VA Office of Inspector General

OFFICE OF AUDITS & EVALUATIONS

Department of Veterans Affairs

System Development Life Cycle Process

September 30, 2009
09-01239-232

ACRONYMS AND ABBREVIATIONS

AS/IT	Assistant Secretary Information and Technology
ESR	Enrollment System Redesign
GAO	Government Accountability Office
HDR	Health Data Repository
ITLB	Information Technology Leadership Board
ITRM	Information Technology Resource Management
OE/SPP&P	Office of IT Enterprise Strategy, Policy, Plans and Programs
OI&T	Office of Information and Technology
OMB	Office of Management and Budget
PM	Program Manager
PRE	Pharmacy Reengineering Program
SDLC	System Development Life Cycle
T21	Technology in the 21st Century
TSPR	Technical Service Project Repository

TABLE OF CONTENTS

Report Highlights: Audit of VA's System Development Life Cycle Process

Why We Did This Audit

VA needs to manage major IT investments, valued at over $3.4 billion, in a disciplined and consistent manner while delivering the intended investment results. The System Development Life Cycle (SDLC) identifies the process and tasks that must be completed to produce and maintain an IT investment throughout its life cycle. Without an effective SDLC process, VA's IT investments are at risk of cost overruns, schedule slippage, and performance problems. Further, VA will lack assurance that its major IT investments are contributing to VA's mission. This audit evaluated how well OI&T used the SDLC process to manage VA's major IT investments.

What We Found

Although VA's SDLC guide is adequate, OI&T needed to communicate and enforce VA's SDLC guidance to ensure VA's major IT investments are effectively managed using the SDLC process. Further, OI&T did not adequately monitor VA's IT investments. These conditions occurred because OI&T never fully centralized its IT management functions as they related to the SDLC process. As a result, OI&T could not ensure VA's IT investments were managed effectively and efficiently, leaving VA's $3.4 billion IT investments at risk. In conclusion, OI&T management control deficiencies increased the risks that IT investments could experience cost and schedule overruns, which could ultimately lead to other costly, unproductive, or failed programs and projects. Based on its separate assessment, OI&T has temporarily halted 45 of VA's developmental project for further review.

What We Recommended

OI&T needs to establish and implement policies, procedures, and management controls to ensure centralized management of VA's IT investments. These actions are needed to improve the risk management control and corporate governance of major IT investments.

Agency Comments

The Assistant Secretary for Information and Technology agreed with our findings and recommendations and has provided acceptable implementation plans. We will follow up until proposed actions have been completed. See Appendix C for the full text of management's comments.

(original signed by:)

BELINDA J. FINN
Assistant Inspector General
for Audits and Evaluations

INTRODUCTION

Objective

The audit objectives were to determine whether VA's System Development Life Cycle (SDLC) policies and procedures adequately address Federal requirements and information technology (IT) best practices governing the SDLC process and to determine the effectiveness of the Office of Information and Technology's (OI&T) implementation of VA's SDLC process. Appendix A describes the scope and methodology we used to address the audit objectives.

SDLC Program Management

Major IT investments, as defined by *OMB Circular No. A-11, Planning, Budgeting, Acquisition, and Management of Capital Assets, Part 7* (June 2008), are acquisitions that require special management attention because of their importance to the mission or function of the agency. Acquisitions with high development, operating or maintenance costs, or high visibility are also considered major IT investments. Furthermore, IT acquisitions for financial management that obligate more than $500,000 annually are considered major IT investments. Investments not falling within these parameters are considered non-major IT investments.

The *One VA IT Program Management Guide* (October 2008) states that the SDLC framework is the model VA uses to manage a major IT investment throughout its life cycle. Within OI&T, the Office of IT Enterprise Strategy, Policy, Plans and Programs (OE/SPP&P) is responsible for monitoring compliance with cost, schedule, and performance goals for major IT initiatives. Accordingly, OE/SPP&P conducts milestone reviews, which provide a basis for comprehensive management, progressive decision making, and authorization of funding for each phase of the SDLC framework. Each succeeding milestone builds on the information provided in the previous milestone. By monitoring and measuring progress on a regular basis at each milestone, program managers can identify variances and take appropriate corrective action. Appendix B provides background information on VA's SDLC process.

