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AUDIT REPORT

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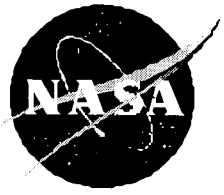
GOVERNANCE OF THE SYSTEMS, APPLICATIONS, AND PRODUCTS VERSION UPDATE PROJECT NEEDS IMPROVEMENT

OFFICE OF INSPECTOR GENERAL



National Aeronautics and
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Final report released by:

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Acronyms

CFO	Chief Financial Officer
FAD	Formulation Authorization Document
FY	Fiscal Year
IEM	Integrated Enterprise Management
IEMP	Integrated Enterprise Management Program
GAO	Government Accountability Office
M/BSIG	Management/Business Systems Integration Group
NAR	Non-Advocate Review
NPR	NASA Procedural Requirements
OCFO	Office of the Chief Financial Officer
OIG	Office of Inspector General
SAP	Systems, Applications, and Products
SVU	SAP Version Update
WBS	Work Breakdown Structure

IN BRIEF

GOVERNANCE OF THE SYSTEMS, APPLICATIONS, AND PRODUCTS VERSION UPDATE PROJECT NEEDS IMPROVEMENT

The Issue

In June 2003, NASA implemented Systems, Applications, and Products' (SAP) R/3[1] through development of the Core Financial system, the Agency-wide financial management system that is part of the Integrated Enterprise Management Program (IEMP). In September 2005, the Integrated Enterprise Management (IEM) Program Office initiated the SAP Version Update (SVU) project to update from SAP R/3 SAP 4.6c to mySAP Enterprise Resource Planning 2005/Enterprise Core Component 6.0 (mySAP ERP 2005/ECC 6.0). NASA planned to implement the first release of the update in October 2006. The IEM Program Office estimated that the update will cost about $84.6 million.

Our overall objective was to determine whether NASA had established an effective project governance structure and process to manage the SAP upgrade effort. This report focuses primarily on the SVU Project activities that took place before April 7, 2006, the date that the SVU Project formally entered implementation.[2]

Results

The IEM Program Director established a governance structure for the SVU Project in accordance with NASA Procedural Requirements (NPR) 7120.5C, "NASA Program and Project Management Processes and Requirements," March 22, 2005. However, the IEM Program Director and the SVU Project Manager did not comply with Agency-wide project management requirements and project-specific guidance for the SVU Project and did not effectively use the governance structure established to oversee the SVU Project. Specifically,

- The IEM Program Director did not complete a business case as suggested by NPR 7120.5C, paragraph 7.2.1, and did not obtain approval of the Formulation Authorization Document (FAD) in September 2005 before beginning project formulation activities, as required by NPR 7120.5C, paragraph 3.2.b. The lack of

[1] SAP is both a company and a software package. SAP R/3 is the third release of SAP's namesake software.

[2] The execution of approved plans for the development and operation of products and services and the establishment of required control systems to ensure performance to plan.

up-front planning about the products and services that should result from the SVU, and not establishing a schedule that can accommodate delivery of those products and services, could adversely impact the success of the SVU Project.

- The SVU Project Manager did not obtain approval from the Marshall Program Management Council prior to beginning project formulation as required by NPR 7120.5C, paragraph 3.2.b. Requesting and receiving approval from a governing body to start a project after the fact renders that governing body ineffective.

- The governing body for the SVU Project, the Financial Steering Group, did not function as specified in the "SAP Version Update (SVU) Project Plan," Draft, January 6, 2006 (SVU Project Plan). Also, it did not include adequate representation, with voting privileges, of stakeholders from the Mission Directorate, including the Space Operations Mission Directorate, and from mission support areas, including Institutions and Management. The lack of stakeholder input from the Mission Directorates and the mission support areas could result in NASA's update to the Core Financial system lacking the functionality needed to achieve its intended goal of providing accurate and timely financial data necessary for managing NASA's programs and accounting for billions of dollars the Agency spends annually for work performed by its contractors.

- The SVU Project Manager did not obtain approval from the Financial Executive Round Table for the identified initial in-scope requirements before starting blueprinting,[3] as required by the IEMP "Program Plan," version 2.0, December 9, 2005 (Program Plan), paragraph 2.1.1.4. In addition, the SVU Project Manager did not fully identify requirements related to business process reengineering until blueprinting had been under way for about 17 weeks and 1 week before blueprinting was completed. Without having firm requirements, the results of blueprinting may not identify the true gaps between the Agency's requirements and what the software is capable of and the system may not meet the needs of the stakeholders.

- As of April 7, 2006 (the official start of implementation), the Financial Executive Round Table had not approved the revised Scope Document containing the final requirements resulting from blueprinting as required by the Non-Advocate Review (NAR) Panel, although the IEM Program Director stated that he had verbal approval. In addition, the revised Scope Document had not been approved as of July 10, 2006. Without having firm requirements, the system when fully implemented might fail to meet NASA's needs.

[3] Blueprinting is a process that focuses on finalizing project requirements.

Failure to use the governance structure that was established specifically for the SVU Project raises significant concerns that processes were not well thought out and that the management of the SVU Project is inefficient. The cost of the SVU Project increased by $7 million while the in-scope requirements were reduced by 50 percent. Specifically, in December 2005 the SVU budget was $45.1 million (excluding Center implementation budgets of $28.5 million). In April 2006, the in-scope requirements were reduced by 50 percent while the budget increased to $52.1 million (excluding Center implementation budgets of $32.5 million), an increase of $7 million. A robust governance structure that is used as intended will provide internal controls to ensure that a sound step-by-step process is in place for project formulation, approval, implementation, and evaluation. The internal controls inherent in the governance structure are the keystone to successful management and oversight of NASA projects.

The findings in this report are consistent with the findings in prior Government Accountability Office (GAO) and NASA Office of Inspector General (OIG) reports on project management at NASA and particularly with IEMP projects.

Management Action

We recommend the IEM Program Director (1) complete the business case, (2) include stakeholders from the Mission Directorates and mission support areas in the governing bodies for any follow-on projects and give them voting rights, (3) provide a plan for implementing the approved requirements that have been deferred and are no longer included in the 2006 update, (4) conduct business process reengineering of NASA's processes before initiating any follow-on projects, (5) provide a plan for implementing the requirements resulting from business process reengineering that were identified too late to be included in the 2006 update, and (6) conduct NARs earlier in the project process for follow-on projects to take advantage of the analysis and feedback provided by the NAR panel.

In response to a draft of this report, the IEM Program Director concurred with the intent of the recommendations (see Appendix E). We have closed Recommendation 6. We consider the other recommendations resolved, but they will remain open until all actions have been completed and verified.

CONTENTS

INTRODUCTION

Background

Over the last decade, NASA has invested significant resources to modernize its business systems and to implement the IEMP. NASA has estimated the life-cycle cost of this effort through fiscal year (FY) 2008 to be about $900 million. The IEMP, once all projects under the program are completed,[4] is expected to produce an integrated, NASA-wide business and financial management system through incremental implementation of commercial software packages and related hardware and software components. Systems Applications and Products' (SAP) R/3 is the software foundation for NASA's Core Financial system. The Core Financial system is the IEMP backbone for implementing standard processes and systems needed to support NASA's financial management activities.

SVU Project. The IEM Program Office initiated the SVU Project in September 2005 to update from SAP R/3 SAP 4.6c to mySAP Enterprise Resource Planning 2005/Enterprise Core Component 6.0 (mySAP ERP 2005/ECC 6.0). Basic vendor support for the 4.6c release of SAP expires at the end of calendar year 2006; extended maintenance is available at an additional cost to the Agency through calendar year 2009. MySAP ERP 2005/ECC 6.0 contains code fixes and redesigns that have been based on issues seen in previous versions of SAP, including SAP R/3 SAP 4.6c. According to the SVU "Initial Scope Document, Baseline," December 15, 2005, and the SVU "Scope Document, Revision A," Draft, April 5, 2006, benefits of the SVU, once implemented, are expected to include

- greater integrity in Statement of Budgetary Resources;
- improved support for the Budget Distribution process;
- option for Centers to establish lower levels of funds control;
- accurate timing of commitment and obligation postings;
- ability to more efficiently and effectively identify, investigate, and resolve errors on purchase orders;
- additional automation of adjustment accounting entries; and

[4] NASA has completed implementation of seven projects, canceled work on one project, delayed work on one project, and begun implementing several other related projects.

- streamlined year-end closing processes.

According to both Scope Documents, those benefits will contribute to NASA's financial tracking, reporting, and goal of achieving an unqualified audit opinion. As of April 7, 2006, the SVU Project Manager estimated that the update, when completed, will cost about $84.6 million—$52.1 million for the SVU Project and $32.5 million for implementation at NASA Centers.

Project Governance and Project Approval. Project governance is the overall management oversight for a project. NASA, through NPR 7120.5C, "NASA Program and Project Management Processes and Requirements," March 22, 2005, has established a system for the management of all NASA programs and projects. Project documentation outlining project governance should describe the relationships between all internal and external groups involved in the project, describe the proper flow of information regarding the project to all stakeholders, ensure the appropriate review of issues encountered within each project, and ensure that required approvals and direction for the project is obtained at each stage of the project. NASA's project approval process is an effort to ensure that senior management has ongoing input in determining a project's readiness at key milestones to proceed to the next project phase. To secure project approval, the project manager must prepare or revise key project management documents, including the SVU Project Plan, and submit them to the Governing Program Management Committee at a decision review meeting. The Governing Program Management Committee for the SVU Project is the Marshall Space Flight Center (Marshall) Program Management Council.

Blueprinting. Blueprinting is a process that focuses on finalizing project requirements. The IEMP "Program Plan," version 2.0, December 9, 2005 (Program Plan), paragraph 2.1.1.4, states that the project office performs blueprinting once initial project requirements have been identified and approved. According to the "Schedule Management Framework," version 3.0 (Schedule Management Framework), March 11, 2005, paragraph A.1.3, during blueprinting a gap analysis is performed to determine whether a gap exists between software functionality and customer needs or requirements. Such gaps are eliminated through alternative configuration approaches, process redesigns, reengineering of business rules and processes, and/or software modifications. Using the information collected during blueprinting, the project team finalizes the project scope; designs the "to be" model for the system; plans data conversion; identifies required interfaces, reporting, and extensions; and begins outlining a change management and/or communication strategy.

Objectives

Our overall objective was to determine whether NASA had established an effective project governance structure and process to manage the SAP upgrade effort. Specifically, we sought to determine whether

- the office or governing body responsible for making policy decisions, developing and approving SAP upgrade requirements, and assigning responsibilities for the success of the upgrade project was complying with NASA policies and procedures; and

- the office responsible for coordinating, evaluating, and prioritizing all initiatives to address SAP system problems was monitoring progress to ensure the work required by the initiatives was properly communicated, had the proper resources committed, and held the appropriate personnel accountable to follow those initiatives.

We reviewed internal controls related to the overall objective. Details of the audit's scope and methodology, our review of internal controls, and a list of prior coverage are in Appendix A.

GOVERNANCE OF THE SAP VERSION UPDATE PROJECT

The IEM Program Director established a governance structure for the SVU Project in accordance with NPR 7120.5C. However, the IEM Program Director and the SVU Project Manager did not comply with NPR 7120.5C and SVU Project specific guidance and also did not effectively use the governance structure established to oversee the SVU Project. Specifically, the IEM Program Director did not complete the business case as suggested by NPR 7120.5C, paragraph 7.2.1, or obtain approval of the "Formulation Authorization Document, Baseline," September 14, 2005 (FAD), before the start of formulation, as required by NPR 7120.5C, paragraph 3.2.b. The SVU Project Manager

- began formulation activities before obtaining approval from the Marshall Program Management Council,
- did not fully identify requirements or obtain approval of the identified in-scope requirements prior to starting blueprinting, and
- did not adequately address initiatives that required business process reengineering prior to finalizing blueprinting.

Failure to use the governance structure that was established specifically for the SVU Project raises significant concerns that processes were not well thought out and that the management of the SVU Project is inefficient. As a consequence of the IEM Program Director's and the SVU Project Manager's undisciplined approach to project governance, there have been cost overruns and scope reductions. For example, in April 2006, the SVU Project Manager informed the Financial Steering Group that the SVU Project could not meet the October 2006 implementation date without descoping requirements. With the Financial Steering Group's approval, the in-scope requirements were reduced by 50 percent. While the in-scope requirements were drastically reduced, the cost of the SVU Project increased by $7 million. Specifically, in December 2005 the SVU budget was $45.1 million (excluding Center implementation budgets of $28.5 million). In April 2006, the budget increased to $52.1 million (excluding Center implementation budgets of $32.5 million), an increase of $7 million. Because the SVU Project requirements and the associated budget had not been solidified, the SVU Project manager had no commitment to keep the project within defined cost, schedule, or performance parameters. Thus, fully and successfully implementing SVU is in doubt.

SVU Project Governance Structure Was Established in Accordance with NASA Guidance

SVU Project Governance Structure Was Established in Accordance with NASA Guidance. The IEM Program Director established a governance structure, summarized in the SVU Project Plan, for the SVU Project that was in accordance with NPR 7120.5C. Project governance is the overall management oversight for a project. The governance structure for a specific project depends on the categorization of a project. NPR 7120.5C, paragraph 1.5.2, defines Agency expectations of project managers by determining both the oversight committee and the level of detail that must be present in program and project plans. According to the SVU Project Plan paragraph 1.1.2, SVU was a category III project. As a category III project, NPR 7120.5C, paragraph 1.7.5, specifies that the Governing Program Management Committee should be the Center Program Management Committee, which was the Marshall Program Management Council for the SVU Project. The Marshall Program Management Council was responsible for assessing Marshall-managed project activity planning and implementation and provides oversight and direction as appropriate.

In addition to the Marshall Program Management Council, the SVU Project Plan included two additional governing bodies—the Financial Executive Round Table and the Financial Steering Group. According to the SVU Project Plan, paragraph 1.7.2.1, the Financial Executive Round Table, composed of Office of the Chief Financial Officer (OCFO) senior staff, was established to support the NASA Chief Financial Officer in setting strategic direction and policy for the NASA financial management community. According to the SVU Project Plan, paragraph 1.7.2.2, the Financial Steering Group was established by the Financial Executive Round Table to support the NASA Chief Financial Officer in implementing strategic direction and policy for the NASA financial management community as directed by the Financial Executive Round Table. For detailed information about these bodies, see Appendix B.

Although the IEM Program Director established a governance structure in accordance with NPR 7120.5C, the IEM Program Director and the SVU Project Manager did not effectively use the governance structure established to oversee the SVU Project.

SVU Project Governance Was Ineffective

The IEM Program Director and the SVU Project Manager did not comply with NPR 7120.5C and the Program Plan project management requirements for the SVU Project or effectively use the governance structure established to oversee the SVU Project. Specifically, the IEM Program Director did not complete the business case or obtain approval of the FAD before beginning project formulation activities in September 2005. The SVU Project Manager did not obtain approval from the Marshall Program Management Council prior to project formulation.

