OFFICE OF INSPECTOR GENERAL

AUDIT OF USAID's PRE-DEPLOYMENT ACTIVITIES FOR ITS GLOBAL ACQUISITION SYSTEM

AUDIT REPORT NO. A-000-07-004-P
JULY 19, 2007

WASHINGTON, DC

July 19, 2007

MEMORANDUM

TO: Director, Office of Acquisitions and Assistance, Michael F. Walsh
                Chief Information Officer, David C. Anewalt

FROM: Director IG/A/ITSA, Melinda G. Dempsey   /s/

SUBJECT: Audit of USAID's Pre-Deployment Activities for Its Global Acquisition System
                (Audit Report No. A-000-07-004-P)

This memorandum is our report on the subject audit. In finalizing the report, we considered your comments on the draft report. Your comments are included in Appendix II.

This report contains six recommendations to help USAID improve its pre-deployment activities for its Global Acquisition System. Based on your response and the supporting documentation provided, final action has been taken on Recommendation No. 4. In addition, management decisions have been reached on Recommendation Nos. 1, 2, 3, 5, and 6. Please notify the Bureau for Management's Audit, Performance and Compliance Division when final action is completed.

I appreciate the cooperation and courtesy extended to each of the members of my staff during the audit.

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SUMMARY OF RESULTS

In an effort to improve USAID's acquisition functionality worldwide through advanced technology and business process improvements in support of eGovernment initiatives, USAID plans to implement a web-based, commercial off-the-shelf software package, referred to as the Global Acquisition System (GLAS) by March 2008. (See page 3.) As such, this audit was conducted to determine whether USAID followed key best practices before deploying the system. These practices include:

- Preparing functional and technical requirements.

- Designing system interfaces.

- Managing project risk management.

- Testing.

- Migrating data. (See page 4.)

If followed, these practices will help optimize information technology enabled investments, ensure service delivery, and provide a measure against which to judge if things go wrong.

This audit determined that, although USAID properly designed the approved interfaces with its other systems and designed a good system for managing project risks, USAID did not adequately follow best practices before deploying GLAS. USAID engaged in some positive practices such as maintaining a GLAS (1) program risk register that identified risks to the project and cited mitigating actions in the event the risk became a real occurrence and (2) issues log that captured real events that could impact the project, took corrective actions for those occurrences, and noted the outcomes of those actions. Also, USAID accomplished fairly seamless interfaces of GLAS with its core financial system, known as Phoenix, and its operating data store. However, USAID did not adequately follow best practices before deploying its Global Acquisition System. Specifically, deficiencies were found in GLAS pre-deployment activities in the manner in which the GLAS Team addressed (1) technical infrastructure[1], (2) performance requirements, (3) system functionality, (4) data migration planning, (5) test results and change request tracking, and (6) nonfunctional testing. (See pages 5 through 13.)

We recommended that the GLAS Team (1) formally evaluate GLAS against USAID's technical infrastructure prior to full deployment of GLAS, (2) develop performance requirements and test GLAS against those requirements prior to full deployment of GLAS, (3) identify a resolution for incremental funding functionality issues (4) develop comprehensive mission data migration plans, (5) redesign its test results and change request tracking system, and (6) correct weaknesses in testing. (See pages 5 through 13.)

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[1] The equipment, software, services, and products used in storing, processing, transmitting, and displaying information.

In response to our draft report, USAID agreed with the audit findings and all six recommendations. Additionally, the Agency stated that many of the concerns cited in the report were also identified during a recent Independent Verification and Validation, and mitigation activities had been initiated. USAID outlined the management decisions that it had made to address each of the report's recommendations. In addition, it established target dates for implementing the recommendations. Based on the Agency's comments and the supporting documentation provided, final action has been taken on Recommendation No. 4, and management decisions have been reached to address Recommendation Nos. 1, 2, 3, 5, and 6. (See page 14.)

