



February 22, 2007

WALTER F. O'TORMEY
VICE PRESIDENT, ENGINEERING

SUBJECT: Audit Report – Management of the Flats Recognition Improvement Program (Report Number DA-AR-07-002(R))

This report presents the results of our self-initiated audit of management of the Flats Recognition Improvement Program (FRIP) (Project Number 06XG002DA000). Our objectives were to determine whether the FRIP program met U.S. Postal Service requirements in a timely and effective manner and whether contract activities supported program requirements and were conducted according to Postal Service policies and procedures. On January 24, 2006, we reported on our review of contract activities in an interim audit report. (See Prior Audit Coverage.)

Background

The Postal Service's Board of Governors approved an initial FRIP Phase 1 Decision Analysis Report (DAR) authorizing \$111 million to enhance address recognition technology used in flat mail automation equipment. In May 2003, a contract for \$89 million was awarded to Siemens Dematic with incentives to improve optical character reader (OCR) acceptance rates and reduce OCR error rates on all automated flat sorting machine (AFSM) 100 and upgraded flat sorting machine (UFSM) 1000 equipment.¹ Management began FRIP Phase 1 deployment in November 2004 and completed it in December 2005.

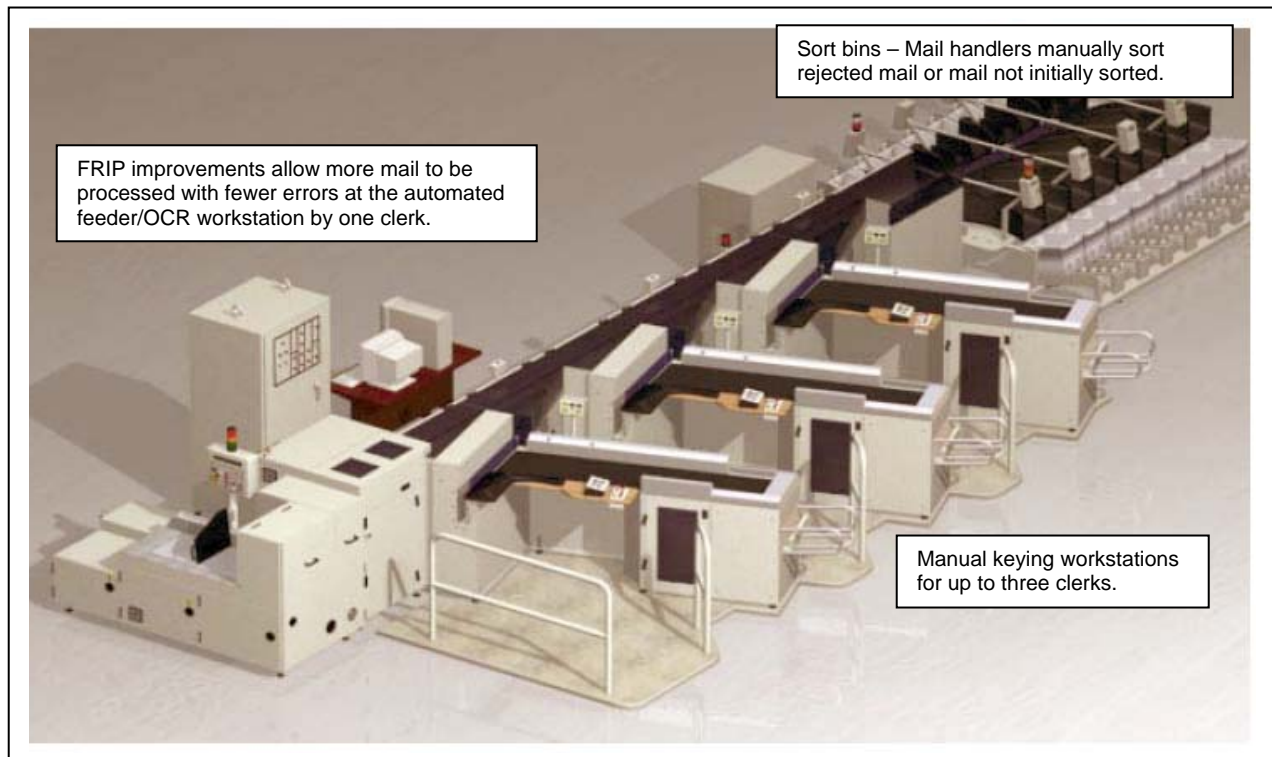
In June 2005, the Board of Governors approved a second DAR, FRIP Phase 2, authorizing \$113 million for continued enhancement of address recognition technology. Subsequently, the Postal Service awarded Siemens Dematic a second incentive contract of \$60.7 million under the Phase 2 DAR to further improve OCR performance on both flats sorting equipment. Deployment of the first release for this phase is planned for November 2006.