Business Case Was Not Completed. The IEM Program Director did not complete a business case as suggested by NPR 7120.5C, paragraph 7.2.1, and the Program Plan, paragraph 1.4.2. NPR 7120.5C, paragraph 7.2.1, states

> Institutional projects are similar to other projects in terms of the level of analysis and management practices needed for successful execution. As with other projects, the cognizant Mission Support Office will usually invest in a period of concept screening (e.g., business case analyses) prior to committing to an institutional project. This up-front effort is considered part of the project pre-formulation period, as referenced in paragraph 3.2.a [NPR 7120.5C]. All IT [information technology] projects require the submission of a business case in accordance with OMB [Office of Management and Budget] Circular A-11.

The Program Plan, paragraph 1.4.2, states

> During Program formulation, the IEM Program Director presents the results of the BCAs [business cases analyses] performed on each functional module to the Operations Management Council and to obtain concurrence on the Program budget and approval of the Agency business drivers, Program scope, initial modules to be implemented, acquisition strategy, and tentative scheduling for the remaining modules. Annually, for each new module proposed for initiation, the Program Director will present the IWG [IEMP Working Group] and Operations Management Council with revised BCAs for the initiating module, an implementation schedule, and cost projections for approval.

A business case is a structured method for organizing and presenting a business improvement proposal. Organizational decision makers compare business cases when they are deciding to expend resources. A business case typically includes an analysis of business process performance and associated needs or problems, proposed alternative solutions, assumptions, constraints, and a risk-adjusted cost/benefit analysis.[5]

NASA guidance, in general, recognizes the importance of preparing a business case to analyze various alternatives and to select the most appropriate alternative before a project is initiated. For example, NPR 2830.1, "NASA Enterprise Architecture Procedures," February 9, 2006, provides guidance on preparing a business case in relation to enterprise architecture procedures. This guidance was not in effect at the time that the business case for the SVU Project should have been prepared. It does, however, provide guidance on the elements of a business case. Paragraph 5.1.3 states that project managers shall consult the Enterprise Architecture Repository in the initiation phase to determine the minimum amount of work and expenditure necessary to accomplish the information technology mission or goal. This is accomplished through a gap analysis between the current state and the desired state. The opportunities identified by the gap analysis activity are documented in a business case. Paragraph E.6 states that a business case typically identifies both the quantitative and qualitative benefits of an alternative when evaluating

[5] Government Accountability Office (GAO). "Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity" (GAO-04-394G, March 1, 2004).

total benefits. The following benefits should be addressed when evaluating total annual benefits for each alternative:

- Qualitative benefits – intangible benefits that are not dollar-quantifiable.
- Cost savings – the savings that will result in a direct budget reduction for operations and maintenance costs between the status quo and proposed alternative environments (e.g., reduction in software/hardware maintenance costs).
- Cost avoidance – the costs that will not be incurred under the proposed alternative that would otherwise have been incurred if the investment had not been made.
- Stakeholder benefits – the savings that would be incurred by key stakeholders outside the organization.
- Nonmonetary quantitative benefits – the performance improvements that will be achieved as a result of implementing the initiative.

Once all of the costs and benefits of the alternatives are understood, a comparison of alternatives may be conducted. Comparisons must be made in two areas: the financial impact and the strategic value impact per dollar invested. These metrics allow an organization to understand how they will save money or avoid certain costs through implementation of a particular initiative.

The business case is a critical part of project governance because it incorporates both costs and benefits for multiple alternatives being considered in support of an investment decision. NPR 7120.5C, paragraph 3.2.1.2.f.3, requires that a business case be performed for any proposed acquisition or major modification of infrastructure. The business case should include full life-cycle cost (including operations, sustainment, and disposal), benefit estimates, alternatives and sensitivity analyses, and risk assessments. The benefits are assessed for each alternative to help identify how making a specific investment or maintaining the current environment impacts an organization, from both a quantitative and a qualitative perspective. The combination of quantitative and qualitative benefits provides a complete picture for each alternative. Although the qualitative benefits are inherently difficult to quantify, they can be equally important in choosing between alternatives depending on the scope and requirements of the system, the environment, and the functional drivers.

In January 2006, the IEM Program Director stated that a draft business case had been prepared by a contractor but he determined that the draft was not adequate and had the contractor continue to work on it. As of April 7, 2006, the business case had not been finalized.

FAD Was Not Approved Before Start of Formulation. The IEM Program Director and the SVU Project Manager did not have formal approval to initiate the formulation

phase of the SVU Project, as required by NPR 7120.5C. NPR 7120.5C, paragraph 3.2.b, authorizes the Mission Directorate Associate Administrator or Mission Support Office Director to initiate a project and begin formulation activities by approving the FAD. For the SVU Project, the approval authorities were the Agency Chief Financial Officer (CFO) and the Marshall Director. Once the FAD is signed, the project officially enters formulation. During formulation, the project office establishes the success criteria, explores implementation options, defines a project concept to meet mission objectives specified in the program plan, and develops and documents the project plan. A carefully developed FAD is a critical part of project planning and governance and is essential for the overall success of a project and should

- contain a statement of purpose;
- define the relationship between the program and the Agency's strategic goals and objective;
- establish the scope of work to be accomplished, including identification of all planned products and services to be delivered, highlighting those elements that are critical to achieving the stated purpose of the program; and
- provide an initial estimate of required resources and associated high-level schedule that includes a description of reviews required during formulation.

The IEM Program Director prepared a draft FAD on September 14, 2005, to initiate official formulation activities for the SVU Project. The September 2005 draft FAD stated that the IEM Program Office had identified approximately $4 million in FY 2006 for formulation activities. However, the September 2005 draft FAD did not identify planned products and services to be delivered or provide a high-level schedule. If the business case, which analyzes the costs and benefits of various proposed alternatives, had been completed, the FAD might have had a more accurate estimate of the costs to be incurred during formulation. In December 2005, the estimated cost for formulation was increased from $4 million to $14 million even though the FAD, approved on January 10, 2006, after the Program Management Council review in December 2005, estimated formulation costs to be $4 million.[6] According to data in Business Warehouse, the SVU Project expended about $8.6 million for formulation activities as of April 7, 2006, the end of the formulation phase. Although required by NPR 7120.5C, paragraph 3.2.b, the FAD was not approved until after the SVU Project Office initiated blueprinting. The FAD is the foundation for planning a project. The lack of up-front planning about the products and services that should result from the SVU, and not establishing a schedule that can accommodate delivery of those products and services, could adversely impact the success of the SVU Project.

[6] At the time of the December 2005 Program Management Council review, the SVU Project Manager increased the estimated formulation costs by $10 million.

Marshall Program Management Council Review Was Ineffective. The SVU Project Manager did not obtain approval from the Marshall Program Management Council prior to project formulation. To ensure the appropriate level of management oversight, NASA has established a hierarchy of Governing Program Management Committees. According to NPR 7120.5C, paragraphs 1.7.4 and 1.7.5, the Governing Program Management Committee is assigned primary responsibility for evaluating the cost, schedule, and technical content of a project to ensure that it is meeting the commitments specified in the key management documents, including the business case and the FAD. The Governing Program Management Committee provides recommendations and direction to the program or project manager. The Governing Program Management Committee for the SVU Project is the Marshall Program Management Council. However, the SVU Project Manager did not request permission from the Marshall Program Management Council to formally enter into the formulation phase, as required by NPR 7120.5C, paragraph 3.2.b, until December 14, 2005, long after formulation actually began in September 2005 and about 4 weeks after blueprinting began.

Although the Marshall Program Management Council did approve starting formulation in December 2005 without a completed business case or an approved FAD, the Council did not have the opportunity to assess whether the SVU Project Manager had adequately planned the proposed activities prior to formulation. Requesting and receiving approval from a governing body to start a project after the fact renders that governing body ineffective. In addition, the Marshall Program Management Council recognized the aggressive schedule and requested that the SVU Project Manager provide monthly status reports to the Council when early indicators of schedule slip were identified. On February 24, 2006, the SVU Project Manager provided a status report to the Council showing cost, schedule, and technical slippages (see Figure C-3). As of April 7, 2006, the SVU was 6 weeks behind schedule. Factors that contributed to schedule slippage were as follows:

- The SVU Project Kickoff meeting occurred on November 17, 2005, but the project did not formally enter formulation until December 14, 2005. Because of the late start in December, formulation, including blueprinting, which was originally scheduled to end February 28, 2006, formally ended on April 7, 2006.

- Blueprinting began in November 2005 and was scheduled to end in February 2006, but did not end until March 29, 2006.

- Requirements resulting from business process reengineering white papers were not approved until March 23, 2006.

See Appendix C for additional information on schedule slippages.

The Financial Steering Group Review Was Ineffective. The governing body for the SVU Project, the Financial Steering Group, did not function as specified in the SVU Project Plan and it did not include adequate representation with voting privileges of

stakeholders from the Mission Directorate, including the Space Operations Mission Directorate, and mission support areas, including Institutions and Management. The OCFO established two bodies whose responsibilities included, but were not limited to, governance of the SVU Project—the Financial Executive Round Table and the Financial Steering Group. The Agency CFO and Deputy CFO approved the charters on January 20, 2006.

- The Financial Executive Round Table members are the Agency CFO, the Deputy CFO, and the Center CFOs. According to the SVU Project Plan, paragraph 1.7.2.1, some of the responsibilities of the Round Table include reviewing and approving work products of the Financial Steering Group and reviewing and assessing performance management and compliance metrics.

- The Financial Steering Group members are the Agency CFO, the Deputy CFO, the Center Deputy CFOs, and ex-officio members from the Mission Directorates and the Centers. According to the SVU Project Plan, paragraph 1.7.2.2, some of the responsibilities of the Financial Steering Group include working with the IEMP to develop system requirements, approving agency processes and functional requirements, and reviewing and concurring with requests for modifications to commercial off-the-shelf products.

The Financial Steering Group is critical because the SVU Project Plan and the FAD, paragraph 4.0, identified it as the primary governing body for the SVU Project. Specifically, the Financial Steering Group is responsible for reviewing and approving the requirements and the business processes developed during the formulation phase. According to the SVU Framework Agreement Document, section 4, a modified version of the Financial Steering Group charter should have been completed prior to the start of the formulation phase in September 2005. The charter identifies voting and nonvoting members, the duties and responsibilities of the Financial Steering Group for the SVU Project, and the extent of review needed before the initiation of blueprinting. However, the Financial Steering Group's charter was not approved until January 20, 2006, and the Group did not have its first meeting until March 7, 2006.

The IEM Program Director stated that the requirements were provided to the Financial Executive Round Table, not the Financial Steering Group, for approval on December 15, 2005. However, the Mission Directorate and mission support area stakeholders were not members of the Financial Executive Round Table, so were not given an opportunity to approve or vote on the SVU requirements; therefore, their concerns about the SVU Project might not have been adequately addressed. Also, blueprinting began in November 2005 without any review by either the Financial Executive Round Table or the Financial Steering Group. The Financial Executive Round Table approved the initial requirements in February 2006 but, as of April 7, 2006, had not approved the revised Scope Document containing the final requirements resulting from blueprinting, although the IEM Program Director stated that he had received verbal approval. While the charters

for both groups were approved on January 20, 2006, the SVU Project did not receive the level of review necessary to ensure the successful implementation of the project on October 2006 because the Mission Directorate and mission support areas were not involved in the requirements development process. The lack of stakeholder input from the Mission Directorates and the mission support areas could result in NASA's update to the Core Financial system lacking the functionality needed to achieve its intended goal of providing accurate and timely financial data necessary for managing NASA's programs and accounting for billions of dollars the Agency spends annually for work performed by its contractors.

Requirements Development and Approval Process Needs Improvement

The SVU Project Manager did not obtain approval of the identified initial in-scope requirements before starting blueprinting, as required by paragraph 2.1.1.4 of the Program Plan. In addition, the SVU Project Manager did not fully identify requirements related to business process reengineering until blueprinting had been under way for about 17 weeks and 1 week before blueprinting was completed.

Process for Scoping Requirements Was Flawed. The SVU Project Manager used the requirements from the FY 2003 implementation of the Core Financial system as a baseline for the SVU Project requirements. The SVU Project Manager designated those initial requirements as either in-scope or out-of-scope on the basis of project funding and schedule. The SVU Project Manager briefed the Agency OCFO on the initial requirements on November 18, 2005, and the initial requirements were expected to be approved soon thereafter. However, in December 2005, the IEM Program Office and the Agency OCFO were still negotiating which requirements were in-scope and which were out-of-scope. As of April 7, 2006, the in-scope requirements to be implemented in October 2006 had not been formally approved; however, the IEM Program Director stated that the revised Scope Document was in the process of being signed by the Agency OCFO and Center OCFOs. In addition, some of the in-scope requirements were being deferred to a later date, but that deferral had not been formally approved; however, the SVU Project Manager stated that deferral of those requirements had been verbally approved and, therefore, were no longer her responsibility for the October 2006 implementation.

According to the April 5, 2006, Scope Document, the SVU Project Office decided to defer non-fiscal year-end dependent scope items and items requiring further definition. The deferred items include

- the redesign of Health and Human Services grant processing;

- the electronic contractor cost report added to Business Warehouse, with work-year equivalent categories showing planned versus actual consumption data;

- all requirements[7] needed to complete Phase II of the Project Management Information Improvement Initiative;[8] and

- the integration touch-point rewrites, including bank card interfaces.

Even though the initial requirements had not been approved, the SVU Project Manager initiated blueprinting—the finalization of project requirements—in November 2005 at about the same time that the Agency OCFO was initially briefed on the requirements. Furthermore, the April 5, 2006, Scope Document was still being revised on May 1, 2006.

Business Process Reengineering Was Not Timely. The SVU Project Manager did not adequately address processes that require business process reengineering early enough to ensure that they were thoroughly addressed during blueprinting. The SVU Project Manager needs the requirements generated from business process reengineering to complete blueprinting because the results of blueprinting, according to the Schedule Management Framework, paragraph A.1.3, include the finalization of project scope and the design of the "to-be" model for the system.

Necessity for Business Process Reengineering. Business process reengineering is an approach for redesigning the way work is done to better support an organization's mission and reduce costs by focusing on the steps and procedures that govern how resources are used to create products and services that meet the needs of particular customers. GAO noted the importance of business process reengineering in 1997:

> As a structured ordering of work steps across time and place, a business process can be decomposed into specific activities, measured, modeled, and improved. It can also be completely redesigned or eliminated altogether. Reengineering identifies, analyzes, and redesigns an organization's core business processes with the aim of achieving dramatic improvements in critical performance measures, such as cost, quality, service, and speed.
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> Reengineering recognizes that an organization's business processes are usually fragmented into subprocesses and tasks that are carried out by several specialized functional areas within the organization. Often, no one is responsible for the overall performance of the entire process. Reengineering maintains that optimizing the performance of subprocesses can result in some benefits, but cannot yield dramatic improvements if the process itself is fundamentally inefficient and outmoded. For that reason, reengineering focuses on redesigning the process as a whole to achieve the

[7] The December 15, 2005, scope document identified 24 requirements, 16 in scope and 8 out of scope related to the Project Management Information Improvement Initiative.