BACKGROUND

The Procurement System Improvement Project is an effort to improve USAID's acquisition functionality worldwide through advanced technology and business process improvements in support of eGovernment initiatives. Specifically, USAID plans to automate its end-to-end procurement process, while standardizing and streamlining the Agency's business processes. The project is designed to streamline business processes by replacing USAID's (1) procurement function of the New Management System in Washington, (2) ProDoc system in Washington and overseas missions, and (3) manual spreadsheets in the overseas missions. To accomplish this, USAID plans to implement a web-based, commercial off-the-shelf software package, referred to as the Global Acquisition System (GLAS). In addition, USAID intends to fully interface GLAS with the Agency's core financial system, Phoenix. As of January 2007, USAID has spent over $12.2 million[2] for activities toward the implementation of GLAS.

In December 2006, USAID piloted its GLAS software in 10 Washington Offices. According to current plans, the remaining system implementation schedule is as follows:

Activity	Start Date	Completion Date
Washington Deployment	April 2007	June 2007
Overseas Pilot	June 2007	July 2007
Overseas Deployment	October 2007	March 2008

According to the Clinger-Cohen Act of 1996 (Public Law 104–106), agencies should achieve the following for information technology (IT) investments:

- Use a disciplined process to maximize the value and assess and manage the risks of IT acquisitions.

- Ensure specified requirements are met.

- Promote the effective and efficient design and operation.

In 2005, the IT Governance Institute® (established to advance international standards in directing and controlling an enterprise's information technology) issued Control Objectives for Information and related Technology (COBIT 4.0). COBIT 4.0 provides best practices and presents activities in a manageable and logical structure. COBIT's best practices represent the consensus of experts and are strongly focused on control and less on execution. These practices will help optimize IT-enabled investments, ensure service delivery, and provide a measure against which to judge if things go wrong.

USAID's IT Governance implementation is based on COBIT 4.0.

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[2] Unaudited. Note that the total estimated cost for GLAS is not clear because USAID combines GLAS budgetary information with the Joint Assistance Management System Project (JAMS). The Procurement System Improvement Project originally combined JAMS (a joint USAID/Department of State project to implement system for assistance instruments, e.g., grants) with GLAS, which is a USAID-only system for acquisition instruments (e.g., contracts).

AUDIT OBJECTIVE

This audit was added to the OIG's annual audit plan to answer the following question:

> **Did USAID follow key best practices before deploying its Global Acquisition System?**

For this audit, key best practices are (1) preparing functional and technical requirements, (2) designing system interfaces, (3) managing project risk management, (4) testing, and (5) migrating data.

A description of our scope and methodology is contained in Appendix I.

AUDIT FINDINGS

Although USAID defined the interfaces and designed a good system for managing project risks, USAID did not adequately follow best practices before deploying its Global Acquisition System (GLAS).

USAID designed the interface of GLAS with its core financial system and Operational Data Store[3], to occur seamlessly, with adequate provisions and controls to minimize potential conflicts and errors.   Furthermore, GLAS' commercial off-the-shelf (COTS) baseline functionalities launch and interface with web-based applications, such as Federal Procurement Data System - Next Generation and FedBizOpps (which are two applications used throughout the Federal Government).   USAID also designed a comprehensive scheme for managing the project risk. Examples included maintaining a GLAS program risk register, as well as a GLAS issues log, and a plan for identifying and categorizing risks and mitigating high risks.   However, the Agency did not adequately follow best practices before deploying its Global Acquisition System.   Specifically, deficiencies were found in the areas of (1) technical infrastructure, (2) performance requirements, (3) system functionality, (4) data migration planning, (5) test results and change request tracking, and (6) nonfunctional testing.   These findings are discussed below.

USAID's Technical Infrastructure
Not Formally Evaluated

Summary: USAID did not evaluate the overall impact on the technical infrastructure of an integrated product with the Agency's financial system and other external interfaces, as called for by COBIT 4.0. This problem occurred because USAID took a reactive approach and planned to adjust the software and the infrastructure, as necessary. Without an initial assessment of the impact on other applications and the overall USAID infrastructure, the Agency can not be confident that the network will remain stable and its performance uncompromised with the introduction of GLAS.