¹ The AFSM 100 is the latest technology for processing the majority of standard flat mail. The UFSM 1000 is older technology that processes nonstandard flat mail and newspapers.

The primary benefit expected from a FRIP upgrade on the AFSM 100 is higher OCR acceptance rates to reduce keying workhours at remote encoding centers (RECs). The plant sends non-readable mailpiece images from flat mail operations electronically to REC sites for address keying. Once an individual completes address keying, the corrected image is sent back to the AFSM 100 at the plant to complete mail processing.

The main benefit expected from the FRIP upgrade to the UFSM 1000 is higher OCR acceptance rates, which should reduce manual keying workhours and manual flat sorting. Figure 1 highlights the processing areas expected to be impacted by FRIP.

Figure 1. UFSM 1000



Objective, Scope, and Methodology

The objective of this audit was to determine if the FRIP program met requirements in a timely and effective manner.

To accomplish our objective, we reviewed test reports, invoices, contract correspondence, New Equipment Reporting System (NERS) utilization reports for the UFSM 1000 and Web Enterprise Information System data concerning manual workhours and flat mail volume before and after the FRIP deployment in November 2004. We also interviewed the Postal Service Headquarters processing operations manager, engineering automation equipment manager, FRIP program manager, FRIP purchasing specialist, and nine area coordinators.

We reviewed FRIP performance and system benefits requirements based on the results of lab environment testing and a before-and-after analysis of AFSM 100 and UFSM 1000 productivity. We reviewed REC site workhours, manual processing workhours, UFSM productivity rates, and flat mail volume. To perform this assessment, we used data from the Postal Service Management Operating Data System (MODS) for fiscal years (FY) 2004 and 2005 and October through February of FY 2006.

We conducted this audit from February 2006 through January 2007 in accordance with generally accepted government auditing standards and included such tests of internal controls as we considered necessary under the circumstances. We reviewed policies and procedures for internal controls and discussed our observations and conclusions with management officials and included their comments where appropriate. We relied on computer-processed data maintained by Postal Service operations and discussed data sources with Postal Service management. We did not test the validity of controls of systems. However, we performed a preliminary assessment and concluded the data used was sufficiently reliable to answer the audit objectives.

Prior Audit Coverage

Our audit report titled *Flat Recognition Improvement Program* (Report Number DA-AR-06-002, dated January 25, 2006) concluded that contract activities supported program requirements and were generally conducted in accordance with Postal Service policies and procedures.² For example, the noncompetitive justification, best value

² To determine whether contract activities supported program requirements and were conducted according to Postal Service policies and procedures, we reviewed the Phase 1 DAR, the initial FRIP contract and associated modifications, price negotiation memorandums, and criteria in the Postal Service's *Purchasing Manual*, Issue 2, dated January 31, 2002. In addition, we reviewed test reports, incentive-earned computations, invoices, and contract correspondence. We also interviewed the FRIP program manager, the contracting officer, and other key program and supply management personnel. Further, we performed an analysis of Postal Service contract payments to determine whether payment amounts and dates met contract requirements. To perform the analysis, we used computer-processed data from the Accounts Payable Accounting and Reporting System (APARS). For the period reviewed, we compared invoice numbers, dates, and amounts with APARS payment data.

determination, and price negotiation memorandum were prepared and properly approved. We also noted the Postal Service did not pay any invoices prior to receiving goods and services and certifying the invoices for payment. However, the Postal Service received and held several invoices that should have been rejected as improper and authorized deviations from the original contract terms and conditions for billing and payment. Therefore, we made recommendations to improve FRIP incentive payment procedures. The Postal Service agreed with our recommendations and has actions underway that should correct the issues identified.

Our review of contract activities was limited to the Phase 1 contract awarded to Siemens on May 15, 2003, and included payments through May 2005 and contract actions up to and including Modification 3, signed September 28, 2005 and effective as of August 12, 2005.

Results

The FRIP program exceeded the December 2004 deployment completion timeframe required in the Phase 1 DAR and generally met performance requirements in the laboratory environment. While FRIP upgrades to the AFSM 100 operations coincided with REC workhour reductions as expected, anticipated reductions in manual sorting and keying workhours were not evident from upgrades to the UFSM 1000. This was attributed to operational decisions to migrate flat mail processing to the AFSM 100 operation. Thus, we concluded that the FRIP program contributed high value to AFSM 100 operations which handles over 80 percent of flat volumes but did not clearly demonstrate value to UFSM 1000 operations. As such, we will report \$21,367,952 of questioned costs associated with upgrading UFSM 1000 equipment in our *Semiannual Report to Congress*.