[8] Phase II was to deliver the capability to execute commitments and obligations at low enough levels to improve the purchase order and purchase requisition processes. In addition, Phase II was to expand cost data capability to meet project management requirements and support earned value management.

> greatest possible benefits to the organization and its customers. This drive for realizing dramatic improvements by fundamentally rethinking how an organization's work should be done distinguishes reengineering from process improvement efforts that focus on functional or incremental improvement.[9]

Objective of Business Process Reengineering. The main objective of business engineering is to optimize business processes—that is, to make sure that the key steps in business processes are as efficient, responsive, and service oriented as possible. To achieve those objectives, a company undergoing reengineering might redesign processes by integrating all critical business processes; addressing the management of whole processes, not just the management of individual tasks; and reducing or eliminating laterals or hand-offs or complex chains of business steps. Such a focus on improving performance and customer orientation forces an organization to reexamine long-held beliefs. Thus, business reengineering affects not only business processes, but management methods, job definition, and organizational structures as well. When successfully done, business reengineering enables a company to simplify all those areas before automating them. No matter how efficient the technology, it will never help a company achieve its business goals unless the actual business processes have been scrutinized carefully. The business reengineering team must maximize and streamline business processes—determining whether they should be changed or thrown out—before they apply technology to them.[10]

Before software is selected, a company's business strategy needs must be understood. The software needs should be defined based on the results obtained by studying the existing business processes and flows. It should not be done the other way—selecting the software and then studying the business processes. GAO notes that,

> [W]ork processes, information needs, and technology are interdependent. When a reengineering project leads to new information requirements, it may be necessary to acquire new technology to support those requirements. It is important to bear in mind, however, that acquiring new information technology does not constitute business process reengineering. Technology is an enabler of business process reengineering, not a substitute for it. Acquiring technology in the belief that its mere presence will somehow lead to process innovation is a root cause of bad investments in information systems.[11]

The process should be started by comparing the existing business processes and strategies to those supported by the new system. This should be followed by the software selection process and the evaluation of software functions and features. If the functions are evaluated up-front, without examining the business background and processes, the initial progress is rapid. However, the end result may not be what is best for the organization.

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[9] GAO (formerly the U.S. General Accounting Office). "Business Process Reengineering Assessment Guide," Version 3 (GAO/AIMD-10.1.15, May 1, 1997), page 6.

[10] Curran T.A, Keller, G., and, Ladd, A. *Sap R/3 Business Blueprint: Understanding the Business Process* Reference *Model* (Upper Saddle River, NJ, Prentice Hall Professional Technical Reference, 1998).

[11] GAO. "Business Process Reengineering Assessment Guide," Version 3, page 9.

Therefore, it is advisable to follow a selection process that starts by evaluating the organization's strategy and business processes.

SAP Role in Business Process Reengineering. SAP is a reengineering driver. It forces companies to review all of their existing business processes. The result is that many of SAP's processes, which represent best business practices, are selected to replace existing ones that, in many cases, are quite obsolete. There are a number of common mistakes that are repeated at various SAP implementations. Those include but are not limited to

- not realizing that SAP is a political project whose scope equals reengineering,
- believing that a flawed business strategy and inefficient business processes can be offset by technology,
- overextending requirements gathering,
- not creating or following a detailed project plan,
- lacking scope control,
- not emphasizing data clean up,
- starting the data migration effort too late,
- attempting to mirror the existing systems in the new system,
- excessive customization, and
- building in a lack of flexibility to accommodate process.[12]

The SVU Project Plan, paragraph 1.10.1.2, requires blueprinting as critical to determining whether the software to be implemented—mySAP ERP 2005/ECC 6.0—would satisfy NASA's approved requirements, including those identified as a result of business process reengineering. However, the requirements developed as a result of business process reengineering were not fully identified until March 16, 2006, and not approved until March 23, 2006—1 week before the end of blueprinting on March 29. Initiation of blueprinting may have been premature and blueprinting may not have identified the true gaps between the software functionality and NASA's requirements, including requirements identified as a result of business process reengineering.

[12] Khan, A., *Implementing SAP with an ASAP Methodology Focus* (Lincoln, NE, Writers Club Press, 2002).

In June 2005, we reported[13] that during the initial Core Financial system implementation NASA encountered problems because the Agency did not initiate comprehensive end-to-end business process reengineering before implementing the Core Financial system to take advantage of system processing efficiencies. As a result, Centers continued to use multiple manual work-around procedures to address perceived and actual functionality gaps in the Core Financial system, which increased the potential for creating additional data errors. For example, there were problems in the Core Financial system in recording advances; therefore, work-around procedures were developed to manually track and then post required information into the Core Financial system. In our June 2005 report, we noted that NASA should address business process reengineering prior to implementing a system upgrade. We also noted that an upgrade of the Core Financial system would be an opportunity to reevaluate the processes and take advantage of new system functionality to reduce system complexity and to eliminate manual work-arounds and correct problems.

As of December 31, 2005, the SVU Project Manager had done little to reengineer major business processes other than identifying two potential reengineering opportunities in the areas of funds control and purchase orders and initiating the development of white papers. In November 2005, the SVU Project Manager set up Delta teams to determine how the upgrade would impact the system configuration and transaction flows. In addition, the Delta teams planned to determine how the new SVU functionality could benefit or adversely impact NASA. Their analysis could have led to new SVU requirements and to identifying areas that require business process reengineering. The Delta teams were responsible for providing the SVU Project Manager with white papers summarizing key requirements and gaps in functionality, alternatives to resolving the gaps, advantages and disadvantages, potential impacts, and recommended solutions.

The SVU Project Manager was to submit the white papers to the Financial Executive Round Table for approval. However, white paper recommendations were not submitted to the Financial Executive Round Table until March 16, 2006, and not approved until March 23, 2006, long after initiation of blueprinting in November 2005 and 1 week before blueprinting ended on March 29, 2006. The IEM Program Director explained that the white papers merely documented decisions that had already been made and that the recommendations in the white papers that were approved on March 23, 2006, had already been incorporated into blueprinting. One of the white papers discussed at the March 7, 2006, Financial Steering Group meeting was on the budget structure. At that meeting, the SVU Project Manager explained

> [W]hen the whitepaper was developed there were still several open questions and additional guidance in order to ensure the requirements had been appropriately captured from the OneNASA team and the existing controls within the CRCS [Central Resources Control System]. Since delivery of the whitepaper to the FSG [Financial

[13] NASA OIG, "Synopsis of Management Issues Associated with NASA's Integrated Financial Management Program" (IG-05-020, June 3, 2005).

> Steering Group], recently there have been internal sessions with key team members and leadership members and the team has been provided the answers to some of those open questions. The recommendation the team will be providing today [March 7, 2006] is different than what was provided in the whitepaper that was distributed to the FSG. The purpose of the briefing to the FSG is to walk through the proposed redesign based on those answers to ensure the needs are being met.

Thus, since the March 7, 2006, recommendation was "different than" the recommendation in the white paper, the white papers did not necessarily document recommendations that had already been incorporated into blueprinting, as asserted by the IEM Program Director. In addition, although the review of Health and Human Services grant processes was completed, the identified requirements resulting from the business process reengineering were deferred until October 2007. Because grant processing impacts all Centers and can lead to process and policy changes, there was insufficient time to obtain Agency "buy-in" before the end of blueprinting. In light of the aggressive implementation schedule, the SVU Project Manager recognized that there was not sufficient time to adequately address the issues identified by the Delta teams and meet the October 2006 implementation date.

To be effective, business process reengineering should occur before the finalization of requirements and the completion of blueprinting because the reengineering efforts should result in the identification of additional requirements that need to be reviewed, approved, and included in blueprinting. The IEM Program Director stated that because the update will change how some transactions will be processed, he considered the change in transaction processing to be business process reengineering. However, according to the Associate Chief Information Officer for IEMP at the Competency Center and an IEMP contractor, if this were implementation of a new system, business process reengineering should have been under way before blueprinting started in November 2005 to allow adequate time to reengineer processes and obtain agreement from all Centers that could be affected by the redesign.

The Delta team white papers identifying business process reengineering opportunities were not approved until March 23, 2006. The IEM Program Director and the SVU Project Manager needed to address the reengineering of existing processes and take advantage of the processes already inherent in the SAP software before implementing the upgrade. Failure to adequately address NASA's major processes and SAP functionality could result in another less than successful Core Financial system implementation and a continuation of data integrity issues, manual work-arounds, and a financial management system that does not meet NASA's needs.

Results of NAR and Delta NAR

SVU Project Did Not Pass NAR. In early February 2006, the NAR panel determined that the SVU Project was not mature enough to enter the implementation phase. A panel,

led by the Marshall Office of Strategic Analysis and Communications, conducted the initial NAR of the SVU Project from January 23 through February 3, 2006. The NAR panel did not conduct a technical assessment of the adequacy of the system; rather, it assessed whether the SVU Project Office assigned personnel with sufficient knowledge and expertise to the project and whether the SVU Project Office provided the necessary organizational structure, teaming, and reviews to ensure the system would meet the requirements and the intended user needs. As a result of their assessment, the NAR panel did not recommend the SVU Project move into the implementation phase at that time. Rather, the NAR panel recommended that the SVU Project Office take action to correct deficiencies and that the NAR panel reconvene in March 2006. Deficiencies to be corrected were as follows:

- The SVU Project schedule, for the most part, ended on February 28, 2006, when blueprinting had been scheduled to end.
- It was difficult to determine whether resource requirements were aligned with corresponding scheduled activities.
- The preliminary SVU schedule had a number of tasks that were missing predecessor and successor tasks.
- The SVU Project did not have adequate budget resources to cover the estimated cost.
- The SVU Project had not performed a cost/risk analysis.

See Appendix D for detailed results of the NAR.

The March 3, 2006, draft NAR report points out that NPR 7120.5C, paragraph 3.2.d, describes the formulation phase as an iterative process whereby the requirements, budget, and schedule are concurrently developed until output products are mature and acceptable. The NAR panel concluded that, "It is the opinion of this NAR panel that this process be allowed to continue and the Project remain in Formulation." The NAR panel discontinued work until March 27, 2006.

The SVU Project Passed the Delta NAR. On March 27, 2006, the NAR reconvened and conducted what they called a "Delta" NAR from March 27 through March 31. The Delta NAR panel was composed of the same technical experts who participated in the January–February NAR. The objective of the Delta NAR was to determine whether the SVU Project had made enough progress to warrant approval to enter the implementation phase. The Delta NAR panel verbally expressed "extreme concern whether the SVU requirements [scope] are nailed, the budget set, and the schedule defined with a critical path." After the SVU Project Manager briefed the panel on progress made since the initial NAR, the Delta NAR panel discussed whether sufficient progress had been made to warrant a recommendation to proceed into the implementation phase. Although all

panel members agreed that there were vast improvements, all members expressed concern over scope, budget, and schedule. Specifically, the Delta NAR panel determined that the SVU Project Manager did a good job of descoping the project but the revised Scope Document needed to be signed. However, the panel expressed concern about the budget in that "cost would run out but they will get more dollars to do things later." In addition, the panel considered the schedule to be "high risk" because of "the amount of work to be done in the time frame." The Delta NAR panel pointed out that any delay in accomplishing critical steps could prevent the project from meeting the "go-live" date because there was "negative slack" in the schedule (no room for slippages) and because the governance process was slow. Also, one Delta NAR panel member expressed concern over not having a final business case "this late into the game." The SVU Project Manager stated that the business case was still with the contractor tasked with its development.

The Delta NAR panel determined that the SVU Project team

- had accomplished a lot since the initial NAR;
- did a good job of descoping and getting definitions;
- developed a good Scope Document, but it needed to be signed,
- developed a good requirements document; and
- developed a good budget estimate that showed more reserves.

The Delta NAR panel presented the results of the Delta NAR to the Program Management Council on April 7, 2006. Although the panel thought there was still a risk associated with the project schedule, they concluded that the SVU Project team had made sufficient progress to proceed into the implementation phase. The Program Management Council concurred with the Delta NAR recommendation and granted the SVU Project team authorization to proceed into the implementation phase, but with a recommendation to watch schedule progress. However, during the Delta NAR in late March 2006, the SVU Project Manager was still modifying the revised Scope Document, which had not been signed or approved, and the IEM Program Director had not finalized the business case. The rationale provided for the Delta NAR approval was that the SVU Project Office had made tremendous progress since the initial NAR and the panel needed to consider the integrity of the SVU team and "strong qualified people on the scheduling team." Data in Business Warehouse showed that the SVU Project charged about $263,000 for personnel and general and administrative overhead costs to the implementation/realization phase of the project as of March 31, 2006, even though the SVU Project Manager did not obtain approval from the Program Management Council to enter the implementation/realization phase of the project until April 7, 2006.

Successful Implementation of SVU Is Questionable

Because the SVU Project requirements and the associated budget have not been solidified, the SVU Project manager has no obligation to keep the project within defined cost, schedule, or performance parameters and the success of the SVU is in doubt. The NASA OIG and GAO have previously reported concerns regarding the IEM Program and its governance, requirements, and business process reengineering processes. An effective project governance structure and process should have been established at the beginning of SVU Project formulation to integrate and prioritize the diverse requirements that will be levied on the SVU through the active participation and commitment of key stakeholders. In addition, an effective process for establishing project requirements and identifying major business processes that need reengineering is essential. An established governance structure that is allowed to operate effectively would help ensure sound decision making and achieve "buy in" from key stakeholders. Also, strengthening the development of, and the participation in, the requirements and reengineering process could increase project effectiveness. In addition, the Program Implementation Review Team for IEMP expressed similar concerns about the requirements in the IEMP Program Implementation Review Team Final Report, April 7, 2006.

> [T]he PIR [Program Implementation Review] believes that the IEMP is being overly optimistic about what it can accomplish in the available timeframe. In addition, even if all within-scope requirements are completed, a review of a draft of the SVU scope document indicates that there are financial requirements that will not be included in this project. These unfulfilled requirements will have to be worked over time by the Competency Center or left undone if SVU or a yet-to-be-defined follow-on financial project does not provide for them. The PIR is also concerned that the late finalization of in-scope requirements and over-optimism concerning what can be accomplished within the schedule will jeopardize the technical update, which is critical for continued operation of the Core Financial software.

We contacted the IEM Program Director to determine what potential adverse impact might be encountered if SVU implementation were delayed for 1 year. The IEM Program Director stated that delaying implementation of the SVU Project would mean a delay in obtaining a more stable software platform that NASA needs to implement other requirements that would help improve the quality of the financial data. Also, according to the Associate Chief Information Officer for IEMP at the Competency Center, NASA needs to upgrade from its current version of SAP, SAP R/3 SAP 4.6c, because the contractor is providing software patches to correct problems in newer versions of SAP that do not correct problems in version 4.6c.

