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NATIONAL AERONAUTICS
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Long-standing Financial
Management Challenges
Threaten the Agency's
Ability to Manage Its
Programs

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Why GAO Did This Study

The Subcommittees asked GAO to testify on the status of the National Aeronautics and Space Administration's (NASA) financial management reform efforts. NASA faces major financial management challenges that, if not addressed, will weaken its ability to manage its highly complex programs. NASA has been on GAO's high-risk list since 1990 because of its failure to effectively oversee its contracts, due in part to the agency's lack of accurate and reliable information on contract spending. GAO's statement focuses on (1) NASA's key financial management challenges, (2) how NASA's financial management challenges compare with other federal agencies, (3) GAO's assessment of NASA's progress toward implementing recommendations aimed at improving its financial management system, and (4) the steps NASA must take to reform its financial management organization.

In its related report, released today, GAO recommends that NASA develop an integrated enterprise master schedule and milestones—including improvement activities and plans, dates for completion, performance measures, and clear accountability.

www.gao.gov/cgi-bin/getrpt?GAO-06-216T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Greg Kutz at (202) 512-9095 or Allen Li at (202) 512-3600.

October 27, 2005

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Long-standing Financial Management Challenges Threaten NASA's Ability to Manage Its Programs

What GAO Found

NASA's new core financial management system has not addressed many of the agency's most significant management challenges—including improving contract management, producing credible cost estimates, and producing auditable financial statements. Because NASA did not use disciplined acquisition and implementation practices, the new system lacks basic functionality—such as the ability to (1) produce transaction-level support for key account balances, (2) properly identify adjustments or correcting entries, and (3) correctly and consistently post transactions to the right accounts. In addition, NASA did not use the implementation of its new system as an opportunity to transform its operations and instead, automated many of its existing, ineffective processes. Compounding its existing problems, NASA also failed to recognize the importance and need for highly skilled, well-trained financial personnel.

Most federal agencies have been able to obtain unqualified audit opinions, while NASA's financial statements remain unauditable. However, the problems experienced by NASA in its effort to reform its financial management organization and implement a modern, integrated financial management system are not uncommon among federal agencies. In fact, many federal financial system modernization efforts have exceeded budgeted cost and scheduled delivery dates without providing the anticipated system functionality.

GAO's related report, released today, details NASA's progress toward implementing prior recommendations related to its financial management system. Overall progress has been slow, but in some areas NASA is beginning to take steps toward improvements.

NASA's Progress in Implementing GAO's Recommendations

Recommendations related to:	Closed	Partially implemented	Open
System component interoperability and enterprise architecture	1	6	23
Process reengineering and requirements definition, management, and testing	1	3	1
External financial reporting	0	0	4
Program life-cycle cost estimates and funding reserves	1	4	1
Total	3	13	29

Source: GAO.

To its credit, NASA has recognized the need to enhance the capabilities and improve the functioning of its core financial management system. Strong executive leadership will be critical for ensuring that NASA's financial management organization delivers the kind of analysis and forward-looking information it needs to effectively manage its many complex programs. Such leadership must be combined with effective organizational alignment, strategic human capital management, and end-to-end business process reform.

Mr. Chairmen and Members of the Subcommittees:

Thank you for the opportunity to discuss the financial management challenges facing the National Aeronautics and Space Administration (NASA). Since its inception in 1958, NASA has undertaken numerous programs—involving earth and space science, aerospace technology, human space flight, and biological and physical research—that have resulted in significant scientific and technological advances and enhanced the quality of life on earth. In recent years, NASA has experienced a number of setbacks with its programs and operations, including massive cost overruns associated with the International Space Station and, with the Columbia tragedy, the need for the agency to develop return-to-flight strategies and mitigate the impact of the loss of the shuttle on the construction of the space station. On January 14, 2004, President Bush outlined a bold new vision for U.S. space exploration that will set a new course for NASA. However, a key to the successful execution of this new vision is NASA's ability to address a number of long-standing financial management challenges that threaten NASA's ability to manage its programs, oversee its contractors, and effectively allocate its budget across its numerous projects and programs.