COBIT 4.0, section PO3.2, "Technological Infrastructure Plan," calls for creating and maintaining a technological infrastructure plan that is in accordance with the IT strategic and tactical plans. The plan is to be based on the technological direction and should include contingency arrangements and direction for acquisition of technology resources. It should also consider changes in the competitive environment, economies of scale for information systems staffing and investments, and improved interoperability of platforms and applications.

In its solicitation for the COTS product, USAID included a description of the Agency's infrastructure and telecommunication challenges. Further, as part of the technical response, each vendor was required to address any approaches or techniques that optimize the product's ability to perform in each of the following conditions:

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[3] A single repository that can be used to combine data from multiple source systems into a homogeneous form for reporting purposes.

- 10BaseT LAN with 1 ms+ latency.[4]
- 128KB Bandwidth and 600ms + latency Wide-Area-Network[5].

In evaluating the proposals, USAID assessed the COTS products' ability to meet the functional, certain technical (such as whether it would operate on certain platforms), and system deployment requirements. The assessments were documented on vendor findings worksheets and ultimately became the basis for selecting the COTS product. While these assessments were comprehensive, USAID did not methodically evaluate the impact of the prospective COTS product on USAID technical infrastructure,[6] including the information technology environment bulleted above. Although USAID performed a preliminary study of impacts of the software on existing systems, applications, and databases, the study was not complete and did not include the impact of GLAS on the network infrastructure as a whole. Specifically, USAID's preliminary study focused only on the impact of the software on data in each individual system, application, and database; it did not evaluate the overall impact on the technical infrastructure of an integrated product with the Agency's financial system and other external interfaces.

This problem occurred because the Agency took a reactive approach and planned to adjust the software and the infrastructure as necessary. Specifically, as a mitigation strategy, the GLAS Team planned to conduct successive performance testing of the system throughout key phases of the implementation.

Without an initial assessment of the impact on other applications and the overall USAID infrastructure, the Agency cannot be confident about the integrity (i.e., whether the network will remain stable and its performance uncompromised with the introduction of the COTS application) of the network.

> *Recommendation No. 1: We recommend that, prior to full deployment, the Global Acquisition System Team, in collaboration with the Office of the Chief Information Officer, (a) formally evaluate its technical infrastructure with respect to the system implementation, determining impact on existing platforms and applications, and (b) based on that evaluation, implement corrective actions to ensure that interoperability of platforms and applications will be optimized.*

Software Not Formally Evaluated
Against Performance Requirements

Summary: USAID did not evaluate the software against performance requirements during the selection process, as prescribed by COBIT 4.0. This problem occurred because the Agency did not define acceptable performance standards for GLAS. Without timely development, consideration, and testing of performance requirements, USAID runs the risk of not meeting performance needs of the end users.

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[4] Performance on a 10 Mbps Ethernet standard at 1 millisecond plus the latency of the network.
[5] Performance on a 128KB Bandwidth at 600 milliseconds plus the latency of the WAN.
[6] The equipment, software, services, and products used in storing, processing, transmitting, and displaying information.

COBIT 4.0, section AI1.1, "Definition and Maintenance of Business Functional and Technical Requirements," calls for identifying, prioritizing, specifying and agreeing on business functional and technical requirements covering the full scope of all initiatives required to achieve the expected outcomes of the information technology-enabled investment program, and to define the criteria for acceptance of the requirements. Requirements should take into account, among other things, performance.

Further, COBIT 4.0, section AI2.5, "Configuration and Implementation of Acquired Application Software," states that issues to consider when implementing a system include (among other things) the organization's information architecture, existing applications, interoperability with existing application and database systems, and system performance efficiency.

Finally, COBIT 4.0, section AI2.7, "Development of Application Software," provides guidance on software development (or, in this case, acquisition of a commercial off-the-shelf product). That section puts an emphasis on ensuring that automated functionality is developed in accordance with design specifications, development and documentation standards and quality requirements. The guidance calls for approval and sign-off on each key stage of the application software development process following successful completion of functionality, performance and quality reviews. Issues to be considered include approval that design specifications meet business, functional and technical requirements.