SVU implementation on a fiscal year boundary was a major factor in NASA's decision to implement in October 2006. However, as of April 7, 2006, the IEM Program Director and the SVU Project Manager had not

- completed the business case;

- obtained agreement from the OCFO on which requirements were in-scope and would be included in the October 2006 implementation, which were in-scope but deferred to a later date, and which were out-of-scope;

- included stakeholders from the Mission Directorates and mission support areas in the governance process; or

- submitted the final requirements to the Financial Steering Group for approval.

The April 5, 2006, Scope Document was still in the signature cycle on July 10, 2006.

Conducting the Program Management Council Review and the NAR so late in the process adversely impacts NASA's ability to make informed decisions. The Program Management Council approved project formulation months after the project began, thus any input the Council provided about project readiness was irrelevant. The NAR panel specifically told the SVU Project Manager that the SVU Project was not ready to enter the implementation phase, but the SVU Project Manager began performing implementation tasks anyway. In addition, the Project Manager should consider scheduling the NAR so that it comes before blueprinting rather than after. That suggestion was also made in the Program Implementation Review Team Final Report.

> This move [holding NAR before blueprinting] would result in earlier stabilization of requirements and the Program budget, allowing for earlier improved planning and the ability to meet budgeted cost and schedule and allow for a savings in sunk costs in the event of Project cancellation. Additionally, the timing of key decision points in IEMP would then be more in line with similar decision making in NASA flight system programs.

To be effective, governance reviews should be done soon enough and in such a manner that red flags are raised to alert NASA senior management of serious problems within a project sufficiently early to allow effective solutions.

The IEM Program Director did not have a method in place to adequately capture and report on the success of the SVU Project. The cost of the SVU Project has increased while requirements have been deleted or deferred. Specifically, in December 2005 the SVU budget was $45.1 million (excluding Center implementation budgets of $28.5 million). In April 2006, the in-scope requirements were reduced by 50 percent while the budget increased to $52.1 million (excluding Center implementation budgets of $32.5 million), an increase of $7 million. In addition, according to the business case, SVU Project costs do not include the costs of ensuring that systems that are external to or feed data into the Core Financial system are integrated and appropriately configured. Those costs are to be borne by the individual system owners outside of IEMP. Also, the business case contains an assumption that any systems external to the Core Financial system that act as feeder systems to or that interface with the Core Financial system will interoperate with any version of SAP implemented by the Agency.

Costs will continue to increase on the SVU Project. In April 2006, the IEM Program Director stated that the SVU Project to be implemented in October 2006 was only a technical upgrade with data migration.[14] Once the implementation is complete, the SVU Project staff will be tasked with a follow-on project to address in-scope requirements that were deferred from the current project and new requirements that are identified by the OCFO.

During the follow-on project, the SVU Project Manager will need to take time to address the governance, requirements, and business process reengineering issues and to conduct the formulation activities necessary to ensure successful project implementation. Specifically, the SVU Project Manager will need to address processes and policy changes that could impact how transactions are processed Agency-wide, take advantage of new functionalities that could not be addressed due to time constraints, and involve stakeholders from the Mission Directorate and missions support areas.

Management Comments on the Finding and Audit Response

Management's Response to the Finding. The IEM Program Director stated that the actual timetable of the SVU Project is as follows:

- The Financial Executive Round Table approved the initial in-scope requirements on November 18, 2005, one day after the blueprint kickoff conducted on November 17, 2005. This approval was documented in the minutes from the Financial Executive Round Table session, and documentation reflecting this approval was provided to the OIG on December 5, 2005.

- Draft requirements were sent to the Financial Steering Group on February 28, 2006.

- White papers were sent to the Financial Steering Group on February 28, 2006, and reviewed with the Financial Steering Group during the March 6-8, 2006, Preliminary Design Review.

- Requirements were updated to reflect decisions from those white papers and distributed to the Financial Steering Group on March 9, 2006.

- White papers were distributed to the Financial Executive Round Table on March 16, 2006, which included the Financial Steering Group's recommendations for Financial Executive Round Table decisions.

[14] Data migration is the process of transferring data from an old system to a new system by first converting the data into an electronic file that the new system can read and then transferring the data by either batch input (simulates data input by processing the normal screens of the corresponding online transaction) or by directly updating the database in the new system.

- The final scope was verbally approved at the Financial Executive Round Table video teleconference on March 29, 2006.

The IEM Program Director stated that he was unable to validate the March 23, 2006, date cited in the draft report for white paper completion. The IEM Program Director also stated that he was not clear on the method the audit team used to calculate the 50 percent requirement reduction or the $7 million budget increase. In addition, the IEM Program Director stated that bank card interfaces, contrary to what the report implies, remain within the scope of SVU.

Evaluation of Management's Response. The documentation we obtained during the audit presents a timeline somewhat different than the timeline provided by the IEM Program Director. For example, the initial in-scope document was dated December 15, 2005; therefore, it could not have been approved by the Financial Executive Round Table November 18, 2005, as asserted by the IEM Program Director. The Agency Deputy CFO and the IEM Program Director never signed the document. In addition, while what was presented as the final scope of the SVU Project was verbally approved at the Financial Executive Round Table video teleconference on March 29, 2006, the SVU Project Manager continued to revise the Scope Document through July 2006. Versions of that document were signed by the SVU Project Manager, the IEM Program Director, and various Center CFOs with signature dates ranging from April 5, 2006, through September 14, 2006. The IEM Program Director signed the Scope Document on July 10, 2006. The Agency Deputy CFO, who is also the Chair of the Financial Steering Group, signed the Scope Document on September 15, 2006.

The date we cite for white paper completion is based on the SVU Project Manager, who reported during the Delta NAR that the Financial Steering Group submitted the white paper recommendations to the Financial Executive Round Table on March 16, 2006, and received approval on March 23, 2006.

We calculated the reduction in the SVU Project's scope by comparing the requirements in the "Initial Scope Document, Baseline," dated December 15, 2005, with the requirements in the "Scope Document, Revision A," dated March 6, 2006. We compared the line items of requirements in the two documents and determined that roughly 50 percent of the requirements in the December 2005 Scope Document had been deferred or deleted from the March 2006 revision. To validate our results, we verified our calculations with similar work performed by the Independent Program Assessment Office during the NAR.

We determined the budget increase of $7 million by using budget figures provided by the SVU Project Manager. In an e-mail dated December 13, 2005, the SVU Project Manager noted that the SVU budget was $45.1 million for the project and $28.5 million for Center Implementation. The SVU Project Manager's presentation to the Marshall Program Management Council on April 7, 2006, noted that the budget was $52.1 million for the project and $32.5 million for Center implementation. We considered only the project budget figures and excluded those for Center implementation.

With regard to the IEM Program Director's statement that bank card interfaces remain within the scope of SVU, the Scope Document dated April 5, 2006, contains the following statement: "Integration Touch-point Rewrites (including Bank Card Interfaces) is out of scope for the October 2006 update."

Recommendations, Management's Response, and Evaluation of Management's Response

Recommendation 1. We recommend the IEM Program Director complete the business case.

Management's Response. The IEM Program Director concurred, stating that the SVU business case was signed and approved on June 12, 2006, after a thorough update and review from earlier drafts.

Evaluation of Management's Response. Management's comments are responsive. The IEM Program Director signed the business case on June 12, 2006. However, as of October 23, 2006, the Agency Deputy CFO, who is also Chair of the Financial Steering Group, the governing body for the SVU Project, had not signed the business case. The issue will remain open for reporting purposes until the Agency Deputy CFO signs the business case.

Recommendation 2. We recommend the IEM Program Director include stakeholders from the Mission Directorates and mission support areas in the governing bodies for the follow-on project and give them voting rights.

Management's Response. The IEM Program Director concurred with the intent of the recommendation. However, he added that it is the responsibility of the Agency CFO to ensure that the Agency's financial management systems incorporate certain accounting and financial management requirements, processes, and controls, regardless of the desires and preferences of the stakeholder community. He went on to note that as the functional owner for this project, OCFO, uses existing governance structures to provide oversight for this effort and fulfill responsibilities, also that the Financial Executive Round Table and the Financial Steering Group include ex-officio representation from the stakeholder communities. The chair of those governing groups included appropriate input from those stakeholder representatives in the decision-making process, although not through a formal vote. The IEM Program Director added that other governance related improvements are being established. Specifically, a governing Program Management Council unique to IEMP is being established and a new Management/Business Systems Integration Group (M/BSIG) is being formed to play a critical role in assessing and prioritizing IEMP's requirements, and both the IEMP Program Management Council and the M/BSIG will include substantial stakeholder membership, including program/project representation.

Evaluation of Management's Response. Management's comments are responsive. The formation of a governing Program Management Council unique to IEMP and a new M/BSIG should address issues raised in the recommendation. This issue will remain open until we review the charters for the Program Management Council and the M/BSIG to determine whether each group includes representatives from the Mission Directorates and mission support areas, whether those members have voting rights, and whether the authority and defined scope of responsibility is adequate. We request that management provide us with an estimated completion date for the proposed corrective action.

Recommendation 3. We recommend the IEM Program Director provide a plan for implementing the approved requirements that have been deferred and are no longer included in the 2006 update.

Management's Response. The IEM Program Director concurred with the intent of the recommendation, stating that all requirements being levied on IEMP will be reviewed by the M/BSIG to ensure that they are aligned with the program's baseline, adequately integrated with other requirements sets, and appropriately prioritized. The M/BSIG will recommend the sequence of implementing specific IEMP projects, taking into account requirements prioritization, budgets, resources, and other constraints such as compliance with Federal laws, regulations, and policies. In addition, the IEM Program Director stated that the NASA Operations Management Council directed the IEMP to lead an Agency-wide "data gap analysis" and develop a roadmap for NASA's future business applications environment. A major output from this effort will be an Agency concept of operations for enterprise business processes and enabling application technology. The preparation of a concept of operations was recommended by GAO.

Evaluation of Management's Response. Management's comments are responsive. It is conceivable that the data gap analysis and the resulting concept of operations will address issues raised in the recommendation. However, this issue will remain open until we evaluate the guidance, scope, methodology, and milestones for conducting the data gap analysis and preparing the concept of operations. We request that management provide us with an estimated completion date for the proposed corrective action.

Recommendation 4. We recommend the IEM Program Director conduct business process reengineering of NASA's processes before initiating the follow-on project.

Management's Response. The IEM Program Director concurred, stating that NASA will be developing a roadmap and an Agency Concept of Operations that will drive the prioritization of requirements and the sequencing of implementation projects.

Evaluation of Management's Response. Management's comments are responsive. It is conceivable that the data gap analysis and the resulting concept of operations will

address issues raised in the recommendation. This issue will remain open until we evaluate the guidance, scope, methodology, and milestones for conducting the data gap analysis and preparing the concept of operations. We request that management provide us with an estimated completion date for the proposed corrective action.

Recommendation 5. We recommend the IEM Program Director provide a plan for implementing the requirements resulting from business process reengineering that were identified too late to be included in the 2006 update.

Management's Response. The IEM Program Director concurred with the intent of the recommendation, stating that all requirements being levied on IEMP will be reviewed and prioritized by the M/BSIG and a roadmap will be developed.

Evaluation of Management's Response. Management's comments are responsive. The formation of the M/BSIG, the data gap analysis, and the resulting concept of operations should address issues raised in the recommendation. This issue will remain open until we evaluate the charter for the M/BSIG and the guidance, scope, methodology, and milestones for conducting the data gap analysis and preparing the concept of operations. We request that management provide us with an estimated completion date for the proposed corrective action.

Recommendation 6. We recommend the IEM Program Director conduct NARs earlier in the project process to take advantage of the analysis and feedback provided by the NAR panel.

Management's Response. The IEM Program Director concurred, stating that NPR 7120.5C requires a NAR to be conducted before moving into the implementation phase. Although IEMP projects follow NPR 7120.5C, the IEM Program Director will strive to schedule NARs on future projects sooner in the formulation phase in order to benefit from the NAR team's feedback.

Evaluation of Management's Response. Management's comments are responsive. We consider this recommendation closed.

APPENDIX A

Scope and Methodology

We performed our fieldwork at NASA Headquarters and the Competency Center located at the Marshall Space Flight Center. To determine whether the IEM Program Office and SVU Project Office personnel complied with policies and procedures related to governance, the requirements determination and approval process, and business process reengineering, we reviewed overall NASA program and project management policy in NPR 7120.5C and NASA Policy Directive 1000.0, "Strategic Management and Governance Handbook," August 2005. In addition, we reviewed guidance specifically for IEMP contained in the following documents:

- Program Plan, Version 2.0, September 16, 2005; December 9, 2005; and November 28, 2006
- Schedule Management Framework, Version 3.0, March 11, 2005
- IFMP Administrative Systems Implementation Projects Office, "Risk Management Plan, Baseline," December 17, 2004
- "Business Case Analysis Framework," Version 1.0, December 31, 2004
- "NASA Core Accounting System Modernization: Update of *SAP* Financial Enterprise Resource Planning Solution: Business Case Analysis," Draft, November 10, 2005, and February 10, 2006
- IEMP Program Implementation Review Team Final Report, April 7, 2006

Also, we reviewed guidance specifically for the SVU Project contained in the following project documents:

- SVU Project Plan, Draft, January 6, 2006
- FAD, Baseline, September 14, 2005
- "SAP Version Update Project, Program Commitment Agreement Addendum, Baseline," Draft, February 3, 2006
- "SAP Version Update (SVU) Project Assessment, Strategy and Recommendation," September 2, 2005

- "SAP Version Update Project, Framework Agreement, Baseline," Version 1.0, August 31, 2005
- "Initial Scope Document, Baseline," December 15, 2005
- "Scope Document, Revision A," Draft, March 6, 2006, and April 5, 2006

Further, we reviewed the OCFO Corrective Action Plan for the FY 2005 Financial Audit and various presentations provided by the IEM Program Director and the SVU Project Manager. We interviewed OCFO, Independent Program Assessment Office, System Management Office, IEM Program, and SVU Project personnel about the governance structure, methodology for determining requirements, and business process reengineering processes. In addition, we reviewed prior NASA OIG, GAO, and Gartner Consulting reports to determine whether the areas we reviewed were addressed in prior reports. We also attended the NAR.

We performed this audit from November 2005 through August 2006 at NASA Headquarters and Marshall Space Flight Center in accordance with generally accepted government auditing standards.

Scope Impediment. When we started the audit in November 2005, much of the project documentation required by NPR 7120.5C had not been prepared. As our audit work progressed, the IEM Program Director and the SVU Project Manager prepared various draft versions of documents, some of which have been finalized and formally approved, such as the FAD. However, some critical documents— business case, Project Plan, and Scope Document—had multiple draft versions and not been finalized and approved before the briefing to the Program Management Council on April 7, 2006.

Use of Computer-Processed Data. We relied on computer-processed data from the Core Financial system and Business Warehouse for project cost data during the audit; however, we did not evaluate the general or application controls for either system because that was outside the scope of our review. While we do not believe that the cost data from the Core Financial system and Business Warehouse presented in this report is accurate, we believe that the data supports the finding and conclusions in this report when considered in the context of other evidence gathered.