For years, NASA has cited deficiencies within its financial management systems as a primary reason for not having the data required to oversee its contractors, accurately account for the full cost of its operations, and efficiently produce accurate and reliable information needed for both management decision making and external reporting purposes. In fact, since 1990 we have identified NASA's contract management as an area of high risk, in part because the agency lacked effective systems and processes for overseeing contract spending and performance. In April 2000, NASA began its third attempt at modernizing its financial management processes and systems. The first two efforts were eventually abandoned after a total of 12 years and a reported \$180 million investment. NASA expects this current effort, known as the Integrated Enterprise Management Program (IEMP),¹ to produce an integrated, agencywide financial management system through the acquisition and incremental implementation of commercial software packages and related hardware and software components. However, in April and November 2003—3 years

¹ The effort was formerly known as the Integrated Financial Management Program (IFMP). According to NASA, IFMP was renamed to reflect the addition of program management and labor distribution.

into NASA's IEMP implementation effort and with significant investment already made in the program—we issued a series of four reports² that detailed weaknesses in NASA's acquisition and implementation strategy for IEMP. As part of the four reports we issued, we made 45 recommendations aimed at improving NASA's overall management and implementation of IEMP. Our related report,³ released today, details our assessment of NASA's progress toward implementing each of our 45 recommendations.

Our testimony today will focus on the results of our recent work related to NASA's financial management challenges and the agency's efforts to implement our recommendations related to IEMP. Specifically, I will discuss (1) NASA's key financial management challenges, (2) how NASA's financial management challenges compare with other federal agencies, (3) our assessment of NASA's progress toward implementing our recommendations aimed at improving IEMP, and (4) the steps NASA must take to reform its financial management organization.

We have performed work and issued several reports in response to legislative mandates and at the request of the House Science Committee. We also reviewed the reports of NASA's Office of Inspector General and the independent public accounting (IPA) firms that audited NASA's financial statements for fiscal year 2004 and for several previous years. However, we did not review the IPA's underlying audit work. We performed all work in accordance with U.S. generally accepted government auditing standards. Our statement today is drawn from the findings and conclusions in reports issued by GAO, NASA's Office of Inspector General, and the IPAs.

In summary, NASA currently lacks the systems, processes, and human capital needed to produce credible cost estimates, oversee its contractors

² GAO, *Business Modernization: Improvements Needed in Management of NASA's Integrated Financial Management Program*, [GAO-03-507](#) (Washington, D.C.: Apr. 30, 2003); *Business Modernization: NASA's Integrated Financial Management Program Does Not Fully Address Agency's External Reporting Issues*, [GAO-04-151](#) (Washington, D.C.: Nov. 21, 2003); *Information Technology: Architecture Needed to Guide NASA's Financial Management Modernization*, [GAO-04-43](#) (Washington, D.C.: Nov. 21, 2003); and *Business Modernization: Disciplined Processes Needed to Better Manage NASA's Integrated Financial Management Program*, [GAO-04-118](#) (Washington, D.C.: Nov. 21, 2003).

³ GAO, *Business Modernization: Some Progress Made toward Implementing GAO Recommendations Related to NASA's Integrated Financial Management Program (IFMP)*, [GAO-05-799R](#) (Washington, D.C.: Sept. 9, 2005).

and their financial and program performance, control program costs, and produce timely, reliable financial information and auditable annual financial statements. Although NASA has acknowledged the need for improved financial management systems, processes, and human capital and has begun to take steps toward achieving that goal, progress has been slow. Because NASA did not adopt disciplined acquisition and implementation practices when implementing its financial management system, IEMP, it has been forced to take actions that should have been accomplished prior to implementation—causing the agency to unnecessarily invest time and resources to rework already deployed system components in order to produce a system that meets user requirements. Further, NASA did not use IEMP as an opportunity to transform the way it does business and instead, automated many of its existing ineffective business processes. As a result, NASA has yet to address its most significant program management and external financial reporting issues—including improving contract management, producing credible cost estimates, and properly accounting for nearly \$38 billion of reported property, plant, and equipment (PP&E) and material.

NASA's Long-standing Financial Management Challenges Threaten the Agency's Ability to Manage Its Programs and Produce Auditable Financial Statements

NASA has fundamental problems with its financial management operations that not only affect its ability to externally report reliable information, but more importantly, hamper its ability to effectively manage and oversee its major programs, such as the space station and shuttle program. Since 1990, we have identified NASA's contract management as a high-risk area. This assessment has been based in part on our repeated finding that NASA does not have good cost-estimating processes or the financial information needed to develop good cost estimates for its programs, making it difficult for NASA to oversee its contracts and control costs. NASA's difficulties are rooted in an agency culture that has not viewed financial management as an integral part of the agency's program management decision process. Although NASA has acknowledged the need for improved financial management information and has begun to take steps toward achieving that goal, NASA currently lacks the systems, processes, and human capital needed to produce credible cost estimates, oversee its contractors and its financial and program performance, control program costs, and produce auditable financial statements.