FRIP Program Exceeded Timeframes

The FRIP program did not meet Postal Service requirements in a timely manner, as originally outlined in the Phase 1 DAR. Postal Service management reported, in the *Investment Highlights Report* to the Board of Governors, the program was behind the DAR schedule because the contractor was unable to meet the statement of work requirements for recognition improvement software. Software must meet or exceed contractual performance requirements before the Postal Service accepts and deploys FRIP software releases from the contractor. Under the incentive contract terms, payments depended on the contractor demonstrating improvements in OCR recognition rates and reducing error rates. In this case, schedule delays should have a marginal financial impact on planned savings and there is little risk of prematurely paying the vendor for late deliverables. Therefore, we are not making any recommendations.

FRIP Upgrades Effective in Lab Environment

Before deploying FRIP releases to postal facilities, the Postal Service validated FRIP software performance and established the payment amount to the vendor by testing the software in a laboratory environment. Overall, the FRIP software upgrade was effective in meeting Postal Service performance requirements in the AFSM 100 and UFSM 1000 laboratory testing environment.

The DAR describes minimum target percentage levels for OCR and error rate improvements for the lab environment. The cumulative results of the software releases should meet or exceed improvements in the target OCR read or error rate, as described in the DAR.

Target percentage levels for the AFSM are a 3 percentage point increase in the OCR acceptance rate and a 1 percentage point reduction in the OCR error rate. Respectively, the target percentage levels for the UFSM are a 4.5 percentage point increase and a 1.5 percentage point reduction.

Our review showed that the cumulative results of the software releases for the FRIP upgrades to the AFSM 100 and UFSM 1000 equipment exceeded the minimum target percentage levels and, therefore, met DAR performance requirements. Specifically, for the AFSM 100, the acceptance rate increase was 3.58 and the error rate reduction was 1.05. Likewise, for the UFSM 1000, the acceptance rate increase was 6.61 and the error rate reduction was 1.6. We note that management's success can be attributed to its process for software testing.³

Successfully passing program performance requirements in a laboratory environment helps the Postal Service determine whether it can achieve system benefits in an operational setting. Since laboratory results were successful and the software passed the Postal Service software testing process, we are not making any recommendations.

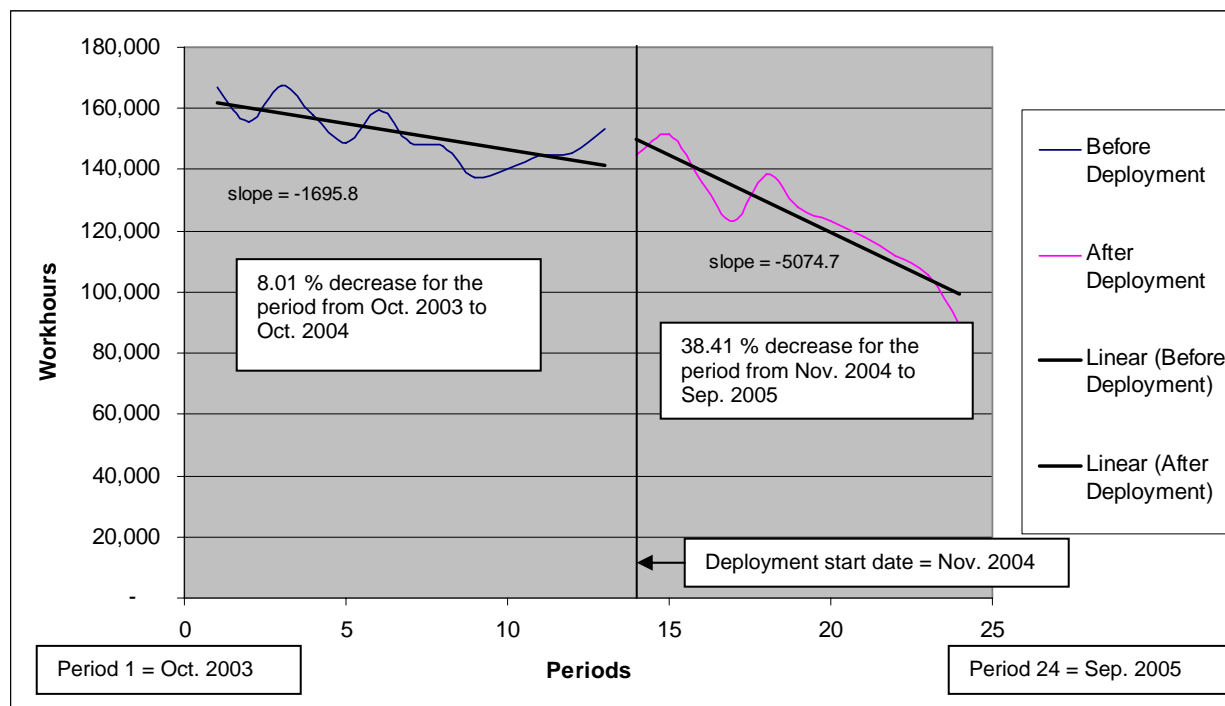
³ The OCR acceptance rate increase and error rate reduction are determined by the results of an image injection test. The image injection test is performed by establishing a test deck of approximately 300,000 images from sites around the country, especially from sites having recognition problems. The test deck is injected into a simulator to establish a baseline using the latest revision of software currently used in the field. After the baseline has been established, the new software is installed on the simulator and the test deck is rerun. When the percentage has been established using the image injection test, the contractor moves to the alpha, pre-beta, and beta stages of the software testing process. The images are collected from a broad distribution of Postal Service processing facilities. A variety of mail sources are used, including First-Class and Standard Mail using incoming and outgoing operation types. Images are collected randomly from flat sorters at each visited site. The pool of randomly collected images is based on sites' volume availability.