However, USAID did not evaluate the software against performance requirements. Specifically:

- USAID did not evaluate the software against performance requirements during the selection process. Instead, after selection, USAID only measured the network performance at USAID/Washington and selected Missions to gauge performance in anticipation of enhancements to the existing infrastructure after the establishment of acceptable performance standards for GLAS.

- System performance testing—which should have been performed before the system was deployed—was not performed prior to deploying the system.

This problem occurred because the Agency did not define acceptable performance standards for GLAS. The Test Summary Report revealed that specifications were still to be defined or determined, based on user needs/expectations and Agency requirements in performance areas. For example, according to the Report, the system shall:

- Perform user requested transactions (server-in to server-out, measured at the server) *within the performance targets to be specified* (emphasis added).

- Generate reports (measured at the reporting server) *within the performance targets to be specified* (emphasis added).

- Respond to user requested transactions (user-request to system-response, measured at the client) within the performance targets calculated by multiplying the server class target *by the additional latency factors to be specified* (emphasis added).

- Perform transactions with other systems *within the performance targets to be specified* (emphasis added).

Instead of setting performance standards, the Agency has relied on contingency plans to meet performance requirements. As such, any necessary improvements in the application performance are expected to be addressed through tuning, compression or caching capabilities.

Without timely development, consideration, and testing of performance requirements, USAID runs the risk of not meeting performance needs of the end users.

> *Recommendation No. 2: We recommend that, prior to full deployment, the Global Acquisition System Team, in collaboration with the Office of the Chief Information Officer, develop realistic, objective performance requirements and complete tests of the Global Acquisition System against those requirements, to include taking appropriate corrective actions.*

GLAS Software Did Not Provide Functionality
for Incrementally-Funded Contracts
In Accordance With USAID's Business Processes

> Summary: COBIT 4.0, section AI2.7 provides guidance on software development and puts emphasis on ensuring that automated functionality is developed in accordance with design specifications. However, GLAS does not provide for functionality to record incrementally-funded contracts in accordance with USAID's business processes. This problem occurred because, although the vendor was aware of the need for incremental funding, the vendor did not have a detailed understanding of USAID's business processes until they started actually working with USAID. As a result, this significant functionality requirement of the Agency was met through an inefficient workaround—which was cumbersome for awards with multiple line items.

The Clinger-Cohen Act of 1996, Title LI – Responsibility for Acquisitions of Information Technology, Subtitle C – Executive Agencies, Sec. 5123 – Performance and Results-Based Management, Item 5, states that the head of the executive agency shall:

> …analyze the missions of the executive agency and, based on the analysis, revise the executive agency's mission-related processes and administrative processes as appropriate before making significant investments in information technology that is to be used in support of the performance of those missions.

COBIT 4.0, section AI2.7, "Development of Application Software," provides guidance on software development (or, in this case, acquisition of a commercial off-the-shelf product). That section puts an emphasis on ensuring that automated functionality is developed in accordance with design specifications, development and documentation standards and quality requirements. The guidance calls for approval and sign-off on each key stage of the application software development process following successful completion of functionality, performance and quality reviews. Issues to be considered include approval that design specifications meet business, functional and technical requirements.

The COTS application acquired for GLAS is ideal for fixed-price contracts where the commitment equals the total estimated cost as well as the obligated amount. For a fixed-price contract, the line-item amount is automatically calculated. However, USAID typically uses cost-type awards, whereby incremental-funding is commonly used. However, GLAS does not provide for this functionality in accordance with USAID's business processes.

This problem occurred because, although the vendor was aware of USAID's need for incremental funding, the vendor did not have a detailed understanding of USAID's business processes until they started actually working with USAID. According to Agency officials, the application was designed to meet the needs of the majority of Federal agencies' business processes, but it did not completely meet the needs of USAID's processes.

As a result, USAID established a workaround requiring the user to manually adjust each line item to establish the total estimated cost. The workaround was cumbersome and may be complicated for awards with multiple line items. As such, this deficiency will have to be resolved because it is not an efficient solution in the long term.