NASA Lacks the Systems, Processes, and Human Capital Needed to Effectively Manage Its Programs

As currently designed, NASA's financial management system has not addressed many of the agency's most significant program management challenges—including improving contract management and producing credible cost estimates. Because program managers and cost estimators were not involved in the initial design and implementation of the core financial module, the system was not designed to meet their needs and thus, does not contain the cost data needed to manage NASA's most complex projects and programs. This, combined with NASA's failure to reengineer its contractor cost-reporting processes and a lack of trained financial management personnel, has undermined NASA's recent efforts to improve its cost-estimating and contract monitoring capabilities.

As we have reported numerous times, NASA consistently develops unrealistic cost and schedule estimates, which at least in part, contributes to the cost growth and schedule increases in many of its programs. To adequately oversee NASA's largest and most complex programs and projects and mitigate potential cost growth and schedule increases, managers need well-defined processes for estimating the cost of programs and monitoring progress against those estimates. A well-recognized technique used to monitor progress on contracts, and a long-time NASA program management requirement, is earned value management (EVM).⁴ EVM goes beyond the two-dimensional approach of comparing budgeted costs to actuals. Instead, it attempts to compare the value of work accomplished during a given period with the work scheduled for that period. Recognizing the need to establish a disciplined cost-estimating process that incorporates the concepts of EVM, NASA developed a cost-estimating handbook in 2002—the first such guidance provided to its cost-estimating community and program and project managers. However, as we reported in April 2003, the information requirements of program managers and cost estimators, which were outlined in the cost-estimating handbook, were not considered when NASA designed and implemented the core financial module—the backbone of IEMP.

When NASA deployed the core financial module in 2003, NASA's cost-estimating guidance was inconsistently applied across programs. However, NASA has recently begun to take steps to institutionalize the use of more disciplined cost-estimating and contract-management processes.

⁴ NASA requires EVM reporting and analysis for research and development contracts with a total anticipated final value of \$70 million or more, and for production contracts with a total anticipated final value of \$300 million or more.

For this initiative to be successful, as we have previously recommended, NASA will also need to reengineer its business processes—including its contractor cost-reporting requirements—and configure its financial system to accommodate the information required by program managers and cost estimators. However, NASA has yet to fully address weaknesses in its (1) contractor cost-reporting requirements and (2) financial and technical work-breakdown structure.

- Weaknesses in NASA contractor cost-reporting requirements affect NASA's ability to manage its programs and monitor contractor performance. NASA obtains contractor cost data from two primary sources—monthly contractor financial management reports (i.e., NASA Form 533), and monthly contractor cost performance reports. Both reports contain budget and actual cost data, but only contractor cost-performance reports contain the data needed to perform EVM analysis. However, NASA did not evaluate the adequacy of its existing contractor cost-reporting vehicles to determine whether the reports met the information needs of program managers and cost estimators. Instead, NASA chose to use NASA Form 533 data to populate the core financial module without considering the merits of the data contained in the contractor cost-performance reports. Consequently, the cost data maintained in the core financial module are not adequate for monitoring contractor performance for NASA's largest, most complex contracts—those requiring EVM reporting and analysis. As discussed in our related report, through an initiative known as Project Management Information Improvement (PMI²), NASA plans to enhance the core financial module to provide better project management information for decision-making purposes. As part of this initiative, NASA plans to evaluate its contractor cost-reporting policies and processes.
- The core financial module as currently implemented does not capture cost information at the same level of detail that it is received from NASA's contractors. Instead of implementing a financial-coding structure that met the information needs of program managers, NASA embedded the same financial-coding structure that it used in its legacy reporting systems in the core financial module. As a result, the availability of detailed cost data depends on the adequacy of NASA's legacy-coding structure. Therefore, in some cases, contractor-provided cost data must be aggregated to a higher, less detailed level before they are posted against the legacy financial-coding structure. To its credit, as part of PMI², NASA is in the process of addressing this issue. However, NASA is still several years away from reaping the benefit of these planned improvements.