FRIP Upgrades to AFSM 100 Coincide with System Benefit

We found the FRIP upgrade on the AFSM 100 coincided with the primary expected system benefit. According to the DAR, expected system benefits for FRIP upgrades to the AFSM 100 require higher acceptance rates to reduce keying workhours at REC sites where rejected flat mail address images were sent for processing. We reviewed FYs 2004 and 2005 data from MODS for 13 out of 15 REC sites to determine whether recognition improvement software reduced workhours. The analyses revealed a decline in REC workhours, as shown in Chart 1 below.

While the workhour trend declined as expected, we noted that other AFSM 100 system enhancements were also in place and could have contributed to these declines.⁴ Nevertheless, because REC workhour declines were more pointed after FRIP deployment, we concluded the Postal Service achieved expected system benefits and the program contributed high value to AFSM 100 operations that handles over 80 percent of flat volumes. Therefore, we are not making any recommendations.

Chart 1. National REC Workhours



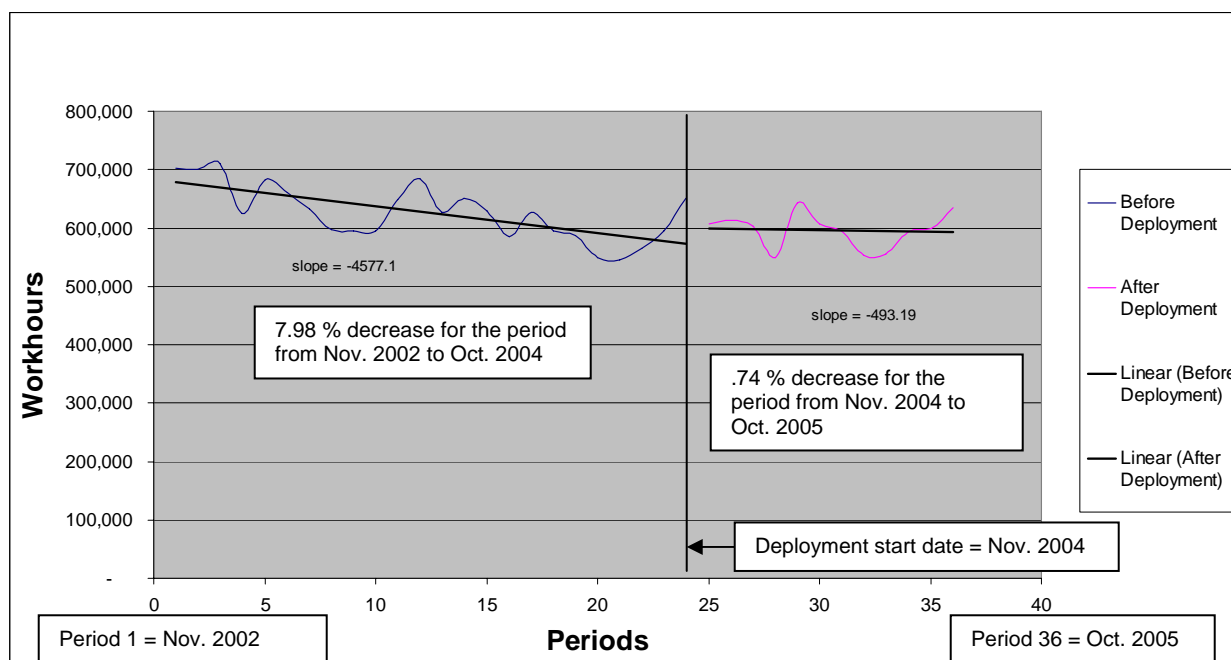
⁴ Other AFSM 100 enhancements included the Flat Identification Code Sort Program.