Review of Internal Controls

We evaluated NASA OCFO and the IEM Program Office controls for managing the SVU Project in accordance with NPR 7120.5C. We identified weaknesses in that process as described in the finding section of this report.

Prior Coverage

The Government Accountability Office (GAO), the NASA OIG, and Gartner Research and Consulting have issued reports of particular relevance to the subject of this report. Reports may be accessed over the Internet at http://www.gao.gov (GAO) and http://www.hq.nasa.gov/office/oig/hq/audits/reports/FY07/index.html (NASA).

Government Accountability Office

"The National Aeronautics and Space Administration's Fiscal Year 2004 Management Representation Letter on Its Financial Statements" (GAO-05-591R, June 23, 2005)

"National Aeronautics and Space Administration: Significant Actions Needed to Address Long-standing Financial Management Problems" (GAO-04-754T, May 19, 2004)

"Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved" (GAO-04-49, January 12, 2004)

"Business Modernization: NASA's Challenges in Managing Its Integrated Financial Management Program" (GAO-04-255, November 21, 2003)

"Business Modernization: NASA's Integrated Financial Management Program Does Not Fully Address Agency's External Reporting Issues" (GAO-04-151, November 21, 2003)

"Business Modernization: Disciplined Processes Needed to Better Manage NASA's Integrated Financial Management Program" (GAO-04-118, November 21, 2003)

"Information Technology: Architecture Needed to Guide NASA's Financial Management Modernization" (GAO-04-43, November 21, 2003)

"Business Modernization: Improvements Needed in Management of NASA's Integrated Financial Management Program" (GAO-03-507, April 30, 2003)

National Aeronautics and Space Administration

"Synopsis of Management Issues Associated with NASA's Integrated Financial Management Program" (IG-05-020, June 3, 2005)

"Audit of the Implementation of Integrated Financial Management Program (IFMP) Audit Recommendations" (IG-05-008, February 11, 2005)

"NASA's Travel Module Lacks Management Control Structure and Compliance With Federal Requirements" (IG-04-027, September 24, 2004)

"Integrated Financial Management Program Budget Formulation Module" (IG-04-017, March 30, 2004)

"Integrated Financial Management Program Core Financial Project Information Technology Security Planning and Implementation" (IG-04-016, March 31, 2004)

"Summary Report on Audit of Integrated Financial Management Program Core Financial Module" (IG-03-028, September 29, 2003)

"Integrated Financial Management Program Core Financial Module Conversion to Full Cost Accounting" (IG-03-015, May 30, 2003)

Gartner Research and Consulting

Gartner Research and Consulting, "Core Financial Module Implementation Assessment" (June 15, 2005)

PROJECT MANAGEMENT GUIDANCE FOR THE SVU PROJECT

NASA projects are to be governed by both Agency-wide guidance and by policies and procedures developed specifically for a particular program or project. NPR 7120.5C defines Agency-wide requirements for formulating, approving, implementing, and evaluating NASA programs and projects and provides guidance on governance and requirements determination. Compliance with NPR 7120.5C is mandatory and applicable to all NASA programs and projects. NPR 7120.5C, paragraph 3.1.a, states that projects are elements of a program and are investments that have defined goals objectives, requirements, life-cycle costs, a beginning, and an end. Projects vary significantly in their complexity, cost, and criticality. The project manager is responsible for the successful completion of the project and for customer satisfaction with the products and services delivered. The project manager is accountable to the program director and to the Center Director for assigned projects. Project managers are key members of the program management team, providing information and assisting the program director in the execution of the integrated program.

The NASA Four-Part Project Management Process. NPR 7120.5C, paragraph 1.7.1, defines the formal project management process, which consists of formulation, approval, implementation, and evaluation.

Formulation. The assessment of feasibility, review, and analysis of concepts; initial risk reduction activities; assembly of teams; development of operational concepts and acquisition strategies; establishment of high-level requirements and success criteria; selection of an independent technical authority (if applicable); and preparation of detailed plans, budgets, and schedules that are essential to the success of a project. NPR 7120.5C, paragraph 3.2.b, authorizes the Mission Directorate Associate Administrator or Mission Support Office Director to initiate a project and begin formulation activities by approving the FAD.

Approval. The ongoing effort by responsible officials above the program and project management level to review plans and performance at key milestones and authorize continuation of the effort and progression to the next phase.

Implementation. The execution of approved plans for the development and operation of products and services and the establishment of required control systems to ensure performance to plan.

Evaluation. The ongoing independent, outside the advocacy chain of the project, evaluation of the performance of a project and incorporation of the evaluation findings to ensure adequacy of planning and execution according to plan.

Pre-Formulation Activities. Pre-Formulation activities are those activities that occur before a project formally enters formulation. NPR 7120.5C, paragraph 3.2.a, states that a small amount of discretionary resources will usually be provided for pre-formulation activities, which involve mission analysis, advanced concept studies, and analyses of alternatives that should be performed before a specific project concept emerges. The advanced concept studies are not considered part of formal project planning since there is no certainty that a specific project proposal will emerge. NPR 7120.5C, paragraph 7.2.1, states that institutional projects, including information technology projects, are similar to other projects in terms of the level of analysis and management practices needed for successful execution. As with other projects, the cognizant Mission Support Office will usually invest in a period of concept screening, including a business case, prior to committing to an institutional project.

Governance. The governance structure for a specific project depends on the categorization of a project. NPR 7120.5C, paragraph 1.5.2, defines Agency expectations of project managers by determining both the oversight committee and the level of detail that must be present in program and project plans. NPR 7120.5C provides a simple schema to assist the program manager in determining the project's category on the basis of the magnitude of project's financial investment and priority (see Table 1). In connection with the project category determination, the project manager is responsible for providing defensible estimates of the project's life-cycle cost and priority levels, whereas the program manager is responsible for concurrence. The Mission Directorate Associate Administrator or Mission Support Office Director approves the categorization of projects. Independent review teams will later confirm these estimates as the project reaches initial progress milestones.

Table 1. Project Categorization Schema

Priority	Life Cycle Cost		
	LCC < $100M	$100M ≤ LCC < $500M	LCC ≥ $500M
High	Category II	Category I	Category I
Moderate	Category III	Category II	Category I
Low	Category III	Category III	Category II

Project priority depends on the importance of the activity (project in-line with the critical paths of the Strategic and Capability Roadmaps); the extent of international participation or joint effort with other government agencies; the uncertainty surrounding the application of new and untested technologies; the presence of nuclear materials on board; systems being developed for human spaceflight; spacecraft development classification; and the criticality in terms of human safety, mission success visibility, and critical NASA assets. Source: NPR 7120.53, paragraph 1.5.3.

According to NPR 7120.5C, paragraphs 1.7.4 and 1.7.5, the Governing Program Management Committee is assigned primary responsibility for evaluating the cost,

schedule, and technical content of a project to ensure that it is meeting the commitments specified in the key management documents, including the business case and the FAD. In addition, NPR 7120.5C, paragraphs 1.7.4. and 1.7.5, describe the overall governance structure based on the project category (Table 2).

> To ensure the appropriate level of management oversight, NASA has established a hierarchy of Program Management Committees (PMCs). One of these committees, referred to as the Governing PMC (GPMC), is assigned primary responsibility for evaluating the cost, schedule, safety, and technical content of a particular program or project to ensure that it is meeting the commitments specified in the key management documents described above. The Agency PMC is responsible for evaluating proposed programs, assessing the performance of approved programs and projects, and providing recommendations to the Deputy Administrator. The Agency PMC convenes two types of meetings: (1) decision review meetings, in which recommendations are made to the Deputy Administrator regarding whether a proposed program or project will be authorized to proceed, and (2) Quarterly Status Reports (QSRs), in which the Agency PMC is updated by each Mission Directorate (and Mission Support Offices for designated programs and projects).
>
> Other PMCs are established and executed by Mission Directorate, Mission Support Offices, and Centers. As programs and projects are approved and move into implementation, the Agency PMC may delegate evaluation authority/responsibility to one of these PMCs. That decision is documented in the PCA and Program Plan. Regardless of where the GPMC resides (e.g., Agency, Mission Directorate, Mission Support Office, or Center), it is responsible for evaluating the program or project, and for providing recommendations and direction to the Program or Project Manager and, as applicable, the Center Director. For projects, the GPMC is determined by the established project category.

Table 2. Governance Structure Based on Project Category

Category	Governing Program Management Committee	Review Team Lead
I	Agency Program Management Committee	Independent Program Assessment Office (IPAO)
II	Mission Directorate Program Management Committee	Either the IPAO or the Center Systems Management Offices
III	Center Program Management Committee	Center Systems Management Office

Source: Adapted from Table 1-2, NPR 7120.5C, paragraph 1.7.5.

The SVU Project is a Category III project; therefore, the Marshall Program Management Council is the Governing Program Management Committee and the review team lead is the Marshall Systems Management Office.

As part of governance, projects are subject to independent reviews. NPR 7120.5C, paragraph H.1.1, states that independent reviews provide the opportunity to confirm the approach of a project or offer options, if needed, and communicate progress toward and risks to meeting the success criteria. The reviews also evaluate and communicate the

level of safety and likelihood of mission success. Independent reviews are conducted by independent panels composed of management, technical, and budget experts from organizations outside of the advocacy chain of the program/project being reviewed (Table 3).

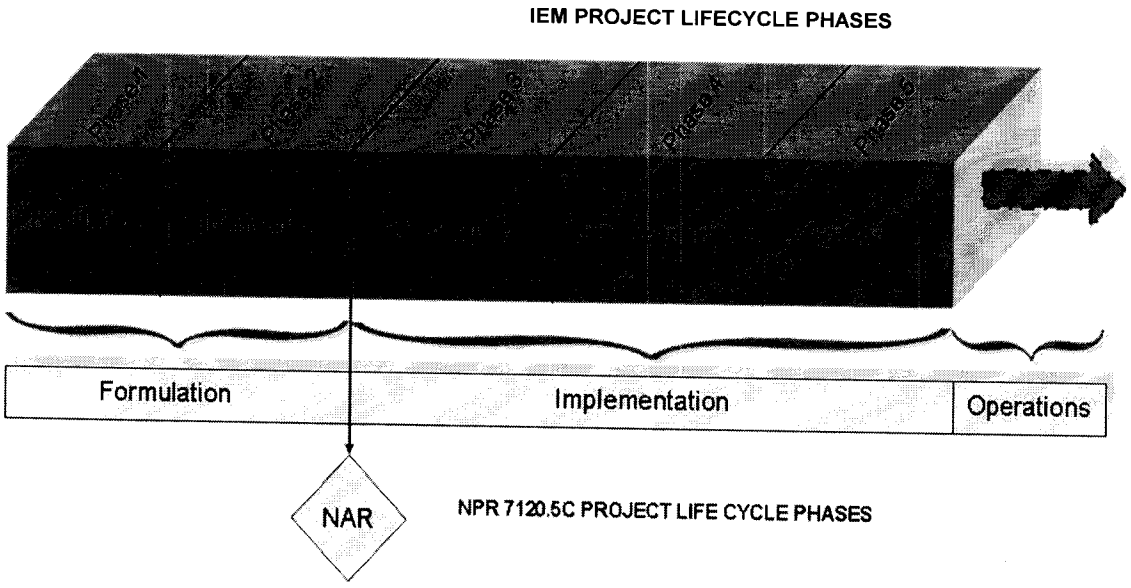
Table 3. Agency-Specified Independent Reviews
Pre-NAR. The Pre-NAR is an independent review of programs and projects conducted at the end of Phase A during formulation. The Pre-NAR provides management with an independent assessment of the readiness of the project to proceed into Phase B of formulation and an early assessment of preparations for implementation. Review criteria include assessment of the project's concept, programmatic, and technical plans for execution and draft implementation documentation.
NAR. A NAR is the analysis of a proposed project by an independent team composed of management, technical, risk, schedule, and budget experts from outside the advocacy chain of the proposed project and is conducted at the end of formulation per NPR 7120.5C, paragraph 3.3.2, and Appendix H. A NAR is intended to provide Agency management with an independent assessment of the readiness of the project to proceed from formulation into implementation. Evaluations during formulation assess whether programs or projects support the Agency goals and strategic planning and can be successfully conducted within allocated resources and applicable constraints. Upon successful completion of a NAR, a recommended project baseline is established. Review criteria include assessment of the project's preliminary design, plans for implementation, and final implementation documentation.

SVU Project-Specific Guidance

The SVU Project Plan establishes guidance specifically for the SVU Project. According to the SVU Project Plan, paragraph 1.5, the SVU Project Manager reports directly to the Marshall Chief Information Officer who, in turn, reports to the Marshall Director. The Marshall Director provides the civil service resources and infrastructure necessary to support the SVU Project Office. The Marshall Program Management Council, as the Governing Program Management Committee for the SVU Project, is responsible for assessing SVU Project planning and implementation.

Phases of the SVU Project. The SVU Project, while required to comply with NPR 7120.5C, has adopted the SAP implementation approach, which consists of five life-cycle phases—formulation, blueprinting, realization, final preparation, and go-live. The correlation between the SAP life-cycle phases and the NASA project management process is shown in Figure 1.

Figure 1. Correlation between NASA Project Management Process and SAP Project Phases



Formulation Phase. According to SVU Project Plan, paragraph 1.10.1.3, and Work Breakdown Structure (WBS) 1.15.2, formulation includes the efforts to define the project structure, develop the necessary project initiation documentation, and perform steps for project approval. Activities include developing the agreement between the program and the lead Center for the particular module to be implemented. The project organization is formed, scope is defined, and roles and responsibilities are outlined. Project team training is conducted, if necessary. The implementation objectives, strategy, and project plan are developed. Initial project requirements are gathered. Typically, a kickoff meeting is held with project team members, project steering committees, and other identified parties to discuss and finalize the scope, costs, implementation strategy, performance commitments, project schedule baseline, and project plan.

Blueprinting Phase. According to the SVU Project Plan, paragraph 1.10.1.3, and WBS 1.15.3, blueprinting centers on finalizing project requirements. Project team members work together to complete requirements gathering and definition for various business processes. The IEMP "Program Plan," version 2.0, December 9, 2005 (Program Plan), paragraph 2.1.1.4, states that the project office performs blueprinting once initial project requirements have been identified and approved. According to the "Schedule Management Framework," version 3.0, March 11, 2005 (Schedule Management

Framework), paragraph A.1.3, during blueprinting a gap analysis is performed to determine whether there is any required functionality that the software cannot address. Such gaps are to be eliminated through alternative configuration approaches, process redesigns, reengineering of business rules and processes, and/or software modifications. Using the information collected, the project team then solidifies the scope; designs the "to be" model for the system; plans data migration; identifies required Agency interfaces, reporting, and extensions; and begins outlining a change management and/or communication strategy. During the blueprinting phase the SVU Project staff will begin performing any data clean-up activities necessary—analyze existing data, identify and assign resources to support data clean-up activities, cleanse data, and track progress. At the end of this phase, a Preliminary Design Review is held. The results of the blueprinting phase will then be used to revalidate the business case and to initiate the realization phase. The blueprinting phase results are the foundation for the activities performed during the realization phase.