According to USAID officials, to address this issue, users were being provided significant training to work with the new process as designed in the software. In the meantime, the GLAS team has begun to consider other ways to bridge the gap between the software and USAID's business process for incremental funding. Nonetheless, we are making the following recommendation.

> *Recommendation No. 3: We recommend that the Global Acquisition System Team perform an analysis to identify and select the best method to resolve the inefficiencies with incremental funding functionality to meet USAID's acquisitions needs.*

Data Migration Not Adequately Planned

Summary: USAID did not adequately plan for its data migration for USAID/Washington pilots and overseas mission pilots, as required. These problems occurred because the Team did not develop detailed data migration plans for either Washington or overseas missions. If data are not effectively migrated to GLAS from the legacy system, the GLAS project may not be successful, as users will not be able to perform their work.

National Institute of Standards and Technology Special Publication 800-64 Rev.1, paragraph 2.3.5, "Disposition," discusses what activities should occur during the final

phase in the Software Development Life Cycle. According to that section, particular emphasis is to be given to proper preservation of the data processed by the system, so that the data is effectively migrated to another system or archived in accordance with applicable records management regulations and policies for potential future access.

However, as shown below, improvements were needed in data migration planning:

- The GLAS Team planned to migrate data to GLAS from the legacy system that originally processed USAID/Washington pilot offices' transactions in one operation. As such, in December 2006, 227 award files successfully migrated, with 15 that did not migrate due to file recognition problems. Subsequently, the GLAS Team realized that they did not completely and accurately map data elements and locations within the legacy system to permit all intended data to migrate into the appropriate fields within GLAS. Therefore, material segments of the population of awards were inadvertently omitted. As such, a second migration was necessary, in which an additional 224 award files—almost 50 percent of the original intended awards—migrated, with two award files not migrating.

- The pilot data migration for overseas missions was planned for February and March 2007, but was since rescheduled for June and July 2007. This postponement by four months was to allow for further functional development of the GLAS project prior to the mission migration. Further, after the GLAS team re-examined its operations, they realized that Indefinite Quantity Contracts (IQCs) were needed by the overseas pilot locations. Therefore, they accelerated the migration of IQCs from December 2007 (which coincided with the original project completion date) to May 2007.

These problems occurred because, although the GLAS Team developed a Data Migration Strategy, the Team did not develop detailed data migration plans for either Washington or overseas missions, to include defining the data structure for the fields of information to be entered into GLAS. This is particularly critical for USAID's overseas missions because no uniform electronic record of acquisition data exists. Therefore, each mission will manually enter data into spreadsheets sent to them by the GLAS project team. As such, detailed instructions on data to be entered into each field would help ensure that data entered is consistent worldwide.

Further, according to the GLAS Team, the original project schedule did not allow them time to adequately review the data to be migrated and run test scripts to search for errors in their data migration process. In addition, according to the Lessons Learned Report[7], for future GLAS deployments a strategy needs to be identified to ensure all records will be migrated as planned.

If data are not effectively migrated to GLAS from the legacy system, the GLAS project may not be successful, as users will not be able to perform their work. More detailed planning could alleviate this. Although USAID has taken actions to correct the Washington data migration problems (as discussed above), we are making the following recommendation to assist with the mission migration.

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[7] This report identified those activities that team members believed went well during pilot implementation as well as those areas where improvements could be made in future rollouts.

Recommendation No. 4:   We recommend that, prior to the mission migration, the Global Acquisition System Team develop and implement comprehensive mission data migration plans that include defining data structure in fields to be migrated and conducting test runs .

**Data in Tracking System Not Linked to
Test Results or Change Requests**

Summary: The data in USAID's system used to track test problem reports could not be referenced to tests results requiring follow-up or approved change requests to be implemented, as required. This deficiency occurred because the system, known as JIRA[8], was not adequately designed as a tracking tool. As such, it created the possibility that test problems may not be resolved in a timely fashion, and that change implementation may not be easily verified to the specifics of the approved change requests.

COBIT 4.0, section AI6, "Manage Changes," calls for a change management process that is well developed and consistently followed for all changes. All changes are subject to thorough planning and impact assessment to minimize the likelihood of post-production problems.