System Benefits Not Evident for FRIP Upgrades to UFSM 1000

According to the DAR, the primary system benefits from FRIP upgrades to the UFSM 100 were higher OCR acceptance rates to reduce manual sorting and keying workhours at processing facilities, since fewer OCR rejects will be sorted manually or keyed.

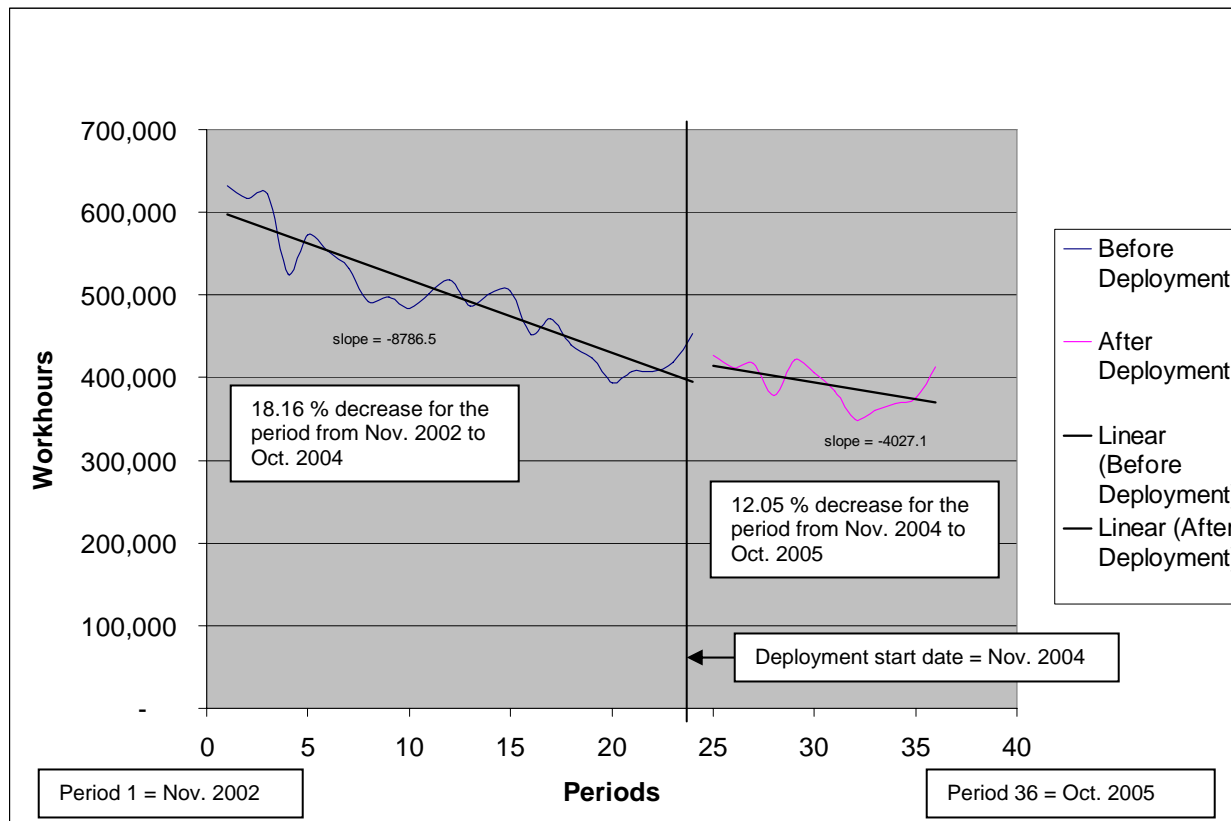
Our analysis showed system benefits were not evident for these upgrades. We reviewed UFSM 1000 operations for a 2-year period from November 2002 to October 2004 before FRIP deployment in November 2004; and a 1-year period during and after deployment from November 2004 to October 2005. Chart 2 shows that before FRIP deployment, manual sorting workhours were declining by 7.98 percent. Conversely, after deployment, manual sorting workhour reductions (.74 percent) leveled off.