Realization Phase. According to the SVU Project Plan, paragraph 1.10.1.3, and WBS 1.15.4, realization is focused on configuring the "to be" design output of the blueprinting phase to the baseline module system that will eventually be used for production. User procedures are defined. Training curriculum is developed based on these procedures and administered across the Agency to the appropriate end users. Identified super users help fine-tune the system by executing the identified business processes. Interfaces, mock data migration, system integration testing, data transfers, and reports are developed and tested. The baseline module is tested to determine whether performance and Agency requirements are met. Additionally, module transition plans and operation plans are written. At the completion of this phase, a critical design review is held.

Final Preparation Phase. According to the SVU Project Plan, paragraph 1.10.1.4, and WBS 1.15.5, final preparation comprises all tasks completed to prepare the module for production. Staff develops procedures in support of system transition as well as post go-live procedures for the end users and support staff. Super users complete end user module training. Data migration testing and interface programs are executed and validated and volume and stress tests are performed. Also, the project staff works closely with the Competency Center[15] and Centers to develop clear performance; service; and business measurements for the system as well as expectations for metric data collection, evaluation, and reporting. At the completion of this phase, Center readiness reviews and an operational readiness review are held.

Go-Live Phase. According to the SVU Project Plan, paragraph 1.10.1.4, and WBS 1.15.6, go-live includes the formal handover of the module from a preproduction

[15] The Competency Center is located in Huntsville, Alabama, and is responsible for the upgrade of all IEMP systems. All configuration changes, inter-center financial transfers, etc., are made through the Competency Center.

environment to the support staff at the Competency Center operating in the production environment. Project team members help execute the transition plan and document lessons learned. The module is put into production at the Centers. Key data processing milestones, such as day-end and first-month–end processes, are validated. Additional training is provided to end users to ensure continued use of the system. System and business performance metrics are collected and evaluated.

IEM Program Director Responsibilities. According to the SVU Project Plan, paragraph 1.7.1.4, the IEM Program Director has lead responsibility for IEMP management, including implementation of the IEMP according to its approved Program Plan, the approved Program Commitment Authorization, and the individually approved IEMP Project Plans. Specific IEM Program Director responsibilities related to the SVU Project include

- setting objects and requirements;
- setting scope, priorities and control module sequencing and timing;
- submitting the initial proposed module rollout schedule and annual updates to the Agency Operations Management Council for approval;
- managing IEMP budget;
- allocating funding to the SVU Project;
- establishing framework for conducting program business within the Program Plan;
- managing Program level risks;
- reporting (to Program Management Councils, process owners, Office of Management and Budget, Congress, Government agencies, the Inspector General);
- establishing the Change Management framework for communications, transition activities, and training;
- assessing program performance; and
- remaining accountable to customers for program performance.

Project Manager Responsibilities. According to the SVU Project Plan, paragraph 1.6.1.1.1, the SVU Project Manager is responsible for planning, managing, and implementing the SVU Project. The SVU Project Manager is semiautonomous, having the authority to tactically manage the implementation of SVU Project within the policies and guidelines established by the IEMP Program Office and the Marshall policies and procedures. The SVU Project Manager is responsible for coordinating Agency process team activities, including developing standard Agency-level business processes, updating

requirements based on software capabilities, and performing gap assessments. Specific SVU Project Manager responsibilities include

- building commitment with key customers and stakeholders;
- obtaining Center commitment to support SVU;
- contracting for implementation services;
- acquiring any software needed to fill functional gaps;
- implementing approved, NASA-specific ancillary solutions for functionality gaps in the proposed commercial-off-the-shelf solution;
- ensuring Center development and implementation;
- ensuring development and execution of knowledge transfer from the project team to the Competency Center;
- leading the Agency transition;
- working with operations elements and supporting transition to operations;
- ensuring lessons learned from prior projects are appropriately incorporated in project activities, and that lessons learned from the SVU Project are documented;
- managing project level risks and issues; and
- reporting status to IEM Program Director.

Governance. Project governance is the overall management oversight for a project. Project documentation outlining project governance should describe the relationships between all internal and external groups involved in the project, describe the proper flow of information regarding the project to all stakeholders, ensure the appropriate review of issues encountered within each project, and ensure that required approvals and direction for the project is obtained at each stage of the project. The governance structure for the SVU Project is outlined in the SVU Project Plan. Three of the primary governing bodies for the SVU Project are the Marshall Program Management Council, Financial Executive Round Table, and the Financial Steering Group.

Marshall Project Management Council. According to the SVU Project Plan, paragraph 1.7.2.5, the Marshall Project Management Council is a forum composed of Center senior managers that assesses Marshall-managed project activity planning and implementation and provides oversight and direction as appropriate.

Financial Executive Round Table. According to the SVU Project Plan, paragraph 1.7.2.1, NASA's Financial Executive Round Table, composed of Office of the Chief Financial Officer (OCFO) senior staff, was established to support the NASA Chief

Financial Officer in setting strategic direction and policy for the NASA financial management community. Specific responsibilities include

- implementing and maintaining the Financial Leadership Plan;
- setting the direction for the financial workforce;
- prioritizing NASA-wide financial initiatives;
- establishing, staffing, and monitoring the Financial Steering Group;
- reviewing and approving work products of the Financial Steering Group;
- establishing and promoting uniform financial communications across the Agency; and
- reviewing and assessing performance management and compliance metrics.

Financial Steering Group. According to the SVU Project Plan, paragraph 1.7.2.2, the Financial Steering Group was established by the Financial Executive Round Table to support the NASA Chief Financial Officer in implementing strategic direction and policy for the NASA financial management community as directed by the Financial Executive Round Table. Specific responsibilities include

- providing a vision and a high-level course of action for implementation activities;
- working in conjunction with IEMP in developing system requirements;
- presenting recommendations to the Financial Executive Round Table for approval of financial system projects;
- approving functional drivers, Agency processes, and enabling functional requirements;
- providing advice, counsel, guidance, and decisions, as needed, to the SVU Project Manager and/or Agency Process Team;
- reviewing and addressing recommended alternative approaches for handling cross-functional processes/policy issues and cross-Center issues;
- advising the Committee Chair on operational and functional issues while ensuring successful program implementation within their respective leadership areas;
- reviewing and concurring with requests for modifications to commercial-off-the-shelf products;

- endorsing and advocating appropriate changes, including business practice and process standardization, that will be required by the implementation of new business processes and system capabilities;
- communicating program commitment to all stakeholders;
- ensuring adequate staffing to support both pilot and Center implementations;
- approving Agency versus Center configuration options;
- recommending implementation plans to the Program Director; and
- implementing transition planning and rollout.

Projects are subject to a series of reviews. NPR 7120.5C, paragraph H.1.1, states that independent reviews that are planned during the project life cycle are documented in the FAD and in the project plan. The SVU Project Plan, paragraph 3.10.1, defines a series of technical reviews to be conducted at key formulation and implementation milestones. The reviews are the major transition points in the life cycle, such as the transition from requirements development to design activities, final design to testing, and testing to implementation (Table 4).

Table 4. SVU Project Plan-Specified Technical Reviews
Preliminary Design Review. The preliminary design review provides a mechanism for the project team to review the system architecture and Agency process design requirements that will be the common basis for all Centers. In addition, the preliminary design review provides an opportunity to verify that the Agency process design is ready to move into the verification stage. This review normally occurs during the blueprinting phase. The SVU Project Manager recommends whether to proceed.
Critical Design Review. The critical design review provides the SVU Project Manger with the assurance that the final Agency business processes and requirements (functional and technical), are viable and are aligned/mapped with the configured system. This review normally occurs during the realization phase. The SVU Project Manager recommends whether to proceed. (This review will be addressed as work related to OIG Assignment no. A-06-017, "Audit of the Testing for the Systems, Applications, and Products [SAP] Version Update [SVU]" [Assignment No. A-06-017].)
Test Readiness Reviews. Test readiness reviews provides the SVU Project Manger with the assurance that the integration test plan is complete and thorough and that the software has undergone thorough unit testing and is ready for integration testing. This review occurs during the realization phase. The SVU Project Manager recommends whether to proceed. (These reviews will be addressed as work related to Assignment No. A-06-017.)

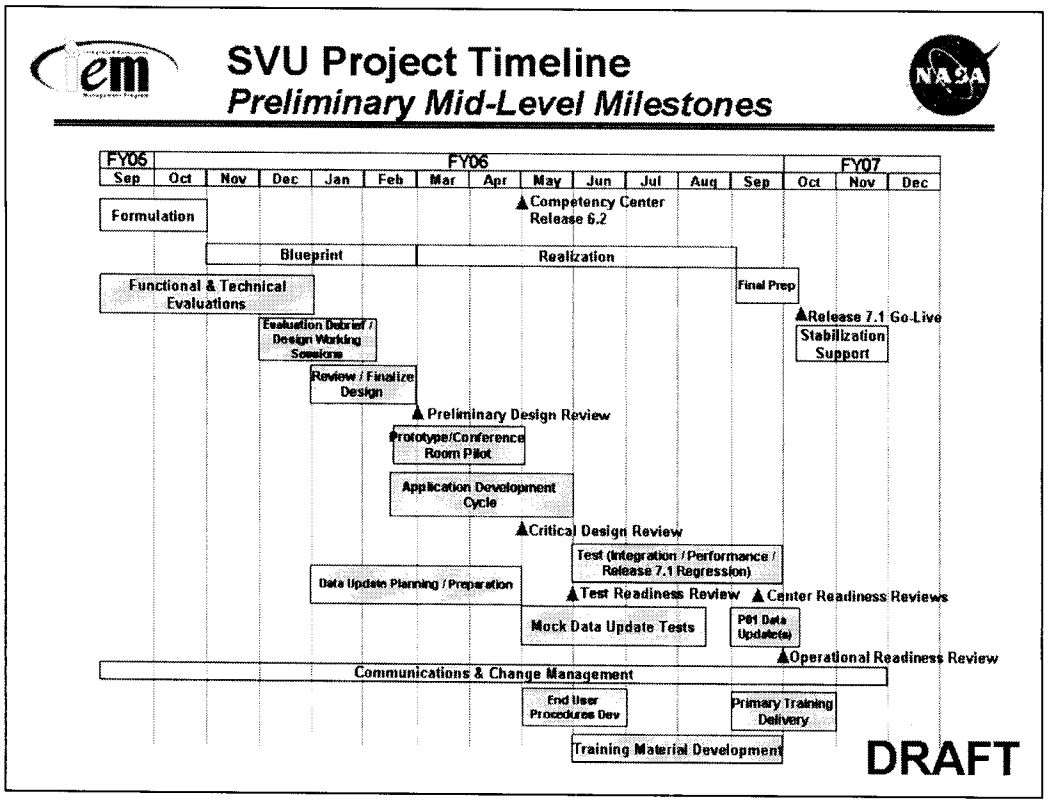
Table 4. SVU Project Plan-Specified Technical Reviews (cont'd)
Operational Readiness Review. The operational readiness review provides Center leadership and functional owners with the assurance that functional, technical, and performance testing was successfully completed; the SVU is ready for delivery; each Center is adequately prepared to accept the SVU; overall system operations readiness and procedures are acceptable; and the Competency Center is prepared to support system operations. The operational readiness review occurs at the final preparation phase prior to go-live. The lead functional owner recommends whether to proceed with system cutover. (This review will be addressed as work related to Assignment No. A-06-017.)
Center Test Readiness Reviews. Center test readiness reviews provide the Center Implementation Project Manager with the assurance that the integration test plan is complete and thorough and that the software has undergone thorough unit testing and is ready for integration testing. The review occurs during the realization phase. The Center Implementation Project Manager recommends whether to proceed. (These reviews will be addressed as work related to Assignment No. A-06-017.)
Center Readiness Reviews. The Center readiness reviews provide the SVU Project Manager and the Center Implementing Project Manager the assurance that the Center is prepared to proceed with implementation. This review occurs prior to the Centers conducting support activities. The Project Manger recommends whether to proceed. (These reviews will be addressed as work related to Assignment No. A-06-017.)
Center Operational Readiness Reviews. The Center operational readiness reviews provide Center leadership and functional owners with the assurance that functional, technical, and performance testing was successfully completed; the project team is ready to deliver the SVU; each Center is adequately prepared to accept the SVU; overall system operations readiness and procedures are acceptable; and the Competency Center is prepared to support system operations. The Center operational readiness reviews occur at the final preparation phase prior to go live. The lead Center functional owner recommends whether to proceed with system cutover. (These reviews will be addressed as work related to Assignment No. A-06-017.)

The SVU Project Plan, paragraph 3.10.3, states that independent reviews and assessments provide an objective, external measurement of the project's fulfillment of Agency drivers and its identification and mitigation of risks. Reviews will recommend strategies and may provide approval of the project. In addition to the NAR, which will be conducted by the Marshall Systems Management Office, the SVU Project Plan, paragraph 3.10.3, defines two independent reviews required for the SVU Project (Table 5).

Table 5. SVU Project Plan-Specified Independent Reviews
Enterprise Architecture Project Review. The enterprise architecture project review is typically conducted during formulation but may be conducted during other phases. The review ensures that the project has a fundamentally sound business foundation for successful funding and implementation. The review will be conducted by the Office of the Chief Information Officer.
Independent Verification and Validation. Independent verification and validation provides independent technical assessments of systems and software processes and products to identify development and operational risks. The products and processes of the software development life-cycle phases are reviewed, verified, and validated. This capability allows for multiple spot-checking throughout the system and software development life cycle. This review is performed by an outside contractor. (This review will be addressed as work related to Assignment No. A-06-017.)