According to the Comprehensive Test Plan, all problems discovered during each test phase will be recorded and tracked by creating failed test reports via an electronic database. The test problem reports will be re-tested by repeating the test procedures that caused the original failure. Depending on the problem, it may be necessary to execute additional test procedures to ensure that the problem has been resolved. The severity of the problem will determine whether or not the fix and the release will pass testing.

As problems were encountered, the GLAS testers and implementers entered test problem reports into USAID's JIRA application. However, the data in JIRA were not indexed to (i.e., did not have a common reference number with) test results requiring follow-up, or to approved change requests to be implemented.

This deficiency occurred because JIRA was not adequately designed as a tracking tool. As such, it created the possibility that test problems may not be resolved in a timely fashion, and that change implementation may not be easily verified to the specifics of the approved change request. Further, test problem reports could not be traced to their origins.

The GLAS Team acknowledged this weakness and indicated that they would make changes to provide greater traceability in JIRA. Nonetheless, to ensure that this redesign is followed through, we are making the following recommendation.

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[8] JIRA is a bug tracking, issue tracking, and project management application.

Recommendation No. 5: We recommend that the Global Acquisition System Team carry through its redesign of the tracking system to include greater traceability between JIRA and the sources of the test problems reported.

The GLAS Team Could Not Assure That
Most Nonfunctional Tests Were Performed

Summary: The GLAS team could not provide evidence that nonfunctional requirements (other than system performance) were tested, as required by the Comprehensive Test Plan for GLAS. Moreover, it was not clear that the validation method described in the Test Summary Report was actually applied. The primary cause of these testing deficiencies was the rush to meet the deadline for the pilot deployment. Without evidence that nonfunctional requirements were tested—using the proper validation methodology—and that the test results were as desired for the nonfunctional requirements, GLAS may not meet USAID's nonfunctional requirements.

According to the GLAS Comprehensive Test Plan, all test verification points will be supported by screen prints captured during test execution. In addition, the methodology of validation (that is analysis, demonstration, inspection or testing) depended on the item, procedure, or operation being tested.

However, the GLAS team could not provide evidence that nonfunctional requirements (other than system performance), such as log-in password, print commands, failure of improper operation execution, were tested, as required by the Comprehensive Test Plan for GLAS. Moreover, in discussing validation with the contractor responsible for testing the nonfunctional requirements, it was not clear that the validation method described in the Test Summary Report was actually applied to the item, procedure, or operation being tested. For example, in the operation:

- "The system shall require a log-in password that does not begin or end with a number," the tester thought the system had passed when the report stated that it failed.

- "The system shall provide function-specific on-line help text for each screen," the tester thought that the validation methodology should have been by Inspection, rather than by Testing as listed in the report because these documents were physical manuals rather than on-line help menus. Thus, in this case, the result listed as "passed" should have been "failed."

- "The system shall mark or identify all Sensitive But Unclassified (SBU) data that is displayed," the tester said no SBU document was processed in the test—yet the test result said "passed."

The primary cause of these testing deficiencies was the rush to meet the December 2006 deadline for the pilot deployment. According to the GLAS team, typically, non-functional requirements are verified by inspection or observation, as was done with GLAS. In the Lessons Learned Report, however, the GLAS team

acknowledged that several issues were uncovered after the system went live that should have been identified in system testing. As such, the GLAS team decided to allow more time for system testing.

Nonetheless, in the absence of written documentation, including screen prints when applicable, of when and under what circumstances the validation procedures were done, USAID could not be assured that the nonfunctional requirements were ever tested. Moreover, without evidence that nonfunctional requirements were tested using the proper validation methodology, GLAS may not meet USAID's nonfunctional requirements. Therefore, we are making the following recommendation.

> *Recommendation No. 6: We recommend that the Global Acquisition System Team require the Contractor to provide all documentation described in the Comprehensive Test Plan as support for the validation performed on nonfunctional requirements.*

EVALUATION OF MANAGEMENT COMMENTS

In response to our draft report, USAID agreed with the audit findings and described planned actions to address the recommendations. Additionally, they stated that many of the concerns cited in the report were also identified during a recent Independent Verification and Validation, and mitigation activities had been initiated. The Agency's comments are included in their entirety, without attachments, in Appendix II.