Chart 2. National Flats Manual Sorting Workhours



In addition, Chart 3 shows that before FRIP deployment, manual keying workhours were declining by 18.16 percent. However, after deployment, reductions in manual keying workhours (12.05 percent) were less significant. These manual keying hours are directly attributable to UFSM 1000 operations at plants.

Chart 3. National Flats Manual Keying Workhours



The declines in manual sorting and manual keying workhours shown above may be partially attributed to operational decisions for UFSM 1000 operations. Some area offices in coordination with headquarters were reducing the number of UFSM 1000 machines to migrate comparable amounts of flat mail to the AFSM 100.⁵ Specifically, our survey responses from area coordinators revealed: (See Appendix A.)

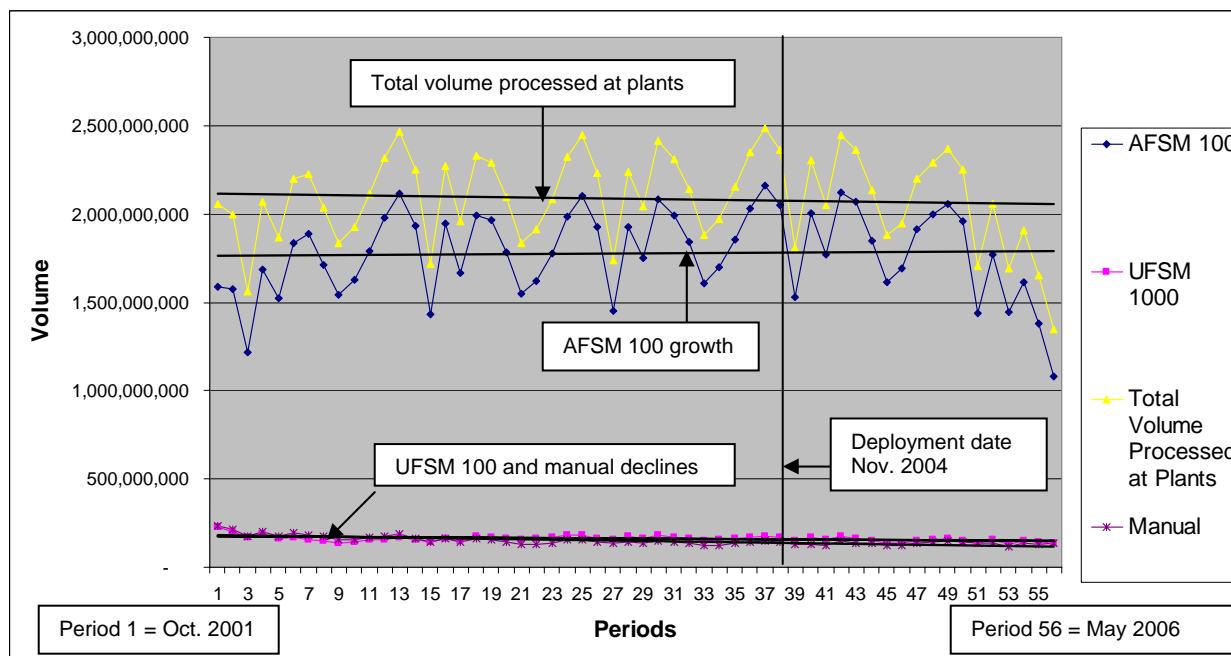
- Five of nine area offices currently have initiatives to reduce the number of UFSM 1000s at larger postal processing centers to send more mail to the AFSM 100 or to move UFSM 1000s to smaller sites.
- UFSM 1000 equipment in larger postal facilities was primarily used to back up AFSM 100 operations.

These initiatives decreased the use of UFSM 1000 equipment in larger postal facilities and may have influenced workhour trends for manual sorting and manual keying workhours.

⁵ The AFSM 100 is the Postal Service's most capable and efficient flat mail sorting machine.

To corroborate area office responses, we reviewed historical flat volumes and UFSM utilization reports. As depicted in Chart 4, responses from sites are in line with historical volume shifts. Overall, AFSM 100 volumes increased while UFSM 1000 and manual volume decreased during the same period.

Chart 4. Flat Volume Trends



Likewise, UFSM 1000 utilization reports showed the number of machines in operation has decreased from the 340 machines as of November 2004 to 315 machines as of December 2005.⁶ Based on already declining workhours for both the manual keying and manual sorting before the FRIP software release and reduction of machines from production, we believe that targeted workhour declines are due to local sites' operational decisions more than the performance of FRIP.