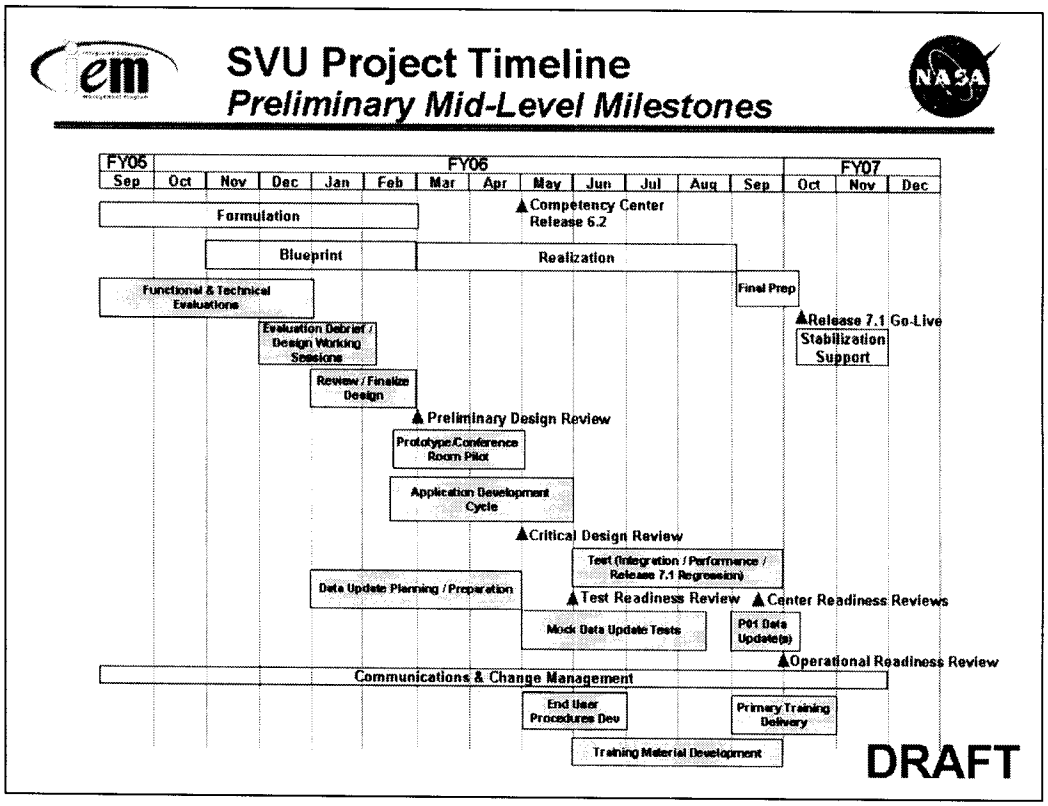
SVU PROJECT TIMELINES

Figure C-1. SVU Project Timeline as of September 2005.



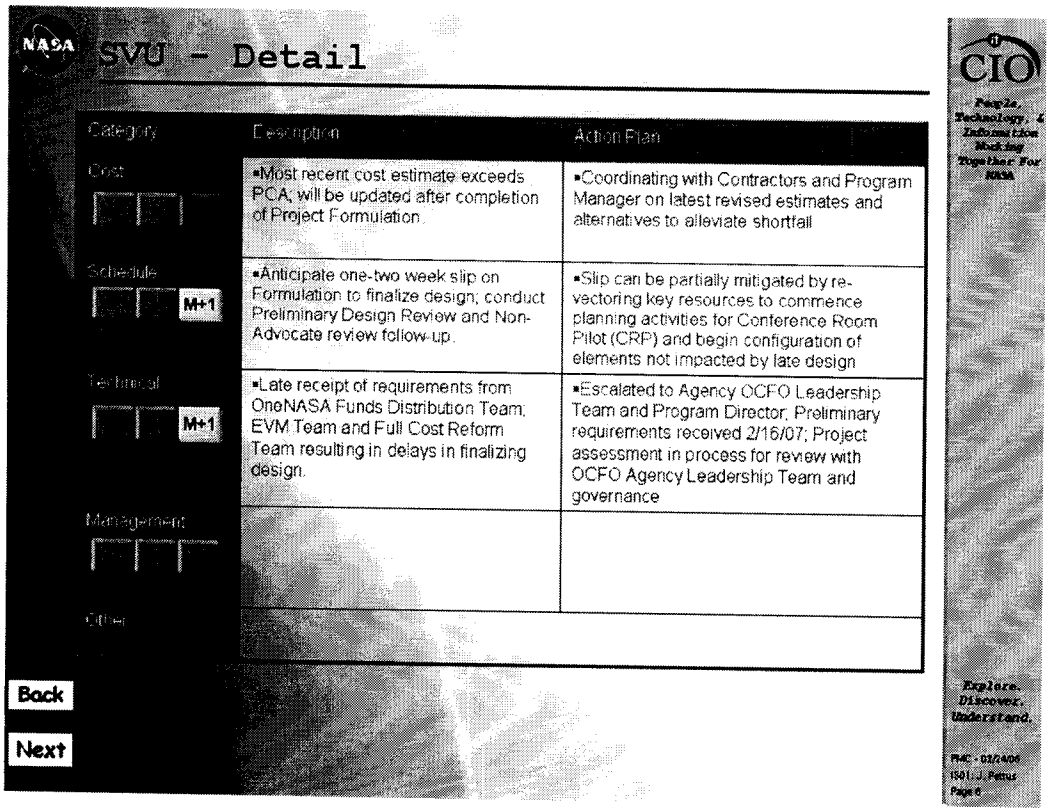
This timeline shows that formulation was originally scheduled to end on October 31, 2005, and blueprinting was scheduled to start on November 1, 2005, and end on February 28, 2006.

Figure C-2. SVU Project Timeline as of December 2005.



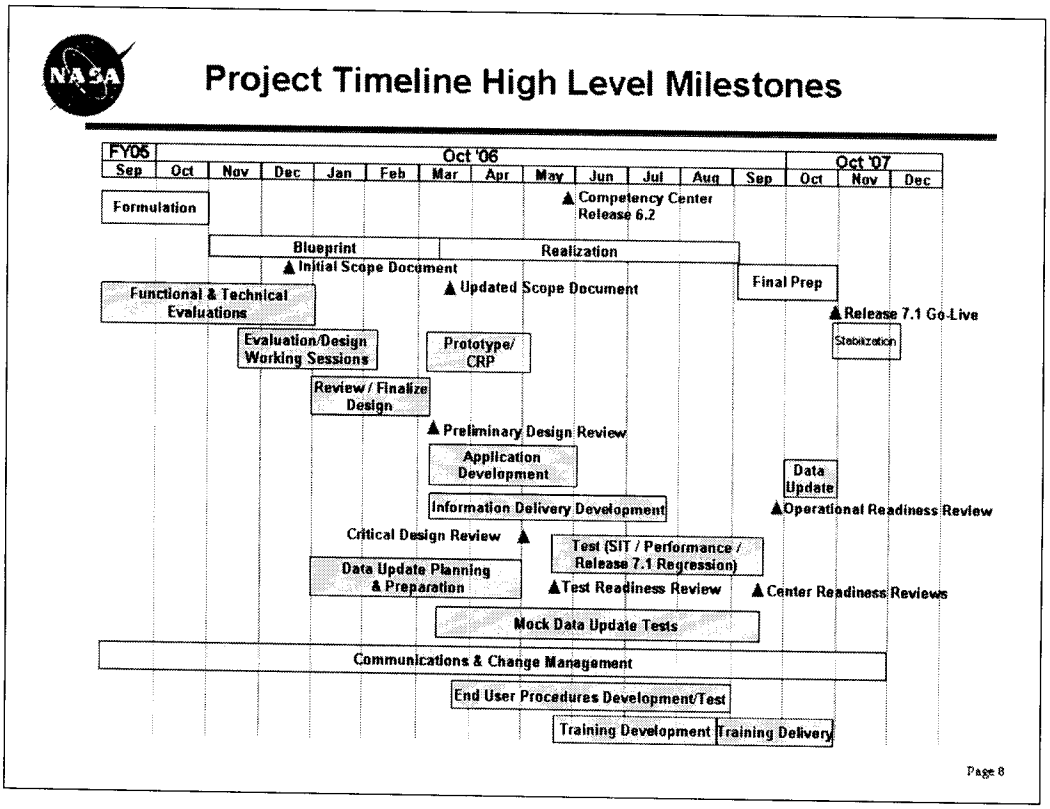
This timeline shows formulation extending through February 2006 and including blueprinting. Although the SVU Project Office extended formulation activities by 4 months, the implementation, or go-live, date in October 2006 did not change. With an inflexible go-live date and extended period for formulation activities, the project milestones leading up to the go-live date begin to overlap, which can cause the project to fail to meet its objective.

Figure C-3. SVU Project Status Slide as of February 2006.



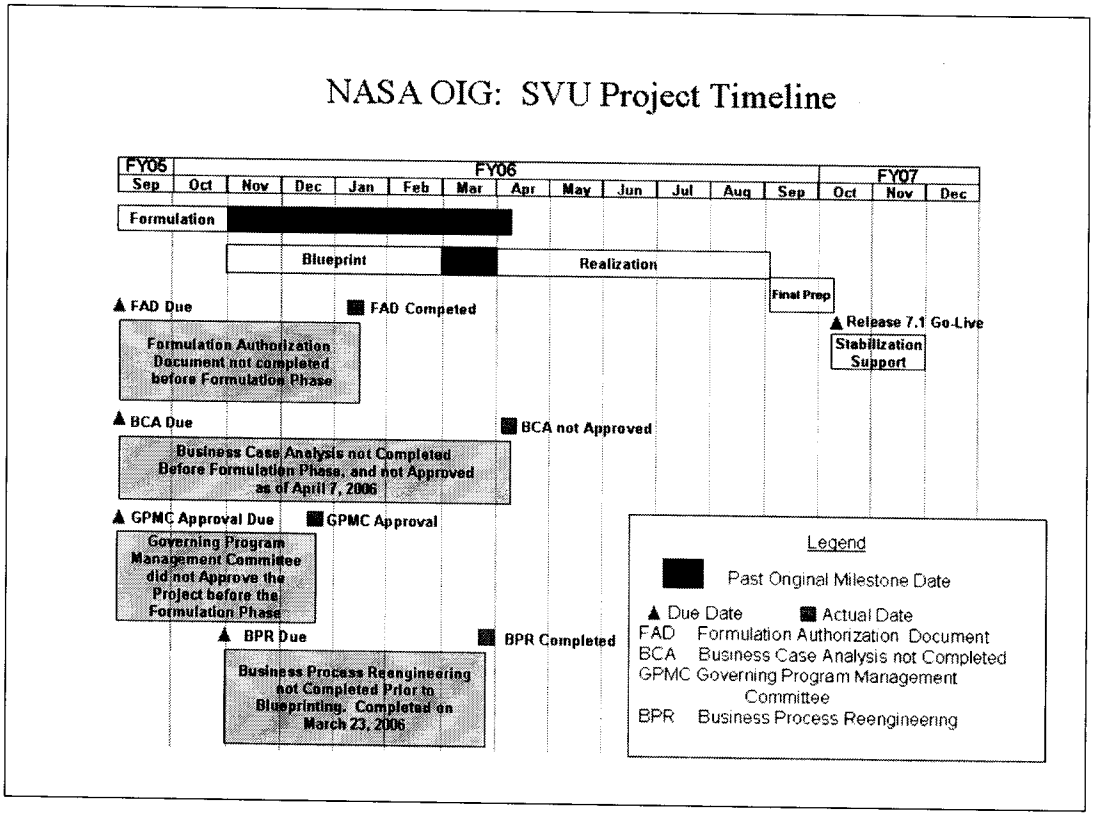
On February 24, 2006, the SVU Project Manager briefed the Program Management Council on the status of the SVU. The SVU Project was experiencing delays in blueprinting due to schedule slippages. Because the implementation date is not flexible, the project is entering a critical position that could adversely impact the success of the project.

Figure C-4. SVU NAR Briefing Timeline as of March 27, 2006.



On March 27, 2006, the SVU Project Manager briefed the NAR using this chart, which depicts formulation ending October 31, 2005, rather than April 7, 2006, which was the date that the Program Management Council approved the transition from formulation into implementation/realization. This chart also differs from the one presented to the Marshall Program Management Council in December 2005 (see Figure C-2).

Figure C-5. Office of Inspector General's SVU Project Timeline



We developed an SVU timeline that depicts when project documentation and milestones should have occurred and when they actually occurred up through the end of formulation on April 6, 2006. The milestones were based on the SVU Project's stated timeline and when the events ideally should have occurred.

RESULTS OF NAR

The NAR panel found the following deficiencies that the SVU Project Manager needed to correct before the panel could recommend proceeding into the implementation phase.

Schedule. The NAR panel found that the SVU Project schedule, for the most part, ended on February 28, 2006, when blueprinting had been scheduled to end. The schedule for the remaining phases of the project was still under development; however, the preliminary schedule had significant issues—no identifiable schedule margin was shown, many tasks did not have defined predecessor or successor tasks, and no critical path was identified. The NAR panel noted that the draft preliminary schedule was very immature, which was especially troubling since SVU had a fixed end-date and the master schedule was the only viable project management tool. In addition, the NAR panel made the following observation about the risk related to schedule.

> Of the 23 SVU Project Risks identified thus far, none specifically mention the overall schedule risk of the SVU Project in exact terms. It appears that the SVU Project Schedule is ambitious, which may not be achievable without further considerations. Based on the SVU Summary Schedule, it seems as though the "Go Live" date of October 200[6] set the stage to each of the major milestones leading up to the "Go Live" milestone. In other words, "backward engineering" may have been used to develop the SVU Project schedule. On the surface, it does not seem feasible that this schedule can be met based on the current work that must be completed. Based on a project budget of approximately $45.0M, a spend rate of nearly $3.8M per month would have to be sustained between now and the end of the fiscal year in order to meet the "Go Live" Milestone and at the present, this doesn't seem feasible. Not only would the spend rate need to be sustained at about $3.8M per month, there would have to be demonstrated accomplishment of the work being performed. In essence, simply spending the budget doesn't necessarily assure that the work being performed is getting the job done so to speak.

The NAR panel recommended that the SVU Project Office consider addressing the SVU Project schedule concern and incorporate a risk and initiate a risk mitigation plan immediately in order to increase the likelihood of project success.

Resource Requirements and Availability. The NAR panel noted that it was difficult to determine whether resource requirements were aligned with corresponding scheduled activities because the schedule was not resource loaded—personnel and budget requirements not matched to schedule. For example, one resource chart showed resource requirements peaking at 105 full-time equivalents, while a different chart showed resources peaking at 89 full-time equivalents.

Critical Path Identification and Analysis. The NAR panel determined that the preliminary SVU schedule had a number of tasks that were missing predecessor and

successor tasks. As a result, any critical path developed would not be fully defined and might not be representative of the true critical path of the project. Both NPR 7120.5C, paragraph 3.2.1.2.c(2), and the IEM Schedule Management Framework, paragraphs 3.2 and 3.3 and Appendix C require that all tasks and milestones be logically linked using the appropriate sequence relationships to enable critical path identification and analysis. The NAR panel noted that the lack of a true critical path was extremely problematic because the master schedule was the only viable program management tool. The NAR panel recommended that the SVU NAR should not be passed until a viable schedule with a defined critical path was developed.

Financial. The NAR panel determined that the SVU Project did not have adequate budget resources to cover the estimated cost. The inadequacy of the budget was exacerbated by the lack of a cost/risk analysis and an inadequately defined scope. In addition, no descope plan had been developed to relate requirements to priorities to budget. As a result, the NAR panel could not determine whether the available budget could support a reasonable requirements set. In addition, the NAR panel was concerned about the budgeting process for Center implementation because each Center was required to negotiate an implementation budget separately with the IEM Program. In addition, the budgets varied widely from Center to Center, with the lowest being $1.3 million at Johnson Space Center and the highest being $6.5 million at Ames Research Center. However, the IEM Program Director did not provide a clear explanation for the large variance.