RESULTS AND RECOMMENDATIONS

Finding

OI&T Has Not Adequately Implemented Management Controls to Ensure Centralized Management of VA's IT Investments

In general, VA's SDLC process outlined in the *One VA IT Program Management Guide* is adequate and comparable to Federal standards and information technology (IT) best practices; however, the Office of Information and Technology (OI&T) did not communicate, comply with, or enforce the mandatory requirements included in the guide. Moreover, OI&T did not ensure management controls were implemented to effectively manage or perform adequate monitoring of VA's IT investments. Management lapses over VA's IT investments occurred because OI&T did not fully centralize IT management functions by not assessing and monitoring VA's programs and projects and effectively communicating the SDLC management requirements. As a result, OI&T did not accomplish an assessment in 2006, after initial centralization, or conduct adequate ongoing assessments of VA's IT investment portfolio. Specifically, OI&T did not:

- Develop a directive to communicate and enforce the *One VA IT Program Management Guide*.

- Ensure effective monitoring, such as adequate or timely reviews of VA's IT investments, was performed for all programs and projects in VA's IT investment portfolio.

As a result, OI&T could not ensure VA's IT investments were managed effectively and efficiently leaving VA's $3.4 billion IT investments at risk. Further, the lack of management controls impacts OI&T's ability to ensure IT investments align with VA's mission and goals and meets users' needs. These deficiencies increased VA's risk of cost and schedule overruns like the Pharmacy Re-engineering (PRE) Program and led to temporarily halting the Replacement Scheduling Application (RSA) program.[1] It is vital that immediate action be taken to implement management controls given that OI&T is responsible for managing VA's $3.4 billion investment portfolio.

[1]According to a March 2009 VA memorandum, RSA lasted over five years costing more than $75 million in 1998 and did not deliver a usable product. In March 2009, the program was suspended.

Directive Not Developed

OI&T did not ensure the development of a directive to communicate and enforce the mandatory procedures incorporated within the *One VA IT Program Management Guide* (October 2008) to manage VA's major IT investments. This occurred because OI&T's focus had been on multi-year programming, and the time needed to develop a new directive was limited.

Also, because *VA Directive 6330, Directives Management* issued in October 1993 and February 2009, identifies program guides as non-directives that are used for informational purposes, OI&T personnel did not view the October 2008 guide as mandatory. Thus, the *One VA IT Program Management Guide* was not effectively communicated or consistently applied throughout OI&T. *GAO's Standards for Internal Control in the Federal Government* (November 1999) states that policies, procedures, techniques, and mechanisms that enforce management's directives are control activities, which help ensure management's directives are carried out. In addition, information should be recorded and communicated to management and others within VA that need it within a time frame that enables them to carry out their internal control and other responsibilities.

In a memorandum dated October 30, 2008, the Assistant Secretary for Information and Technology directed OI&T program managers to apply the *One VA IT Program Management Guide* in the development of all major IT investments. In our discussions with OI&T senior officials they reiterated that all policies, procedures, and guidance within OI&T are mandatory. Yet, the Office of IT Enterprise Strategy, Policy, Plans and Programs (OE/SPP&P) personnel and program managers did not believe that the existing *One VA IT Program Management Guide* was mandatory or the guidance was formal policy. Therefore, we concluded that OI&T had not developed an effective strategy to communicate IT program management guidance, which resulted in inconsistent management, a lack of accountability, and ineffective stewardship over VA's major IT investments.