In addition to ineffective business processes that result in inadequate management information, we reported in May 2004 that NASA's use of

disciplined cost-estimating practices and EVM analysis was undermined by a lack of trained staff and ineffective use and placement of cost analysts across the agency. According to NASA officials, at the time, resource constraints have prevented the agency from staffing many project offices with appropriate personnel to fulfill all project functions. In response to recommendations we made in our May 2004 report, NASA has begun to take action to improve the efficiency and effectiveness of its cost-estimating and EVM analysis staffs. Specifically, NASA has included requirements in its March 2005 update to NASA's Program and Project Management Processes and Requirements document that should facilitate efficient and effective use of cost-estimating EVM analysis staff. Further, according to NASA, it plans to provide both awareness briefings and in-depth training to project management and cost-estimating and analysis personnel to ensure understanding and knowledge of NASA's cost-estimating and program management policies and procedures. However, because these initiatives have only recently begun, we cannot determine to what degree these efforts will enable NASA to provide credible cost estimates.

As discussed in our related report, released today, NASA has recognized the need to enhance the capabilities of the core financial module in order to better serve its program management and cost-estimating communities. As NASA proceeds with its planned improvements, it will be critical that the agency address weaknesses in its financial management systems, processes, and human capital in a comprehensive manner. Anything short of this will continue to put NASA's programs at risk of cost and schedule overruns.

Ineffective Systems and Processes and Inadequately Trained Financial Management Personnel Hamper External Financial-Reporting Efforts

NASA's core financial module—the backbone of IEMP—does not currently address many of the agency's most challenging external reporting issues—including problems related to budgetary accounting and property accounting. NASA's independent financial statement auditors disclaimed an opinion on NASA's fiscal year 2003 and 2004 financial statements. The disclaimer resulted from NASA's inability to provide the auditors with sufficient evidence to support the financial statements throughout the fiscal year and at year end. Further, material weaknesses were found in NASA's controls for: (1) financial systems, analysis, and oversight used to prepare the financial statements; (2) reconciling differences in Fund Balance with Treasury; (3) assuring that PP&E and materials are presented fairly; and (4) securing the computing environment that supports IEMP. Although many of these material weaknesses and NASA's difficulty in producing auditable financial

statements can be linked to IEMP, weaknesses in NASA's business processes and human capital management are also factors. Based on our review of NASA's fiscal year 2005 interim financial statements, problems associated with NASA's financial management persisted during fiscal year 2005.

Although NASA has been working to stabilize the core financial module since it was deployed in June 2003, NASA has yet to produce auditable interim or annual financial statements. In fact, as part of its report disclaiming an opinion on NASA's fiscal year 2004 financial statements, NASA's independent auditor reported that the core financial module was unable to (1) produce transaction-level detail in support of financial statement account balances, (2) identify adjustments or correcting entries, and (3) correctly and consistently post transactions to the right accounts. These are basic system requirements that are integral to the effective functioning of a financial management system. For this and other reasons, for fiscal year 2004, NASA's auditor found that NASA's financial system did not comply substantially with the requirements of the Federal Financial Management Improvement Act of 1996 (FFMIA).⁵ FFMIA stresses the need for agencies to have systems that can generate timely, accurate, and useful financial information with which to make informed decisions, manage daily operations, and ensure accountability on an ongoing basis. NASA's ongoing inability to meet the basic requirements of FFMIA is central to our reporting of NASA's contract management as an area of high risk.

Because NASA's core financial module does not meet basic federal financial management system requirements, NASA was unable to provide support for certain fiscal year 2004 financial statement balances including accounts payable and undelivered orders. Additionally, NASA was unable to provide the auditors with subsidiary listings of cash receipts and cash disbursements to support its budgetary outlays during the fiscal year. Finally, according to the auditor's report, NASA management continues to identify certain transactions that are being posted incorrectly due to improper configuration of the core financial module. Based on our review of NASA's fiscal 2005 quarterly financial statement notes, many of these

⁵ Pub. L. No. 104-208, div. A., § 101(f), title VIII, 110 Stat. 3009, 3009-389 (Sept. 30, 1996). FFMIA requires CFO Act agencies to implement and maintain financial management systems that comply substantially with federal financial management system requirements, applicable federal accounting standards, and the U.S. Government Standard General Ledger at the transaction level. FFMIA also requires the auditors of agencies' financial statements to report on such compliance.

same problems remain. For example, due to functionality and configuration issues, the system continues to create inappropriate transactional postings which result in abnormal balances and misstatements in unobligated balances and other budgetary accounts. In addition, due to data integrity issues from fiscal years 2003 and 2004, the opening balances for many budgetary and proprietary accounts in fiscal year 2005 are misstated.