Regarding Recommendation Nos. 1, 2, 3, 5, and 6, the Agency outlined its plans to address the audit recommendations and provided target dates for when final action would be completed. Based on the Agency's comments and the establishment of target dates, management decisions have been reached for each of these recommendations.

In regard to Recommendation No. 4, the Agency stated that the GLAS Team had refined the data migration plan to include defining data structure in fields to be migrated and scheduling dry runs, and had put this new plan into effect for pilot mission programs in June 2007. Based on the Agency's comments and our review of the supporting documentation, final action has been taken for Recommendation No. 4.

Finally, note that, in our final report, we modified the language in two of our recommendations from the language used in the draft report sent to management, as follows:

- For Recommendation No. 1, we broke the recommendation into two parts: (a) formally evaluate its technical infrastructure with respect to the system implementation, determining impact on existing platforms and applications, and (b) based on that evaluation, implement corrective actions to ensure that interoperability of platforms and applications will be optimized.

- For Recommendation No. 4, we replaced "scheduling dry runs" with "conducting test runs," to encourage doing more than just preparing a schedule and to use more common terminology.

However, the modified language will not impact the management decisions on these recommendations.

In their comments, USAID management disagreed with the statement that a reactionary approach was taken to plan the infrastructure needs for GLAS, stating that their approach was consistent with best practices. However, as stated in the report, according to the GLAS Team, corrective actions would be taken as problems arose. USAID, nevertheless, agreed to conduct a system impact analysis on the technical infrastructure and other USAID applications. Therefore, no changes were made in the report to address this comment.

SCOPE AND METHODOLOGY

Scope

The Office of Inspector General, Information Technology and Special Audits Division, performed this audit in accordance with generally accepted government auditing standards. The purpose of the audit was to determine whether USAID followed key best practices for the following key activities before deploying its Global Acquisition System:

- Preparing functional and technical requirements.

- Designing system interfaces.

- Managing project risk management

- Testing.

- Migrating data.

Audit fieldwork was conducted at USAID headquarters in Washington, D.C., from November 28, 2006, through February 20, 2007.

Methodology

To answer the audit objective, we obtained and reviewed GLAS documentation and conducted interviews with the GLAS project team. Specifically, using the IT Governance Institute®'s COBIT 4.0 as a guide, we (among other things):

- Reviewed a judgmental sample of requirements, plans for the technical infrastructure, and the system configuration management process. We did not evaluate the process in developing the requirements or assess the accuracy or completeness of the requirements themselves.

- Determined whether interface specifications/standards were defined, incorporated, and tested. However, we only reviewed interfaces which USAID management had officially approved at the start of this audit.

- Assessed the risk management and contingency plans for high and medium risks. We did not review the risk identification process for GLAS.

- Reviewed the overall test plan and resultant systems test, user acceptance test, and performance test reports.

- Assessed the comprehensiveness of the data migration strategy, including data preparation, testing, data migration, data clean-up and back-out plan.

Finally, we followed up on recommendations from prior audits, as related to our audit objective. We did not set a materiality threshold for this audit.

MANAGEMENT COMMENTS

June 29, 2007

MEMORANDUM

TO: IG/A/ITSA, Melinda G. Dempsey

FROM: M/CIO (Acting), Philip M. Heneghan
                M/OAA, Michael F. Walsh

SUBJECT: Management Response to Office of Inspector General's Report: *Audit of
                USAID'S Pre-deployment Activities for its Global Acquisition System (Draft
                Report No. A-000-07-00X-P, March 30, 2007)*

Thank you for the opportunity to respond to the subject draft audit report. We appreciate your review and have provided a response that includes management decisions and comments.

Many of the concerns cited in the report were also identified during a recent Independent Verification and Validation (IV&V), and mitigation activities have been initiated.