Because OI&T did not develop the required directive to communicate effectively that the *One VA IT Program Management Guide* was mandatory, OI&T could not ensure the effective and efficient management of VA's IT investments. Without a directive in place, OI&T increased the risk for inconsistent and poor IT investment management and for unsuccessful IT investments. Establishing a directive to enforce existing mandatory guidance would better ensure consistent oversight and provide a disciplined framework for managing VA's IT investments.

Ineffective Monitoring

OI&T did not ensure controls were in place to monitor VA's IT investment portfolio effectively. According to OI&T officials, this occurred because prior to the centralization in 2006, various IT development organizations within VA used different methods to manage IT investments, and OI&T never fully centralized the monitoring process. In addition, OI&T did not maintain a

central data repository to store program documentation, or program artifacts, such as the program management and risk management plans.[2] Further, OI&T did not maintain cumulative cost and schedule data. Consequently, it impacted their ability to monitor programs and projects effectively. *The Clinger-Cohen Act* (February 1996) requires that the Chief Information Officer (CIO) monitor and evaluate the performance of IT investments and advise the head of the agency regarding whether to continue, modify, or terminate an investment. OI&T's inability to effectively monitor programs and projects in VA's IT investment portfolio was shown in the following lapses.

- Untimely reviews of VA's IT investments
- Inadequate milestone reviews
- No central data repository was maintained
- No cumulative cost and schedule documentation

Untimely Reviews of VA's Investments

Since OI&T's centralization in 2006, OI&T has not conducted timely reviews of VA's IT investments. From 2006 to May 2009, OI&T only conducted 20 reviews (7 percent) of an estimated 282 IT investments.[3] Of the 20 reviews conducted, 9 milestone reviews consisted of only the approval of the concept definition requirements for the development of new programs and projects. Milestone reviews are decision points in the life cycle where the status of the program or project is presented to stakeholders and approved or disapproved to move forward to the next phase in the life cycle. However, *VA's Information & Technology Strategic Plan* (FY 2006 to 2011) indicated that 50 percent of VA's major IT projects would undergo oversight (milestone) review by FY 2009. (See Appendix B for an explanation of the milestone review process.)

One of VA's major IT investments, the Pharmacy Re-engineering (PRE) program, has been ongoing since 2002 with no milestone 0 review. The milestone 1 review in 2005 was waived, and the milestone 2 review scheduled for June 2009 was postponed due to OI&T's actions to assess all of VA's programs and projects. As a result, the PRE program has never been formally assessed over the past seven years, yet it experienced significant developmental and contract delays, and problems with cost and schedule. Moreover, subsequent to our review, preliminary OI&T data indicated that the PRE program is more than 13 months behind schedule, approximately

[2]OI&T refers to exit criteria as program artifacts, which is the term used throughout this report. Exit criteria help assess business alignment, data compliance, technical compliance, enterprise architecture alignment, security and privacy compliance, and program management.

[3]Since May 2009, formal milestone reviews have been postponed to conduct assessments of all developmental projects.

$18.6 million (50 percent) over budget, and deficient in staff skills.[4] Finally, OI&T has temporarily halted projects associated with this program because it is either behind schedule or over budget.

OI&T program managers indicated that IT investments identified as steady state are not required to undergo reviews.[5] However, the *One VA IT Program Management Guide* (October 2008) requires reviews be conducted for all IT investments including those in steady state and requires these investments to undergo a milestone 4 review every 3 years. Additionally, *OMB Circular No. A-11, Capital Programming Guide* (June 2006) requires that an agency's focus be placed on analyzing each asset's ability to support the organizational mission, regardless of whether the asset is newly acquired or already operational.

Inadequate Milestone Reviews

The Enrollment System Redesign (ESR) and the Health Data Repository (HDR) programs went through milestone reviews in 2009 with incomplete or missing artifacts. The artifacts were either: (1) not final, such as the service level agreements; (2) not signed by an approving official, such as the acquisition plans; or (3) did not exist, such as compliance certificates. Yet, in spite of the incomplete or missing artifacts, the governance boards approved both programs to progress from one phase to the next. VA's *One VA Program Management Guide* requires successful completion of the exit criteria (artifacts) to progress from one phase to the next.