Further, we were unable to obtain from Postal Service sufficient support for FRIP improvements to UFSM 1000 operations at field sites. Unlike Phase 1, we noted that in the DAR for FRIP Phase 2, the Postal Service called for metrics to measure performance in the field environment. During our audit, Postal Service management indicated that plans are in place to measure performance after the first release of FRIP Phase 2 software.

⁶ The FRIP enhancement was planned for 350 UFSM 1000 machines; however, 10 machines were not upgraded with OCRs and automatic feeders and, therefore, could not receive recognition improvement.

In summary, we noted no clear evidence of FRIP meeting Phase 1 performance expectations for the UFSM 1000. In addition, in coordination with headquarters, some area offices have varied localized UFSM 1000 operational strategies that would influence expected system benefits. Further, operational performance of FRIP has not been measured. Therefore, we question \$21,367,952 paid to date (Appendix B) because FRIP Phase 1 improvements on the UFSM 1000 have not demonstrated value and remain unsupported. The contracted amount for FRIP Phase 2 is valued at \$10.5 million and the expected first release is scheduled for November 2006.

Recommendations

We recommend the Vice President, Engineering, in coordination with the Vice President, Network Operations:

1. Reevaluate the need for further Flats Recognition Improvement Program software enhancements within the scope of upgraded flat sorting machine 1000 operational strategies.

We recommend the Vice President, Engineering, in coordination with Vice President, Supply Management:

2. Evaluate the Flats Recognition Improvement Program Phase 2 after the first deliverable and modify the contract accordingly based on upgraded flat sorting machine 1000 need and field performance.

Management's Comments

Management disagreed with the \$21,367,952 in questioned costs but agreed with both recommendations.

Management stated the audit did not analyze the operation to support the questioned costs and assumed that because the decrease in manual sorting and keying work hours flattened, that the entire improvement was questionable. In particular, management stated the audit did not take into account operational changes over the period measured, such as moving mail from the UFSM 1000 to the AFSM 100, the re-deployment of UFSM 1000s to smaller facilities, and the decrease in manual mail volume at UFSM 1000 only sites. Management indicated that their analysis of manual mail volumes at sites with UFSM 1000s showed a 12 percent decrease in manual mail volume.

With regard to the recommendations, management plans to analyze the need for another UFSM 1000 release and expects a decision in March 2007. Management stated this analysis will consider the value of future releases, with adjustments to the cost models as appropriate. Management noted they would enter into discussions with



the supplier, as appropriate, and planned to complete actions by April 2007. Management's comments, in their entirety, are included in Appendix B.

Evaluation of Management's Comments

Regarding management's disagreement with the report's monetary impact, we acknowledge the operational benefit of moving mail from the UFSM 1000 to the AFSM 100, the re-deployment of UFSM 1000s to smaller facilities, and the decrease in manual mail volume at UFSM 1000 only sites. However, while the benefits highlighted by management improve operations, these benefits cannot be solely attributed to FRIP upgrades. For example, manual mail volume declines at UFSM 1000 only sites could correlate to general volume declines or the mere introduction of automated equipment in a non-automated environment. In addition, management did not present specific information from a field site or machine level to indicate how their assertions would affect our calculations. Therefore, we continue to believe our reported finding and associated monetary impact are fair and reasonable. We consider management's actions, taken or planned, responsive to the issues identified in this report and to our recommendations, and do not plan to pursue management's disagreement through the formal audit resolution process.

The OIG considers recommendations 1 and 2 significant, and therefore requires OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions are completed. These recommendations should not be closed in the follow-up tracking system until the OIG provides written confirmation the recommendations can be closed.

We appreciate the cooperation and courtesies provided by your staff during our review. If you have any questions or need additional information, please contact Miguel A. Castillo, Director, Engineering, or me at (703) 248-2100.

E-Signed by Colleen McAntee 
VERIFY authenticity with Approve!