Additionally, as a general caveat to the management comments listed in this response, it is important to note that mitigation activities and timelines are based on the assumption that requested funding will gain timely approval.   The timeline for incorporation of the recommendations set forth in this report is also based upon the assumption that requested funding is approved. Therefore, process improvement activities necessary to adhere to these recommendations will be supported to the extent that funding and resources are available.

The following are management decisions regarding the proposed audit recommendations:

Recommendation No. 1:

We recommend that, prior to full deployment, the Global Acquisition System Team, in collaboration with the Office of the Chief Information Officer, formally evaluate its technical infrastructure with respect to the system implementation, determining impact on existing platforms and applications. In addition, based on that evaluation, implement corrective actions to ensure that interoperability of platforms and applications will be optimized.

Management Decision:

The Global Acquisition System (GLAS) Team and the Office of the Chief Information Officer will conduct a system impact analysis on the technical infrastructure and other USAID applications. Based on the results of the impact analysis, the GLAS implementation plan will be adjusted by October 2008.

Recommendation No. 2:

We recommend that, prior to full deployment, the Global Acquisition System team, in collaboration with the Office of the Chief Information Officer, develop realistic, objective performance requirements and complete tests of the Global Acquisition System against those requirements, to include taking appropriate corrective actions.

Management Decision:

The Global Acquisition System (GLAS) Team and the Office of the Chief Information Officer will develop performance requirements by April 2008. Performance testing and monitoring began during the pilot mission programs in June 2007 and resulted in no issues.   Based on the test results at the various mission organizations, corrective action will be taken concurrent with world-wide deployment.

Recommendation No. 3:

We recommend that the Global Acquisition System Team perform an analysis to identify and select the best method to resolve the deficiencies with incremental funding functionality to meet USAID's acquisitions needs.

Management Decision:

The Global Acquisition System (GLAS) Team will assess the best methods to resolve the deficiencies with the incremental funding functionality in PRISM to meet USAID's acquisitions needs. A solution will be delivered by the software vendor via GLAS release 2.0 by January 2008.

Recommendation No. 4:

We recommend that, prior to the mission migration, the Global Acquisition System Team develop and implement comprehensive mission data migration plans that include defining data structure in fields to be migrated and scheduling dry runs.

Management Decision:

The Global Acquisition System (GLAS) Team has refined the data migration plan to include defining data structure in fields to be migrated and scheduling dry runs. This new plan was put into effect for pilot mission programs in June 2007. We recommend that this recommendation be closed upon final report issuance.

Recommendation No. 5:

We recommend that the Global Acquisition System Team carry through its redesign of the tracking system to include greater traceability between JIRA and the sources of the test problems reported.

Management Decision:

The Global Acquisition System (GLAS) Team will redesign the tracking system for release 2.0 to include traceability between JIRA and the sources of reported test problems by January 2008.

Recommendation No. 6:

We recommend that the Global Acquisition System Team require the Contractor to provide all documentation described in the Comprehensive Test Plan as support for the validation performed on nonfunctional requirements.

Management Decision:

The Global Acquisition System (GLAS) Team will require the Contractor to provide all documentation described in the Comprehensive Test Plan as support for the validation performed on nonfunctional requirements by January 2008.

Additional Comments on Report

The following comments are being provided for your consideration in an effort to strengthen your report.

We disagree with the observation that the GLAS team took a reactionary approach for the planning of the infrastructure needs for GLAS. Consistent with best practices guidance from the Software Engineering Institute on COTS-Based Systems (*CMU/SEI-2000-TR-010, An Activity Framework for COTS-Based Systems*), the alignment of the system architecture with the known telecommunications infrastructure constraints has been validated iteratively. Prior to selection of the PRISM product in support of GLAS, baseline tests were conducted to determine whether the application was capable of meeting performance requirements for the program. Additional performance tests were conducted during the development cycle and prior to the LAC pilot "go live" decision. For each iteration, the application has been more mature in its configuration and the performance tests have been used to validate alignment of the system architecture with the Agency's telecommunications infrastructure constraints. It is our intention to continue to monitor and evaluate the existing system, network, and infrastructure on a regular basis and develop optimization plans as needed to ensure system interoperability.

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