Subsequent to our audit, OI&T provided preliminary data indicating ESR is more than 13 months behind schedule and deficient in staff skills. This same data also indicated that HDR is more than 16 months behind schedule and an estimated $7.2 million over cost with a projected total overage of $28.3 million. OI&T's data also suggests that HDR is deficient in staff skills. Finally, OI&T has temporarily halted projects associated with both of these programs because they are either over budget or behind schedule.

No Central Data Repository Was Maintained

OI&T did not maintain a central data repository to store program artifacts. This occurred because before centralization in 2006, various IT development organizations within VA used different methods to manage IT investment documentation, and OI&T never formally centralized the process to manage program artifacts after centralization. During our review, we requested access to the program artifacts for the four sampled programs. After repeated requests, we were directed to anywhere from 6 to 18 different websites to

[4]OI&T officials indicated their preliminary data was incomplete and they were undergoing internal quality control reviews to ensure the data is reasonable and accurate.

[5]IT investments defined as steady state systems are an asset or part of an asset that have been delivered and are performing their intended mission and are not considered projects.

retrieve program artifacts and were unable to obtain all the program artifacts related to a particular investment.

Artifacts for each investment are reviewed by the governance boards and required at the completion of a milestone when the milestone review briefing is conducted. Although OI&T made the Technical Service Project Repository (TSPR) available to store artifacts and project information, the use of the repository was not enforced or consistently applied by all OI&T program managers (PMs) as a central repository. In fact, PMs maintained the artifacts on a shared drive, hard drive, or other storage mediums and then uploaded them to SharePoint or TSPR because it was not mandatory to store program artifacts on the TSPR. A central data repository would have ensured that program artifacts were easily and readily accessible for governance board reviews and general oversight.

GAO's Information Technology Investment Management Framework, A Framework for Assessing and Improving Maturity (March 2004) states that to make good IT investment decisions, an organization must be able to acquire pertinent information about each investment and store that information in a retrievable format for use in making future investment decisions. During this critical process, the organization identifies its IT assets and creates a comprehensive repository of investment information used to track the organization's IT resources and provide insights and trends about major IT costs and management drivers.

No Cumulative Cost and Schedule Documentation

OI&T did not maintain cumulative life cycle cost and schedule documentation. We made requests to senior OI&T program oversight and budget officials for the total cost, scheduled milestones, and schedule overruns for all IT investments in VA's IT investment portfolio. However, OI&T officials were unable to provide the information and indicated that the requested documentation existed at the program management level. However, program managers stated that they did not maintain cumulative life cycle cost and schedule documentation and indicated that having that type of information would be beneficial to them. Therefore, we concluded that the documentation did not exist and obtained concurrence from OI&T's Acting CIO. This data would have allowed OI&T to identify, analyze, and monitor program cost and schedule overruns on VA's IT investments.

OI&T has since conducted an internal assessment of their programs and projects and provided us with preliminary data on cost and schedule overruns on two of the programs we selected for our review. However, we believe that the cost and schedule data for one was not calculated from the program's inception. For example, OI&T cost data indicates that the PRE program is more than 13 months behind schedule and approximately $18.6 million (50 percent) over budget. However, the cost and schedule overruns were

calculated using the 2007 baseline but PRE has been on-going since 2002. Further, OI&T officials conducting the assessment indicated that they would not place much reliance on the preliminary data provided by OI&T's T21 review team. Without accurate and complete cumulative cost and schedule documentation, OI&T cannot ensure that major IT investments are meeting 90 percent of the cost, schedule and performance goals, as required by *OMB Circular No. A-11, Planning, Budgeting, Acquisition, and Management of Capital Assets* (June 2006).