The NAR panel noted that, historically, by the time of a NAR, the IEMP modules had met their budget constraints and had not exceeded budget. In some cases, however, requirements had not been fully met as the scope had been reduced to meet budget constraints. The SVU Project Office had recognized this as their primary risk item and had developed a mitigation plan. The NAR panel recommended that the SVU Project Office continue to develop a descope plan but not allow the NAR to be passed until the descope plan was fully developed and approved. The NAR panel recognized that the SVU Project Office might have to develop a multi-build approach to satisfy near-term FY 2007 requirements in the initial build, to be followed by implementation of the additional SVU requirements in subsequent builds. In addition, specific descope trigger points should be identified so that required resources are first allocated to the primary build to meet FY 2007 requirements.

Cost/Risk Analysis. The NAR panel found that the SVU Project had not performed a cost/risk analysis. The SVU Project, in conjunction with the IEM Program, identified approximately $4.5 million in reserves through a risk assessment process. However, that process was only applied to estimated costs associated with mitigating certain risks. No probabilistic risk assessment has been performed on the costs estimated to execute the project. The NAR panel noted the following flaws in the cost-risk analysis.

- The cost/risk assessment was performed on only 4 of the 23 identified project risks.

- The range in cost between the low, most likely, and high estimates was too narrow (plus/minus 5 percent) and without basis. The rationale for such a narrow range was that the most likely estimate was accurate, and therefore minimal variation was expected. The project provided no data to support this claim.

- Cost/risk assessment should be applied to all estimated costs, not just those costs estimated to mitigate risks. The approach used by IEMP/SVU leads to an incomplete assessment and a false sense of security. By failing to identify, quantify, and manage the uncertainties inherent in the SVU cost estimate, the project cannot determine a level of confidence for their estimate. Such a lack of knowledge can lead to an underestimation of cost or an overestimation of scope.

The NAR panel stated that, by failing to perform an adequate risk analysis on the estimated costs, the probability of being able to successfully execute within the estimated costs was potentially less than 50 percent. The NAR panel recommended that the SVU Project Office provide rationale for selection of risks for assessment with supporting logic, analysis, and experience; develop true best-case and worst-case scenarios to justify the high and low values; and perform a probabilistic cost/risk assessment of all SVU estimated costs.

In addition, the NAR panel presented the following analysis and recommendation of the work remaining, the budget, and their assessment of whether they believed the SVU Project could meet the go-live date without descoping the project.

> [T]he amount of work that needs to be accomplished in the allotted time is unprecedented relative to previous IEMP modules. For example, the IEMP Contract Management Module (CMM) has one-fifth the funding of SVU ($8.5M for CMM vs. $43M for SVU) from NAR until Go-Live while having an additional month (8 months vs. 7 months) for implementation. Due to an initial delay in the start of SVU, the funding for SVU has been delayed while the work content and end-date has remained the same. . . . Due to the delay of funding and the comparison to CMM and other modules such as ALDS [Agency Labor Distribution System], the schedule for implementation of SVU appears too aggressive and extremely success oriented. It is recommended that the project should re-evaluate its schedule estimate and potentially defer work that is currently planned as too aggressive to a subsequent Fiscal Year build. Consideration should be given to either a multi-build approach or a delay of the Go-Live date.

The March 3, 2006, draft NAR report points out that NPR 7120.5C, paragraph 3.2.d, describes the formulation phase as an iterative process whereby the requirements, budget, and schedule are concurrently developed until output products are mature and acceptable. The NAR panel concluded that, "It is the opinion of this NAR panel that this process be

allowed to continue and the Project remain in Formulation." The NAR panel discontinued work until March 27, 2006.

MANAGEMENT COMMENTS

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001

September 26, 2006

Reply to Attn of: Integrated Enterprise Management Program

TO: Assistant Inspector General for Auditing

FROM: Director, Integrated Enterprise Management Program

SUBJECT: Management Response to Draft Audit Report, "Governance of the Systems, Applications and Products Version Update Project Needs Improvement," (Assignment A-06-001-00)

Thank you for the opportunity to respond to the Draft Audit Report, Assignment A-06-001-00, provided on August 30, 2006. Below is NASA management's response to each of the recommendations set forth in the draft report. This is a consolidated response which includes inputs compiled from various members of the Integrated Enterprise Management Program (IEMP) staff, including the SAP Version Update (SVU) Project Manager and the IEMP Program Director. In addition, inputs were provided and consolidated from the Office of the Chief Financial Officer (OCFO).

Recommendation 1. Complete the business case.

Concur. After a thorough update and review from earlier drafts, the SVU Business Case Analysis (BCA) document was signed and approved by the IEM Program Director on June 12, 2006.

Recommendation 2. Include stakeholders from the Mission Directorates and mission support areas in the governing bodies for the follow-on project and give them voting rights.

Concur. NASA management concurs with the intent of this recommendation. The OCFO and IEMP management teams recognize the importance of involving key stakeholders in the implementation of process changes which impact stakeholders' ability to complete their mission. We have demonstrated this understanding through past cross organizational participation in recent reengineering efforts that were noted in the subject report, specifically the OneNASA Funds Distribution Streamlining initiative, the Full Cost Simplification effort, and the Project Management Information Improvement (PMII) Task Team.

As the Office of the Inspector General (OIG) is aware, there are certain accounting and financial management requirements, processes, and controls that must be adhered to, regardless of the desires and preferences of our stakeholder community. It is the responsibility of the Agency CFO, in accordance with the CFO Act, to ensure that the Agency's financial management systems incorporate those requirements and controls. The SAP Version Update (SVU) Project is first and foremost, an upgrade to our existing financial management system. As such, the OCFO is the first line of accountability for the appropriateness of the requirements and processes implemented as part of the SVU Project.

As the functional owner for this project, OCFO also utilizes existing governance structures to provide functional oversight to this effort and to fulfill responsibilities as defined in the CFO Act. The Financial Executive Round Table and the Financial Steering Group include ex-officio representation from our stakeholder communities. The chair of these governing groups includes appropriate input from these stakeholder representatives in the decision-making process, although not through a formal vote. We believe that we have been operating within the spirit of this recommendation and will continue to do so.

Other governance related improvements are currently being established on the IEM Program. Specifically, a governing Program Management Council (PMC) unique to IEMP is being established, and a new Management/Business Systems Integration Group (M/BSIG) is being formed. The M/BSIG will play a critical role in assessing and prioritizing IEMP's requirements. Both the IEMP PMC and the M/BSIG will include substantial stakeholder membership, including program/project representation.

Recommendation 3. Provide a plan for implementing the approved requirements that have been deferred and are no longer included in the October 2006 update.

Concur. NASA management concurs with the intent of this recommendation. All requirements being levied on IEMP will be reviewed by the M/BSIG to ensure that they are aligned with the Program's baseline, adequately integrated with other requirements sets, and are appropriately prioritized. The M/BSIG will recommend the sequencing/ phasing of IEMP implementation efforts (i.e., projects), taking into account requirements prioritization, budgets, resources, and other constraints (e.g., compliance with federal laws, regulations, and policies; other externally mandated requirements).

Per direction from NASA's Operations Management Council (OMC), IEMP will be leading an Agency-wide "data gap analysis" and develop a roadmap for NASA's future state business applications environment. A major output from this effort will be an Agency Concept of Operations (CONOPS) for enterprise business processes and enabling application technology. The CONOPS is something that GAO is pressing NASA to develop, and is a product that would align well with NASA's Enterprise Architecture.

The requirements set resulting from this effort will be reviewed and prioritized by the M/BSIG.

Recommendation 4. Conduct business process reengineering of NASA's processes before initiating the follow-on project.

Concur. As noted above, NASA will be developing a roadmap and CONOPS which will drive the prioritization of requirements and the sequencing of implementation projects. Each approved IEMP project will conduct business process reengineering (BPR) during its formulation phase. BPR was recently completed on the e-Travel project.

Recommendation 5. Provide a plan for implementing the requirements resulting from business process reengineering that were identified too late to be included in the October 2006 update.

Concur. NASA management concurs with the intent of this recommendation. As noted in response to Recommendation 3, all requirements being levied on IEMP will be reviewed and prioritized by the M/BSIG, and a roadmap will be developed accordingly. Notwithstanding, there is an element of ambiguity with respect to this recommendation. The IEM Program is not familiar with the requirements referenced by this recommendation as being "identified too late". We could not find any additional detail in the OIG's draft report. Further, the SVU Project does not have a record of any requirements that were "identified too late" to be considered for inclusion in the October 2006 update. NASA respectfully requests that the OIG identify the source or nature of the late requirements resulting from the SVU BPR so that these requirements can then be passed to the M/BSIG.

Recommendation 6. Conduct NARs earlier in the project process to take advantage of the analysis and feedback provided by the NAR panel.

Concur. The NASA Procedural Requirements (NPR) 7120.5 requires a Non-Advocate Review (NAR) to be conducted before moving into the "Implementation" phase. Although IEMP Projects follow NPR 7120.5, the Program will strive to schedule NAR's on future projects sooner in the formulation phase in order to benefit from the NAR team's feedback.

Enclosure 1 includes additional comments regarding the clarity and accuracy of the OIG draft report. Many of these points were previously provided to the OIG in response to the Discussion Draft report dated May 30, 2006.

Please contact me if you have any questions or require additional information regarding this response.

Bobby German

Enclosure

Cc:
Chief Engineer
Director, Management Systems Division
Director, Marshall Space Flight Center
Deputy Director, Integrated Enterprise Management
Program/Competency Center Manager
Deputy, Chief Financial Officer
SVU Project Manager
Deputy Director for Budget
Chief Financial Officer Liaison

Enclosure

Additional NASA comments on the OIG Draft Audit Report, "Governance of the Systems, Applications and Products Version Update Project Needs Improvement," (Assignment A-06-001-00)

SVU Project Requirements Development and Approval Process

(page ii) The SVU Project received approval of the 'initial' in-scope high level requirements from the Financial Executive Round Table on November 18, 2005, one day after the Project's internal Blueprint Kickoff that was conducted on November 17, 2005. This approval was documented in the minutes from the Financial Executive Round Table session and documentation reflecting this was provided to the OIG on December 5, 2005.

The SVU Project continued to work with their governance and the external teams that were providing requirements (e.g., OneNASA Team, the Financial Integration Team Program/Project Management Information Task Team, Full Cost Reform) to further define/solidify the related lower level detail requirements and additional scope items as part of the normal Formulation/Blueprint activities.

As noted by the OIG, the revised Scope Document has lagged in the signature cycle process. However, SVU Project requirements were worked with the SVU Project governance (Financial Steering Group and the Financial Executive Round Table) during the Formulation/Blueprint phase of the Project as noted above and approval was provided via other venues (e.g., Financial Steering Group review/approval of level 3 and level 4 requirements via email and Financial Executive Round Table scope review/approval via VITS). The actual timetable is as follows:

- Draft Level 3 and 4 requirements were sent to the FSG on 2/28/06.
- Whitepapers impacting level 3 and 4 requirements were sent to the FSG on 2/28 and reviewed with the FSG in the March 6, 7, 8 Preliminary Design Review Sessions.
- Requirements were updated to reflect decisions from those review/whitepapers and distributed to the FSG on March 9th.
- Whitepapers noted above that impacted level 3 and 4 requirements were distributed to the FERT on March 16th depicting the FSG decision Recommendations for FERT decisions.
- The final scope (high level presentation depicting the results of the whitepaper/requirement changes) was verbally approved at the 3/29 FERT VITs.

(page 11) The SVU Project did use requirements from the FY 2003 implementation of the Core Financial System as a 'starting point' for the SVU Project requirements. It is important to note that the SVU Project is a 'version update' to the existing Core Financial production system. These requirements were analyzed and updated accordingly based on input from various sources (e.g., baselined Core Financial requirements originally mandated by JFMIP were updated to reflect FSIO requirements—external requirements for Federal Financial Systems; requirements gathered from the reengineering efforts

driven by the OneNASA Funds Distribution Team and the Program/Project Management Information Task Team were added; requirements from the Full Cost Reform Team were also included; requirements related to process reengineering changes driven by the software were further considered). As of December 2005, the Project was still in the Formulation/Blueprint Phase. This phase was intended to be conducted in an 'iterative' process to develop the best possible set of Project requirements.

SVU Project Cost and Scope Changes

(page iii) IEMP is not clear on the method by which the OIG is calculating a 50% requirement reduction during the SVU upgrade project. This percentage does not align with the Scope Document dated December 15, 2005, or the Revision A Scope Document. Also, based on original project cost estimates prior to formulation compared to the available budget at that time, IEMP is not able to reconcile or determine the method by which the OIG is determining a $7M Project spending increase. IEMP had requested further clarification in this area in our comments to the previous discussion draft.

SVU Project Business Process Reengineering (BPR)/Whitepaper Development

(page ii) The SVU Project also began business process reengineering analysis driven by the software version changes prior to the start of the Blueprint Phase as part of the pre-formulation/assessment phase of the project. IEMP notes that the OIG referenced report has not taken this activity into account in this section.

(page 10) The OIG in the referenced report states that BPR requirements were not finalized until March 23, 2006. IEMP believes that is an inaccurate characterization. BPR teams worked initial Level 3 requirements and delivered them during the SVU Blueprinting process. One of the deliverables from the subsequent Blueprinting process is finalized set of requirements. The OIG did not reference the development of the Initial Scope Document and the surrounding business process. The initial Scope Document included high level verbiage for process reengineering requirements from the OneNASA Team and the Financial Integration Team (FIT) Program/Project Management Information Task Team (PMITT).

IEMP cannot reconcile from project records the March 23 2006 date cited by the OIG for whitepaper completion. Several whitepapers were developed to document design alternatives and obtain decisions from IEMP Project and Program governance. Most of these relate to lower level design decisions and were worked during the Blueprint Phase. Delineation of the 'level' of requirement (e.g., level 3, 4, and 5) and the associated impact has not been clearly factored in the OIG draft report.

(page 16) Whitepapers created by the SVU Project had various governance approval levels (e.g., financial policy related approved by the OCFO Communication Task Team; design changes (lower level requirements) approved by the Financial Steering Group; scope/process impacts by the Financial Executive Round Table). Since design is not completed until the end of Blueprint, it is unlikely that design decisions can be documented/approved prior to Blueprint initiation, as recommended in the referenced report.

SVU Functional Interface and Requirements Deferral

(page 12) The list of deferred items noted in the OIG report is not consistent with overall SVU Project or IEM Program activities, decisions and actions. The redesign of HHS grant processing has been deferred as noted. However, Bank Card interfaces remain within the scope of this project. This area may have been unclear due to a need for a technical re-write of the JAVA code related to these interfaces. The report implies the interface is not in scope, which is not the current SVU Project status. IEMP also notes the Phase II PMII requirements were the basis of the requirements delivered to the SVU Project from the Program/Project Management Information Task Team.

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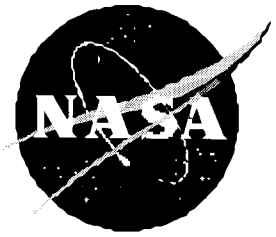

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