Similarly, as part of our recent work assessing NASA's controls over travel and the use of its passenger aircraft,⁶ NASA was unable to provide us with timely, reliable data and support for amounts spent on travel for fiscal year 2004. After 4 months of trying to extract travel data from the IEMP system, NASA officials provided us with what they said was a complete population of travel-related disbursement transactions. However, the data provided were missing significant travel expense categories. For example, NASA had several contracts with major hotel chains to provide rooms at discount rates; however, NASA did not include the charges related to rooms purchased under these contracts as travel-related expenses. Further, although agency personnel regularly used NASA-owned passenger aircraft and other charter aircraft in support of official business travel, the cost associated with the use of these aircraft was not considered a travel expense and, therefore, the millions of dollars associated with this travel were not included in the data provided. In addition to missing data, the travel data NASA provided contained duplicate transactions and other data anomalies that made it appear as if NASA were paying the same bill multiple times, which, for those transactions we tested, was not the case.

NASA's failure to provide reliable data related to its travel disbursements is significant for three reasons. First, it illustrates the shortcomings of NASA's financial management system and NASA's ongoing struggle to provide transaction-level support for key account balances. Second, it indicates that the budget amounts NASA reports for travel each year to the Congress are significantly understated. As part of its budget submission, NASA is required to report estimated and actual obligations in terms of object classification. Object classes describe the nature of the service or article for which the obligations are first incurred. One such object class is object class 21, travel and transportation of persons. However, because

⁶ GAO, *NASA Travel: Passenger Aircraft Services Annually Cost Taxpayers Millions More Than Commercial Airlines*, [GAO-05-818](#) (Washington, D.C.: Aug. 26, 2005).

NASA does not properly classify certain travel expense categories as object class 21—including business travel on noncommercial aircraft and travel services procured using a contract—the agency travel budget is significantly understated. Finally, the problems we found with NASA’s travel data point to weaknesses in NASA’s full-cost accounting initiative. According to NASA, on October 1, 2003, NASA implemented its full-cost initiative and is currently operating in a total full-cost environment, which includes managing programs and projects in terms of their total costs; accounting for all costs as either direct or as general and administrative; and budgeting for a program or project’s full costs. However, if NASA has failed to capture and properly link travel-related costs to the appropriate object classification, it raises serious questions about the agency’s ability to properly classify other less straightforward cost categories.

As discussed previously, NASA did not use IEMP as an opportunity to transform the way it does business and instead, NASA automated many of its existing, ineffective business processes—including its process for recording PP&E and material in its general ledger. As we reported in November 2003, NASA does not appropriately capture and record PP&E and material in the core financial module general ledger at the transactions level. Instead, NASA first expenses its property acquisitions and then updates the core financial module’s general ledger using periodic summary-level manual entries—for both NASA-held and contractor-held property.

Recording PP&E and material in the general ledger at the transaction level or item level at the time NASA makes disbursement for it would provide independent control over these assets. However, just as it did with its legacy systems, NASA continues to (1) record the cost of PP&E and materials as expenses when initially incurred, (2) periodically determine which of those costs should have been capitalized, and (3) manually adjust these records at a summary level. Because NASA does not maintain transaction-level detail, the agency is not able to link the money it spends on the purchase or construction of its property to discrete property items, which is needed to provide independent control over these assets. Although NASA manually records property at the summary level for both NASA-held and contractor-held property, NASA’s most significant challenge with respect to property accounting stems from property located at contractor facilities—which accounts for \$8.5 billion or about one-fourth of NASA’s reported \$34.6 billion of PP&E and materials—because NASA must rely solely on its contractors to periodically report summary-level information on these assets to NASA. Until NASA successfully implements a single integrated system for reporting property,

and develops a methodology to identify and record capital costs as they occur, the agency will continue to experience difficulties maintaining effective control over PP&E and ensuring that it is not vulnerable to fraud, waste, and abuse.