Monitoring is a critical management control that assesses the quality of performance over time. Without conducting disciplined performance and quality reviews, ensuring successful completion of exit criteria, maintaining documentation on cumulative cost and schedule data, and maintaining a central data repository, OI&T cannot ensure adequate monitoring of VA's IT investments. Continuous monitoring of developmental and steady state systems is essential and provides reasonable assurance that effective and efficient management of VA's IT investments is taking place. Ineffective monitoring of VA's IT investments perpetuates significant development delays and cost overruns that could ultimately lead to failed programs and projects.

OI&T Actions

VA OI&T has taken the following actions:

1. Implemented the use of the Program Management Accountability System in June 2009 to proactively manage VA's IT projects and to ensure that IT program managers have access to the resources and tools necessary to complete system development efforts on time and within budget.

2. Implemented ProPath, in July 2009, to document OI&T's standard processes related to the SDLC. ProPath incorporates requirements in the *One VA IT Program Management Guide* (October 2008).

3. Mandated the use of the TSPR as the central data repository for new projects by July 2009. Implementation plans are being developed to address projects currently underway and how the mandate will apply to them.

During the course of our review, OI&T began a Technology in the 21st Century (T21) review to assess their IT developmental programs and projects to determine how they align with VA's mission. Based on its assessment, OI&T has temporarily halted 45 of the 282 programs and projects, which were either behind schedule or over budget. OI&T will review these projects and determine whether they should be continued.

VA OI&T plans to take the following action develop standards and guidelines addressing the following:

- *Cost Estimation Guide*
- *Risk Management Guide*
- *Operational Analysis Guide*
- *Earned Value Management Guide*
- *Project Requirements Governance Guide*
- *IT Program Management Guide (Update)*

Although OI&T actions may correct some of the deficiencies discussed here, a more thorough review of the corrective actions is needed to ensure the effective and efficient use of the SDLC process to manage VA's IT investments. Directives are needed to enforce the requirements related to the SDLC process. Without a directive to enforce the guides, they will be considered non-directives and the implementation of the guides will remain inconsistent.

Conclusion

In general, VA's SDLC process outlined in the *One VA IT Program Management Guide* is adequate and comparable to Federal standards and IT best practices; however, OI&T did not communicate, comply with, or enforce the mandatory requirements outlined in the guide. In addition, OI&T needs to establish and enforce management controls to ensure programs designated as major IT investments are effectively managed using the SDLC process particularly before they continue the development of the 45 temporarily halted projects. Given that OI&T is the steward of VA's IT investments and responsible for managing a comprehensive IT investment portfolio valued at approximately $3.4 billion, it is vital that immediate action is taken to implement management controls to ensure centralized oversight of VA's IT investments. A lack of management controls leaves VA's entire portfolio at risk. Finally, OI&T's recent action to temporarily halt 45 projects, makes implementing and enforcing management controls essential to ensure the future success of VA's IT investments.

Recommendations

1. We recommend the Assistant Secretary for Information and Technology require OI&T develop and issue a directive that communicates, VA-wide, the mandatory requirements of VA's SDLC process outlined in the existing Program Management Guide to ensure consistent management of VA's IT investment portfolio.

2. We recommend the Assistant Secretary for Information and Technology require OI&T implement controls to continuously monitor all programs and projects in VA's IT investment portfolio.

3. We recommend the Assistant Secretary for Information and Technology enforce disciplined performance and quality reviews on all major programs and projects in VA's IT investment portfolio.

4. We recommend the Assistant Secretary for Information and Technology require OI&T establish and maintain a central data repository to store all program artifacts, including cumulative cost and schedule data.

Management Comments

The Assistant Secretary for Information and Technology concurred with our findings and recommendations. OI&T is implementing the use of its Program Management Accountability System (PMAS) to manage VA's IT developmental projects. PMAS is designed to allow for early identification of project issues to ensure project managers reevaluate the project and take appropriate corrective action. PMAS will provide project managers with the necessary resources to complete development efforts on time and within budget. OI&T's goal is to integrate VA's portfolio of projects into PMAS by the end of FY 2010. PMAS requires that the Technical Services Project Repository (TSPR) be used as the repository for all project re-planning documents for projects managed by PMAS. OI&T is also updating its IT governance plan and developing an IT Program Management Directive, which will incorporate PMAS requirements.