Colleen A. McAntee
Deputy Assistant Inspector General
for Core Operations

Attachments

cc: Tony Pajunas
Susan M. Brownell
Steven R. Phelps

APPENDIX A. SURVEY OF POSTAL SERVICE AREAS

Area Office	UFSM Initiative	Description
Capital Metro	Yes	Capital Metro Area found it more economically feasible to eliminate the UFSM 1000 (reducing the number of UFSM machines from 14 initially deployed to one machine) and manually process any flat mail that could not be run on the AFSM 100. This effectively increased manual sorting workhours and decreased keying workhours.
Eastern	Yes	Eastern Area found it more economically feasible to reduce the number of UFSM 1000s (reducing the number of UFSM machines from 67 initially deployed to 38) and to process more mail on the AFSM 100.
Northeastern	Yes	Northeastern Area found it more economically feasible to move UFSM 1000s to smaller sites and process more mail on the AFSM 100.
Pacific	Yes	Pacific Area found it more economically feasible to move UFSM 1000s to smaller sites and process more mail on the AFSM 100.
Western	Yes	Western Area found it more economically feasible to move UFSM 1000s to smaller sites and process more mail on the AFSM 100.
Southeastern	Yes	Southeastern Area found it advantageous to acquire more UFSM 1000s (they increased the number of UFSM machines from 43 initially deployed to 51) to process manual flat mail diverted to local offices.
Great Lakes	No	
Southwestern	No	
New York Metro	No	

APPENDIX B. QUESTIONED COSTS

<i>Invoice Payment Date</i>	<i>Paid Amount</i>	<i>Description</i>
09/23/04	\$15,752,713	UFSM 6.03 improvements
10/28/04	829,090	UFSM 6.03 soft deliverables
12/21/05	4,020,502	6.03 payment
02/16/06	765,647	6.0 Clean-up invoice
Total	\$21,367,952	

Note: Questioned costs are costs believed to be unnecessary, unreasonable, unsupported, or an alleged violation of law, regulation, contract, etc. Questioned costs may be claimed as a “one-time” benefit or as a cumulative benefit over the entire period of recovery of the costs, as appropriate, and can include project-related recoveries and other amounts that can be tracked, based on implementation of OIG recommendations.

APPENDIX B. MANAGEMENT'S COMMENTS

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WALTER O'TORMEY
VICE PRESIDENT
ENGINEERING



December 22, 2006

COLLEEN A. MCANTEE

SUBJECT: Draft Audit Report – Flat Recognition Improvements Program (Report Number DA-AR-07-DRAFT)

Management reviewed the Flat Recognition Improvements Program (FRIP) draft audit report. As the report highlights, these software improvements have increased the effectiveness of our Flat Mail Optical Character Reader Systems. The following is management's response to content of the report and the recommendations addressed to Engineering.

COMMENTS ON OIG REPORT FINDINGS

System Benefits Not evident for FRIP Upgrades to UFSM 1000

Management disagrees with the \$21,367,952 in questioned cost. The audit does not analyze the operation to support the questioned costs. Rather, it assumes that because the decrease in manual sorting and keying work hours flattens out, the entire improvement was not necessary and questionable. While it acknowledges that the release improved the accept 6.61 percent and reduced the error rate 1.6 percent, it neglects to take into account operational changes that took place over that period. In particular, the audit did not analyze and include the impact of moving the mail from the UFSM-1000 to the AFSM-100 and the increase in operational savings. Moreover, the change permitted operations to move the UFSM-1000s out of the plants to smaller facilities where mail moved from manual to semi-automated. Without these improvements, we believe that the savings are achieved and the investment provided value in accordance with the Decision Analysis Report

The data used in the report uses nationwide volumes at all flat mail sites. A better indicator of the impact is the manual mail volumes at just the sites with UFSMs. When we compared FY 2005 volumes to 2006 we found that there was a 12 percent decrease in manual mail volume. This equates to almost 300 million less pieces processed manually.

RESPONSES TO OIG REPORT RECOMMENDATIONS

We recommend that the Vice President, Engineering, in coordination with the Vice President, Network Operations:

1. *Reevaluate the need for further Flats Recognition Improvement Program software enhancements within the scope of the upgraded flat sorting machine 1000 operational strategies.*

Management Response: Management agrees with this recommendation. The need and value for another UFSM-1000 release is being analyzed and the decision is expected in March 2007.

8403 LEE HIGHWAY
MERRIFIELD VA 22082-8101
703-280-7001

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We recommend that the Vice President, Engineering in coordination with the Vice President of Supply Management:

2. Evaluate the Flats Recognition Improvement Program Phase 2 after the first deliverable and modify the contract accordingly based on the upgraded flat sorting 1000 need and field performance.

Management Response: Management agrees with this recommendation. The value of future releases is part of the analysis due in March 2007. The cost models will be adjusted accordingly and the next step will be to enter into discussions with the supplier to modify the contract. Planned completion is April 2007.

We appreciate the cooperation and input from your staff during the audit. Please contact Mr. John Keegan, Manager, Automation Equipment, at 703-280-7230, if you have any concerns or questions regarding this response.


Walter O'Tormey

Attachment

cc: Mr. Galligan
Mr. Pajunas
Mr. Phelps
Ms. Brownell