

ASSESSMENT REPORT  
11-03

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**FEDERAL DIGITAL SYSTEM (FDSYS)  
INDEPENDENT VERIFICATION AND VALIDATION –  
THIRTEENTH QUARTER REPORT ON RISK MANAGEMENT,  
ISSUES, AND TRACEABILITY**

**December 15, 2010**

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**Date**

December 15, 2010

**To**

Chief Information Officer

**From**

Assistant Inspector General for Audits and Inspections

**Subject****Federal Digital System (FDsys) Independent Verification and Validation (IV&V) – Thirteenth Quarter Report on Risk Management, Issues, and Traceability  
Report Number 11-03**

The Government Printing Office (GPO) Office of Inspector General (OIG) is conducting independent verification and validation (IV&V) of GPO's Federal Digital System (FDsys)<sup>1</sup> implementation. The OIG contracted with American Systems<sup>2</sup> to conduct IV&V for the public release of FDsys.<sup>3</sup> As part of its contract with the OIG, American Systems is assessing the state of program management, technical and testing plans and other efforts. American Systems is required by the contract to issue to the OIG a quarterly Risk Management, Issues, and Traceability Report, providing observations and recommendations on the program's technical, schedule, and cost risks as well as requirements traceability of those risks and the effectiveness of the program management processes in controlling risk avoidance. Additionally, at the end of each FDsys release phase, American Systems is required to issue a release phase summary program management report that addresses delivery of the technical baseline per the FDsys Master Program Schedule and the risks that affect the schedule's critical path to the next phase.

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<sup>1</sup>The FDsys program is a multimillion dollar effort that GPO is funding and managing to modernize the GPO information collection, processing, and dissemination capabilities it performs for the three branches of the Federal Government.

<sup>2</sup>American Systems, located in Chantilly, Virginia, is a large information technology company with significant experience in the realm of IV&V for Federal civilian and Defense agencies, including the Department of State, the Navy, and the U.S. Agency for International Development.

<sup>3</sup>American Systems IV&V methodology is referenced to the framework established by the Institute of Electrical and Electronic Engineers (IEEE) Standard 1012-2004, the IEEE Standard for Software Verification and Validation.

The enclosed report is American Systems' quarterly report for the period August 1, 2010 to October 21, 2010. The period covered by this report was decreased because the period covered by the previous report (Twelfth Quarter) had been extended to July 31, 2010. The period covered in this report was extended to October 21, 2010 to include the FDsys Program Management Office (PMO) updates of the Release 1 Completion Master.

During this review period, IV&V did not identify any new technical, cost, or schedule risks. As a result, we did not make any new recommendations and therefore, did not request a response to the report from the FDsys PMO. The report does discuss issues and concerns that we are bringing to management's attention as the PMO implements the remaining efforts to complete Release 1 and shutdown GPO Access. These issues and concerns are encompassed by open recommendations provided to the PMO in previous IV&V Quarterly Reports.

The final report distribution is in Appendix A.

If you have questions concerning this report or the IV&V process, please contact Mr. Brent Melson, Deputy Assistant Inspector General for Audits and Inspections at (202) 512-2037, or me at (202) 512-2009.

A handwritten signature in black ink that reads "Kevin J. Carson". The signature is written in a cursive style with a large initial 'K' and a long, sweeping underline.

Kevin J. Carson  
Assistant Inspector General for Audits and Inspections

Enclosure

cc:  
Deputy Public Printer  
Acting Chief Management Officer  
Chief Technology Officer

<b>IV&amp;V RISK MANAGEMENT, ISSUES, AND TRACEABILITY REPORT</b>	
<b>TO:</b>	Brent Melson
<b>FROM:</b>	David Harold
<b>IV&amp;V OF:</b>	Quarterly Report (Draft – Document Number 02-016)
<b>SUBJECT:</b>	August 01, 2010 – October 21, 2010 Quarterly Report
<b>DATE:</b>	November 2, 2010
<b>CC:</b>	Dan Rose, Jon Valett, Shawn O'Rourke

### ***Background:***

This report presents the critical technical, schedule, and cost risks identified for the Government Printing Office (GPO) Federal Digital System (FDsys) Program. Specifically, it provides a high-level overview of the key risks and issues that Independent Verification & Validation (IV&V) has identified during the quarter ending September 30, 2010.

This is the thirteenth IV&V Quarterly Report and covers the period from August 1, 2010 to October 21, 2010. The period covered by this Quarterly Report is shorter because the period covered by the previous Quarterly Report (twelfth Quarterly) had been extended to July 31, 2010 in agreement with the Office of the Inspector General (OIG). Additionally, per agreement with the Office of the Inspector General (OIG), the due date for this, the thirteenth IV&V Quarterly Report, has been extended to October 21, 2010 due to the FDsys Program Management Office (PMO) updates made to the FDsys Release 1 Completion Master.