OIG Comments

The Assistant Secretary for Information and Technology's planned corrective actions are responsive to our concerns. We will close these recommendations when proposed actions have been completed by OI&T. Appendix C contains the full text of their comments.

Appendix A Scope and Methodology

Scope

The scope of our audit included VA's new initiatives and ongoing programs designated as major IT investments for FY 2008 and FY 2009, except for the Financial and Logistics Integrated Technology Enterprise (FLITE) major IT investment. We are performing a FLITE review to examine if VA is effectively managing the development of the program by incorporating lessons learned. GAO is also conducting a review of selected aspects of the FLITE system development process.

We determined whether VA's SDLC process was adequate and comparable to Federal standards and IT best practices by comparing and analyzing current policies and procedures, Federal standards, IT best practices, and internal controls related to the SDLC process. We also evaluated the effectiveness of OI&T's management of VA's $3.4 billion IT investment portfolio, which contained 101 major and non-major investments. We focused on VA's 41 major IT investments, which accounted for $3.2 billion in budget year (BY) 2010. Of the 41 major IT investments, we reviewed four major IT investments that accounted for approximately $1.5 billion, about 47 percent of the total budgeted dollar amount. These four investments are comprised of approximately 35 sub-component projects and were in various phases of the life cycle process. (See Table 1 for the IT investments reviewed and a description of each).

Methodology

Our review of major IT investments focused on the assessment of final versions of program documentation, or artifacts, corresponding to the most recently completed milestone review. We developed a list of the required artifacts for each milestone using the *One VA Enterprise Architecture Program Management Plan,* Version 4.2 (February 2007), the *One VA IT Program Management Guide* (October 2008), and OI&T's Office of Oversight and Assessment checklist of exit criteria required for each milestone. We assessed all of the available artifacts required for a program to progress from one milestone to the next in the SDLC process, including the project management plan, risk management plan, and the acquisition management plan. We did not consider one artifact more critical or relevant than another. Finally, we conducted interviews with OI&T senior management and program managers to determine their roles and responsibilities related to the SDLC process—our review focused on OI&T operations during February through July 2009.

Reliability of Computer-Processed Data

To address our audit objectives, we did not rely on computer-processed data. For background purposes only, we obtained the Primavera-generated reports to determine the extent of the cost overruns and schedule delays for the programs within OI&T's investment portfolio. (Primavera is the project management

software VA uses to manage all major IT programs). The reports did not maintain cumulative cost and schedule data and we have included this as a condition within our report. As a result, we did not perform a full assessment of data reliability.

Compliance with Government Audit Standards

We conducted this performance audit from February through July 2009 in accordance with generally accepted government auditing standards. The standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Description of the Four Major IT Investments Reviewed

Investment Name	Last Milestone Review	Date Last Milestone Review Briefing Presented	BY 2010 Amount (funding shown in millions)	Description
1. Enrollment Enhancements	3	9/16/08	$24	Replaced the Legacy Health Eligibility Center (HEC) System.
2. Health Data Repository	3	10/21/08	$46	Used to retrieve, store, and share patient medical records from all VHA systems in near-real time to improve quality of care.
3. Pharmacy Re-engineering	1	A milestone review briefing has never been conducted for this investment	$23	Will replace existing pharmacy software modules with new technology by re-engineering the current process and facilitate improved pharmacy operations, customer service, and patient safety for the Department of Veterans Affairs.
4. Medical IT Support Program	4	A milestone review briefing has never been conducted for this investment	$1,432	Investment or funding vehicle used to support the medical centers to pay recurring bills and upgrade equipment and software requests.
	TOTAL		**$1,525**	