In fiscal years 2003 and 2004, NASA's auditor reported that continued weaknesses in NASA's financial statement preparation processes resulted in major delays and errors in preparing fiscal year-end financial statements. According to the auditor's report, NASA personnel were not consistently utilizing uniform accounting processes that record, classify, and summarize information for the preparation of financial statements. Further, because significant weaknesses exist in the core financial module, NASA management must compensate for the weaknesses by implementing and strengthening additional controls that will ensure that errors and irregularities are detected in a timely manner. However, according to the auditor's report, many of these control procedures were not adequately performed. As such, the auditor recommended that NASA provide additional training for financial personnel to ensure that they understand their role in processing transactions, performing account analysis and reconciliations, and maintaining supporting documentation.

While Most Agencies Receive Unqualified Opinions on Their Financial Statements, Systems Modernization Continues to be a Challenge

The problems experienced by NASA in its effort to reform its financial management organization and implement a modern, integrated financial management system are not uncommon. While the majority of CFO Act agencies have obtained clean or unqualified audit opinions on their financial statements, the underlying agency financial systems remain a serious problem. Agencies still generally lack the capacity to create the full range of information needed to effectively manage day-to-day operations. As shown in table 1, for fiscal year 2004, auditors reported that financial management systems of only 7 of the 23 CFO Act agencies⁷ complied substantially with the requirements of FFMIA.

Table 1: Auditors' Determination of Financial Statement Opinion, Internal Controls, and FFMIA Compliance for Fiscal Year 2004

Agencies	Unqualified opinion	FFMIA compliance	No material weaknesses
Department of Agriculture	X		
Department of Commerce	X	X	
Department of Defense			
Department of Education	X		
Department of Energy	X	X	X
Department of Health and Human Services	X		
Department of Housing and Urban Development			
Department of the Interior	X		
Department of Justice			
Department of Labor	X	X	X
Department of State	X		
Department of Transportation	X		

⁷ There were initially 24 CFO Act agencies. See Pub. L. No. 101-576, §205, 104 Stat. 2838, 2842-2843 (1990). The Federal Emergency Management Agency (FEMA), one of the 24 CFO Act agencies, was subsequently transferred to the Department of Homeland Security (DHS) effective March 1, 2003. With this transfer, FEMA is no longer required to prepare and have audited financial statements under the CFO Act, leaving 23 CFO Act agencies for fiscal year 2004. For fiscal years 2003 and 2004, DHS was required to prepare audited financial statements under the Accountability of Tax Dollars Act of 2002 (Pub. L. No. 107-289, 116 Stat. 2049 (Nov. 7, 2002)). Because DHS was not a CFO Act agency, it was not subject to FFMIA for fiscal year 2004. The DHS Financial Accountability Act, Pub. L. No. 108-330, 118 Stat. 1275 (Oct. 16, 2004), added DHS to the list of CFO Act agencies and deleted FEMA, increasing the number of CFO Act agencies again to 24 for fiscal year 2005.

Agencies	Unqualified opinion	FFMIA compliance	No material weaknesses
Department of the Treasury	X		
Department of Veterans Affairs	X		
Agency for International Development	X		
Environmental Protection Agency	X	X	
General Services Administration	X	X	
National Aeronautics and Space Administration			
National Science Foundation	X	X	X
Nuclear Regulatory Commission	X		
Office of Personnel Management	X		
Small Business Administration			
Social Security Administration	X	X	X
Total	18	7	4

Source: GAO analysis.

Similarly, as shown in table 1, auditors reported that only four agencies had no material internal control weaknesses. A material weakness is a condition that precludes the entity's internal control from providing reasonable assurance that misstatements, losses, or noncompliance material in relation to the financial statements or to stewardship information would be prevented or detected on a timely basis.

NASA's problems implementing IEMP are similar to those of other agencies we have audited. Modernizing financial management systems is critical to instituting strong financial management so that the systematic measurement of performance, the development of cost information, and the integration of program, budget, and financial information for management reporting can be achieved. The federal government has spent billions of dollars developing and implementing financial management systems throughout federal agencies. However, many of these efforts have exceeded budgeted cost and scheduled delivery dates without providing the anticipated system functionality.