During this reporting period, the FDsys PMO completed the deployment of several post-Release 1 production builds and prepared/updated FDsys technical documentation. The production builds are summarized below along with the other events that occurred during the fourth quarter of Fiscal Year (FY) 2010.

### ***References:***

- a. R1 Completion Master (in SharePoint),
  - o Dated October 1, 2010.
  - o Dated October 7, 2010.
  - o Dated October 19, 2010.

*The R1Completion Master is the Release 1 Completion Schedule developed and maintained by the FDsys PMO.*

## ***Summary:***

### **Release 1.9.2.3100:**

The deployment of Production build 1.9.2.3100 occurred on September 30, 2010. This build was focused on resolving issues and providing enhancements for the Sunset Final Release. Additionally, this build resolved a total of nineteen (19) software Program Tracking Reports (PTRs). Fixes and enhancements to the Package Creation Tool XML Metadata Editor; Code of Federal Regulations (CFR) processor crashes when no granules are created by the parser; corrupt fdsys.xml files associated with the GPO Package Creation; and handling Documentum exception issues which result in log file overflow; are just a few of the features that were included in the Release.

### **Release 1.9.1.397:**

The deployment of Production build 1.9.1.397 occurred September 2, 2010. This was the Sunset Release 1 build that included both enhancements and bug fixes. This build resolved a total of seventy-two (72) PTR fixes, many of which were related to/found during User Acceptance Testing (UAT). Other fixes for parser issues, XME Metadata Editing, and Documentum processing occurred in this Release.

### **Release 1.9.0.395:**

The deployment of Production build 1.9.0.395 originally occurred July 28, 2010, and was reported on in the twelfth IV&V Quarterly Report. From that initial deployment, a number of updates were made to that same build occurring from August 5, 2010 and ending on August 28, 2010. These updates did not affect, i.e., did not change the actual Release Number.

- August 28, 2010: Work on the FAST search engine occurred. A new partition was added to the FAST indexes to allow for Code of Federal Regulations (CFR) data.
- August 13, 2010: An issue with the RAC node reboot needed to be resolved. This was a planned build and was included in the August 28, 2010 Release. Additionally, an Oracle CRS patch was included in the Release.
- August 5, 2010: FAST Index issues persisted (i.e., the FAST index had to be resized in an earlier deployment). For this occurrence the FAST index transform failed for large packages which also required copying java libraries.

### **PMO Completion Plan**

In late March 2010, the PMO produced an FDsys Release 1 Completion Plan (*reference a*). The Release 1 Completion Plan, referred to hereafter as the ***Plan*** is a schedule of activities

and tasks that need to be accomplished in order to sunset GPO Access and institute FDsys as GPO's official system of record. During the second quarter of 2010, this Plan was updated to include the major tasks required to finish Release 1 by the end of FY 2010. Additionally, the PMO has maintained and updated the status of these tasks on a periodic basis; as evidenced by the updates indicated in the paragraphs below.

According to the October 1, 2010 version of the Plan, the PMO has completed the deployment of six (6) post-Release 1 production builds. These builds have completed the migration of data from the existing GPO Access system to FDsys, and have implemented the resolutions to two-hundred-eighty-one (281) software Program Tracking Reports (PTRs). According to the October 7, 2010 Plan, the tasks required to implement the Continuity of Access (COA) capability, a critical step in the transition from GPO Access to FDsys as the "system of record", have been completed. The October 19, 2010 Plan has removed all activities and tasks related to design, development, and testing of the COA instance.

As of September 30, 2010, the Plan indicated that Release 1 Completion stood at 70%; meaning the FDsys Program did not meet their goal of a September 30, 2010 FDsys Release 1 deployment; resulting in shutdown of GPO Access as the system of record. However, the Plan was updated on October 7, 2010 and now indicates that the final scheduled deployment for Release 1, i.e., the Final Sunset Release, was completed at the end of September as scheduled and that Release 1 completion stands at eighty-eight percent (88%) complete with a finish date scheduled for November 12, 2010. Note that this Plan has since been modified as of October 21, 2010 and shows Release 1 completion at eighty-two percent (82%) with a December 23, 2010 finish date.

According to the Plan, some significant non-development efforts remain that must still be accomplished in order to shutdown GPO Access and have FDsys become the official system of record. These activities include the following:

- Completion of Testing (including Performance and Capacity)
- Transition to Support Documentation and Activities (including conduct of Training and User Manual Updates), and
- Preparation for GPO Access Shutdown (including final Authority to Operate (ATO)).

### **Key IV&V Efforts:**

IV&V met with the FDsys PMO on August 24, 2010 to discuss open OIG recommendations from IV&V Quarterly Reports. The focus of the meeting was to discuss the objective evidence required for closing open OIG recommendations.

## **1. Technical Risks Identified**

Since April 2010, the PMO has concentrated its efforts on the deployment of the FDsys Releases summarized above and the performance of tasks that are required for Release 1

completion. That effort has continued as the FDsys Program moved into the fourth quarter of Fiscal Year 2010.