Appendix B Background

OI&T Oversight and Management

VA's IT Strategic Plan FY 2006–2011 indicates VA has had long standing deficiencies with IT due to a lack of standardization, compatibility, interoperability, and fiscal discipline. These deficiencies were initially seen as a result of a decentralized IT management environment. In 2006, VA realigned its IT operations and development functions under VA OI&T to centralize authority over Department IT resources under the Assistant Secretary for Information and Technology (AS/IT), who also serves as VA's CIO. This enabled OI&T to enforce rigorous project management, establish uniform standards and monitor compliance with Federal and VA policies and procedures. Resources in the Department were realigned under the CIO and included governance, staffing, equipment, budgetary resources, and processes and procedures. As a result, responsibility for the design and development of VA's IT investments fell under OI&T's governance boards. These boards direct and control the enterprise, overseeing the development of the programs and projects within VA's investment portfolio.

SDLC Program Management

Effective program management enables an organization to manage its investments in a disciplined, well-managed, and consistent manner so they are completed on time and within budget. Capital investment policies support project management principles by guiding Federal agencies in the selection and management of IT investments and by ensuring that IT resources are used efficiently and are aligned with the agency's mission. VA established an IT Project Management Framework VA established an IT Project Management Framework which is outlined in the *One VA IT Program Management Guide* and the *One VA IT Project Management Guide* to ensure a structured approach to program development and to provide systematic checks and balances annually and at critical points within the project life cycle.

The SDLC framework is the model VA uses to manage major IT investments throughout their life cycles. This framework enables senior leadership to evaluate and make critical funding decisions about major IT investments at major decision points referred to as milestones. Each milestone marks the end of a phase and a critical decision point where a Milestone Review briefing is conducted. Milestone Review briefings provide a basis for comprehensive management, progressive decision making, and authorization of funding for each phase of the IT SDLC framework. The content of the Milestone Review briefing depends on the completed milestone phase of the program. Each succeeding milestone builds, and the detail increases, based upon the information provided in the previous milestone. By monitoring and measuring progress on a regular basis at each milestone, program managers can identify variances and take appropriate corrective actions. The IT SDLC framework has five milestones (0-4) and five corresponding Milestone Review briefings. Descriptions of the five milestones follow:

Milestone 0—Concept Definition Approval for Requirements Development. The business sponsor addresses areas necessary to warrant approval for requirements development and authorization to expend the funds necessary to establish the program's business case.

Milestone 1—Requirements Approval for Design. The program manager (PM) addresses the areas necessary to warrant senior leadership's approval of resources for continuing the project into the design effort. The PM and the business sponsor must demonstrate a well-founded business case for the effort and a complete set of requirements.

Milestone 2—System Design Approval for Development. The PM provides a completed design, results of the prototype, and requests permission to move into development and testing.

Milestone 3—System Development Approval for Deployment. The PM develops the detailed design from Phase 2 into an operational solution in accordance with the project management plan, approved baseline requirements, and other applicable project documentation. The system is developed, documented, and required internal testing and validation is performed to warrant approval to deploy the system.

Milestone 4—Deployment Approval for Transfer to Operations. The PM requests approval to transfer authority to the Operations Manager. This milestone marks the official end of development efforts and the beginning of steady state operations.

System Operation. The Operations Manager assumes responsibility for the operational system, operates and maintains the system, ensures the system is certified on a recurring basis and identifies when the system should be modernized, replaced, or retired. Until an operational system is retired, milestone 4 reviews are required every three years for operational systems.

The PM must present a Milestone Review briefing, at which time, exit criteria are reviewed by the Competency Assessment Review team. Exit criteria help assess business alignment, data compliance, technical compliance, enterprise architecture alignment, security and privacy compliance, and program management. Successful completion of the exit criteria is required for a program to progress from one phase or milestone to the next in the SDLC process.

