such as MCTFS. As a result, there is a risk that the department will not be able to achieve its vision to deploy standard systems such as DIMHRS. By deploying standard systems, DOD may be able to address the weaknesses in its current system environment, which is comprised of numerous systems that are duplicative in functionality, are not interoperable, are unnecessarily costly to maintain and interface, and do not optimize mission performance and accountability.

Conclusion

Our assessment of the Navy's report shows that the analyses are based on flawed estimates and an insufficient architecture. If the DBSMC relies solely on the Navy's report in deciding whether or not to deploy MCTFS, it risks recommending an investment decision that would not be in the best interest of DOD. As it deliberates, the DBSMC should consider the issues we have identified.

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We are sending copies of this report to selected congressional committees and the Chairman of the Defense Business Systems Management Committee. We will also make copies available to others upon request. In addition, the report will be available at no charge on GAO's Web site at http://www.gao.gov.

If your offices or staffs have any questions concerning this report, please contact me at (202) 512-3604 or by e-mail at farrellb@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to the report are listed in enclosure I.

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Enclosure – 1

List of Committees

The Honorable Daniel Inouye
Chairman
The Honorable Ted Stevens
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Carl Levin
Chairman
The Honorable John McCain
Ranking Member
Committee on Armed Services
United States Senate

The Honorable John P. Murtha
Chairman
The Honorable C.W. Bill Young
Ranking Member
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