IV&V has not identified any new technical risks; however, there are several issues worth noting as the PMO implements the remaining efforts to complete Release 1.

- As of the date of this IV&V Quarterly Report, the GPO continues to operate and maintain two (2) systems. The FDsys is still a beta system and GPO Access continues to be the official system of record.
- According to the Plan (dated October 7, 2010), the Program Management Office (PMO) met their final scheduled deployment of Release 1 (i.e., the Final Sunset Release was deployed to the Production system). However, this deployment does not complete Release 1, i.e., GPO Access has not been sunsetted and FDsys is still not the official system of record.
- The Plan (dated October 7, 2010) continues to show inconsistencies in the status of tasks/activities that remain to be performed. For example, the Plan shows that the task, Testing Closeout, has an actual Finish Date of September 30, 2010 yet also indicates that these activities are less than one hundred percent (100%) complete (actually seventy percent (70%)). The Plan shows an activity as completed (by virtue of the Finish Date) yet still shows the task as less than one hundred percent (100%) complete. These dates should be modified so the schedule accurately reflects both the delay and the new Finish Dates.
- The Plan (dated October 7, 2010) shows that the Finish Date for Release 1 Completion has been modified from its previously reported September 30, 2010 date to November 12, 2010 and reports that the tasks and activities required for sunsetting GPO Access are eighty-eight percent (88%) complete. The PMO has since updated that Plan and the new Plan (dated October 19, 2010) modifies the Finish Date for Release 1 Completion from November 12, 2010 to December 23, 2010. The Plan also drops the percentage complete down to eighty-two percent (82%). This 82% remained unchanged in the Plan dated October 21, 2010.
- The detailed schedule and content information for FDsys Release 2, targeted for development in Fiscal Year 2011, have not been established.
- A continuing concern for the FDsys Program is the quality of the deployed system. While the testing effort has gotten much better and more rigorous, the test team continues to identify numerous software problems prior to deployment of major production builds. These problems, documented as PTRs describe errors/deficiencies in system operation and/or failures to meet expected performance. As of October 1, 2010, nearly six-hundred (600) PTRs created since the initial beta deployment of Release 1 (in March 2009) remain open and unresolved. The on-going need to address (i.e., close) these PTRs consumes Program resources and reduces the PMO's ability to develop and deploy new functionality.
- Based on the most recent FDsys Master Requirements List (dated September 29, 2010), fifty-two (52) system requirements (i.e., RDs) that are "Not Implemented"

have been assigned the status “Need for Release 1 Completion”. Five (5) of the 52 RDs have associated PTRs and these five (5) RDs appear to have been implemented by virtue of the fact that their associated PTRs have been resolved.

- The other forty-seven (47) RDs that are “Not Implemented” with a status of “Need for Release 1 Completion” have not been assigned to PTRs. Since the Release 1 Completion Plan does not contain a specific task to resolve them, it is unknown if their fixes have already been or will be implemented in the Release 1 timeframe.
- A few risks are now being tracked by the FDsys Risk Review Board (RRB) related to the Continuity of Access (COA) instance.
  - Risk RXXZ (not yet approved by the RRB): COA, a pre-requisite for transitioning from GPO Access to FDsys, still uses the Automated PDF Signing System (APS) which is located at GPO Main versus at the Alternate Computing Facility (ACF). If GPO Main is impacted by a disaster or other event and the APS is affected, the digital signing capabilities become disabled.
  - Risk RXXX (not yet approved by the RRB): The COA has experienced end-user performance issues and the Production to COA replication has been slow at times. If the root cause of this issue cannot be found and a fix implemented, the result according to the risk is that the COA would be unable to support end-users when FDsys becomes the system of record and replication processes may be delayed.
  - Risk R123: This risk is related to Performance Testing and the lack of experienced testers to validate the level of performance required for the Production FDsys. When FDsys becomes the system of record, the lack of performance testing could expose a system that lacks the ability to handle the significant increases in the amount of traffic. This risk is being mitigated and includes steps to hire performance test resources and to re-test both the COA and COOP. The COA is being re-tested due to a configuration issue.
- As reported in the IV&V twelfth Quarterly Report, to-date, the PMO has made substantial progress towards the completion of Release 1; however, if the final scheduled tasks identify problems (i.e., PTRs) that must be corrected immediately, the implementation of the required fixes may jeopardize the completion of Release 1 activities and tasks that are required to sunset GPO Access in the December 2010 timeframe.

## **2. Schedule Risks Identified**

For this reporting period, no new schedule risks have been identified.

## **3. Cost Risks Identified**

IV&V identified no new cost risks during this reporting period.

## **4. Recommendations**

This Quarterly Report does not contain new recommendations. The issues and concerns discussed herein are already encompassed by open recommendations provided to the PMO via previous IV&V Quarterly Reports.

## **Appendix A. Report Distribution**

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Deputy Public Printer  
Acting Chief Management Officer  
Chief Acquisition Officer  
Chief Information Officer  
Chief Technology Officer