Although the implementation of any major system is not risk free, organizations that follow and effectively implement disciplined processes, along with effective human capital and IT management practices, can reduce these risks to acceptable levels. We have issued numerous reports highlighting the problems associated with the inability to effectively implement disciplined processes in the areas of requirements

management, testing, data conversion and system interfaces, risk management, and project management. For example, ill-defined or incomplete requirements have been identified by many experts as a root cause of system failure. As a case in point, we recently reported⁸ that the Army has encountered problems implementing a new system intended to improve depot operations. One reason that users had not been provided with the intended systems capabilities was because of the breakdown in the requirements management process. As a consequence, the Army implemented error-prone, time-consuming manual workarounds to minimize disruption to critical operations, and the financial management operations continued to be affected by systems problems.

Similarly, many of NASA's financial management problems outlined in our testimony are the result of an undisciplined, ineffective requirements management process—including the failure of NASA's financial management system to (1) post transactions to the right accounts, (2) properly identify adjustment or correcting entries, and (3) provide the information program managers and cost estimators need to monitor contractor performance and produce credible cost estimates. To its credit, as discussed in our related report released today, NASA officials acknowledged that the requirements management and testing methodology and tools used to implement the core financial module did not result in requirements that were consistent, verifiable, and traceable, or that contained the necessary specificity to minimize the requirement-related defects. NASA has recently implemented a new requirements management and testing methodology. However, NASA does not plan to use its improved requirements management process to properly define and document system requirements for already deployed IEMP modules until October 2006—when NASA plans to redefine the core financial module requirements as part of the core financial module system upgrade.

⁸ GAO, *Army Depot Maintenance: Ineffective Oversight of Depot Maintenance Operations and System Implementation Efforts*, [GAO-05-441](#) (Washington, D.C.: June 30, 2005).

NASA Has Begun Taking Steps to Implement Some of Our Recommendations for IEMP, but Progress Is Slow

Our related report, released today, details our assessment of NASA's progress toward implementing our prior recommendations related to IEMP. Overall, progress has been slow, particularly with respect to developing a well-defined enterprise architecture, which is critical for guiding and constraining NASA's investment in IEMP. However, in some other areas—such as NASA's initiative to enhance the core financial module to provide better project management information—NASA is beginning to make progress. Of the 45 recommendations we made, NASA has closed 3 and partially implemented 13; however, 29 recommendations remain open.

In 2003, we issued four reports outlining the considerable challenges NASA faces in meeting its IEMP commitments and providing NASA with the necessary tools to oversee its contracts and manage its programs. For example, in April 2003, we reported that NASA had deferred addressing the needs of key system stakeholders, including program managers and cost estimators, and was not following key best practices for acquiring and implementing the system. Then, in November 2003, we reported that NASA (1) acquired and deployed system components of IEMP without an enterprise architecture, or agencywide modernization blueprint, to guide and constrain program investment decisions; (2) did not use disciplined cost-estimating processes or recognized best practices in preparing its life-cycle cost estimates; and (3) had delayed implementation of many key external reporting capabilities.

As part of the four reports we issued on IEMP, we made 45 recommendations in the following areas: commercial system component integration; enterprise architecture development and use; risk mitigation; system requirements definition, management, and testing; external financial reporting; and program cost and schedule control. Since that time, NASA's effort has been focused primarily on trying to stabilize the core financial module, the backbone of IEMP. However, in our report being released today, we recognize that NASA has begun taking steps to implement a number of our recommendations. Table 2 summarizes our assessment of the extent to which NASA has implemented our recommendations.

Table 2: NASA's Progress Toward Implementing GAO's Recommendations

Recommendations	Closed	Partially implemented	Open	Comments
Recommendations to improve NASA's acquisition management practices. GAO-03-507	0	2	0	Key elements of dependency analysis methodology still lacking. Suitability of already acquired components not evaluated before acquiring additional components.
Recommendations regarding development and use of enterprise architecture. GAO-04-43	1	4	17	Architecture still missing important content and key architecture management processes not yet established. Already implemented system components not mapped to architecture.
Recommendations to mitigate risk associated with relying on already deployed components. GAO-03-507	0	0	6	NASA did not develop a formal corrective action plan to mitigate risks.
Recommendations regarding defining program management needs and reengineering business processes. GAO-03-507	1	0	1	Stakeholders engaged to define program management needs. Plans to reengineer contractor cost-reporting processes still several years away.
Recommendations to improve NASA's requirements management and testing processes. GAO-03-507	0	3	0	New requirements management methodology and tools acquired for future modules but core financial module requirements not yet fully defined.
Recommendations to improve external financial reporting. GAO-04-151	0	0	4	Little progress made in developing a detailed plan for delivering a financial system that substantially complies with federal standards.
Recommendations regarding IEMP program life-cycle cost estimates and funding reserves. GAO-04-118	1	4	1	Significant progress made in preparing life-cycle cost estimates but consistency and support for estimates still lacking.
Total	3	13	29	

Source: GAO analysis.

In its written comments on our draft report, NASA raised concerns that our characterization of certain recommendations as “open” did not appropriately recognize the full extent of the agency’s effort and suggested that we use instead “partially implemented” or, whenever appropriate, “closed.” We disagree with NASA’s assessment.

We considered a recommendation closed when NASA provided us with documentation that demonstrated it had fully addressed the concerns we raised in our prior reports. Recognizing that many of our recommendations may take considerable time and effort to fully implement, we considered the recommendation to be partially

implemented if the documentation provided indicated that NASA had made significant progress addressing our concerns. For recommendations we consider open, NASA's documentation indicated that the agency was either in the very early planning stages or had not yet begun to implement the recommendation.

NASA Faces Significant Challenges in Reforming Its Financial Management Operations

Successfully stabilizing and enhancing NASA's financial management system are essential to enabling the agency to provide its managers with the kind of timely, relevant, and reliable information that they need to manage cost, measure performance, and make program-funding decisions. However, NASA cannot rely on technology alone to solve its financial management problems. Rather, NASA must transform its financial management organization into a customer-focused partner in program results, but its ability to do this hinges on the sustained leadership of NASA's top executives.

Clear, strong executive leadership will be critical for ensuring that NASA's financial management organization delivers the kind of analysis and forward-looking information that the agency needs to effectively manage its many complex programs. To be effective, such leadership must also combine with effective organizational alignment, strategic human capital management, and end-to-end business process improvement. This goes far beyond merely obtaining an unqualified audit opinion and requires that agency financial managers focus on their overall operations in a strategic way and not be content with an automated system that helps the agency get a "clean" audit opinion once a year without providing additional value to the program managers and cost estimators who use its financial data.

The challenges that NASA faces in reforming its financial management operations are daunting, but not insurmountable. However, our experience has shown that improvements in several key elements are needed for NASA to effectively address the underlying causes of its financial management challenges. These elements, which will be key to any successful approach to financial management reform, include:

- addressing NASA's financial management challenges as part of a comprehensive, integrated, NASA-wide business process reform;
- providing for sustained leadership by the Administrator to implement needed financial management reforms;
- establishing clear lines of responsibility, authority, and accountability for such reform tied to the Administrator;

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- incorporating results-oriented performance measures and monitoring tied to financial management reforms;
 - providing appropriate incentives or consequences for action or inaction;
 - developing and using an enterprisewide system architecture to guide and direct financial management modernization investments; and
 - ensuring effective oversight and monitoring.

Conclusion

As NASA embarks upon the new course set by the President in 2004, a key to successfully implementing the vision of expanded U.S. space exploration is NASA's ability to address a number of long-standing financial management challenges. The lack of reliable, day-to-day information continues to threaten NASA's ability to manage its programs, oversee its contractors, and effectively allocate its budget across its numerous projects and programs. Although NASA has acknowledged the need for improved financial management systems, business processes, and human capital management and has begun to take steps toward achieving those goals, progress has been slow. By expeditiously implementing each of the recommendations contained in our related report, NASA has the opportunity to minimize the impact of past mistakes and begin to reap the benefits of operating with an integrated financial management system. Further, clear, strong executive leadership will be critical for ensuring that NASA's financial management organization delivers the kind of analysis and forward-looking information needed to effectively manage its many complex programs.

In closing, we commend the Subcommittees for holding this hearing as a catalyst for improving NASA's financial management and business processes. Continued oversight will be critical to ensuring that NASA achieves its goals for improved financial management and reformed business processes. Mr. Chairmen, this concludes our prepared statement. We would be pleased to respond to any questions that you or other members of the subcommittees may have.

Contacts and Acknowledgments

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