Organizational Structure

The AS/IT is the single leadership authority for IT and the CIO for VA; thus, the CIO has overall authority and responsibility for the effective management

of VA's IT investments. OI&T advises and assists the CIO on matters relating to VA-wide responsibilities, such as policy and budget formulation, planning, acquisition, execution, and oversight of Department IT requirements. The Office of IT Enterprise Strategy, Policy, Plans and Programs (OE/SPP&P) monitors compliance with cost, schedule, and performance goals for major IT initiatives. Accordingly, OE/SPP&P conducts Program Management Reviews, milestone reviews, and operational analysis. Moreover, OE/SPP&P develops IT Program Management policies and procedures and the IT multi-year program that identifies major business initiatives that require IT support as well as IT infrastructure needs over a two to four year time frame. The Office of Enterprise Development (OED) serves as the chief advisor to the AS/IT for all enterprise application development activities, which consist of planning, developing, and testing applications to meet business requirements.

Appendix C Agency Comments

Department of Veterans Affairs

Memorandum

Date: September 18, 2009

From: Assistant Secretary for Information and Technology (005)

Subj: Draft Report: Audit of VA's System Development Life Cycle (Project No. 2009-01239-R6-0058)

To: Director, OIG Dallas Audit Operations Division (52DA)

1. The VA Office of Information and Technology (OI&T) acknowledges receipt of the Office of Inspector General's draft report and concurs with the four recommendations. OI&T's response and target completion dates are enclosed.

2. While OI&T agrees with most of the audits findings, there are several with which we disagree. The footnote on page 2 indicates the Replacement Schedule Application (RSA), now referred to as the Schedule Replacement Project (SRP), was terminated in March 2009. SRP development was paused in March 2009, not terminated, to allow for program reevaluation and an Analysis of Alternatives to be developed. Additionally, VA OI&T action 2 (page 7) states OED ProPath will also maintain cumulative cost and schedule data for all programs and projects. OED ProPath is OI&T's process asset library and is not OI&T's repository for cost and schedule data. That data is maintained in the OED Project Repository as well as Primavera Project Management tool.

3. Thank you for the opportunity to comment on your recommendations. If you have any questions, please contact Ms. Martha Orr, Executive Director, Quality, Performance and Oversight, at (202) 461-6910.

(original signed by:)

Roger W. Baker

Attachment

Attachment

Assistant Secretary's Comments to
Office of Inspector General's Report

The following Assistant Secretary's comments are submitted in response to the recommendations in the Office of Inspector General's Report:

OIG Recommendations

1. We recommend the Assistant Secretary for Information and Technology require OI&T develop and issue a directive that communicates, VA-wide, the mandatory requirements of VA's SDLC process to ensure consistent management of VA's IT investment portfolio.

Concur **Target Completion Date:** April 2010

OI&T Response: OI&T is implementing the use of the Program Management Accountability System (PMAS) to proactively manage VA's IT projects and to ensure that IT program and project managers have adequate plans and access to the resources necessary to complete development efforts on time and within budget. PMAS will be incorporated into the IT Program Management Directive (policy) being developed for implementation in 2010.

2. We recommend the Assistant Secretary for Information and Technology require OI&T implement controls that ensure continuous monitoring of all programs and projects in VA's IT investment portfolio.

Concur **Target Completion Date:** September 2010

OI&T Response: Efforts are underway to update Governance for IT programs and projects within the VA. This is being done with consideration of experience, observations, assessments, and reviews of the existing structure and maturity of the centralization of IT within the VA. The governance plan will include overarching and field governance to monitor programs and projects in VA's IT investment portfolio. These measures are in addition to the specific program and project level monitoring by the OI&T office of responsibility. Additionally, visibility of program and project status will be maintained in the IT dashboard (increased transparency).

3. We recommend the Assistant Secretary for Information and Technology define and enforce disciplined performance and quality reviews on all major programs and projects in VA's IT investment portfolio.

Concur **Target Completion Date:** September 2010

OI&T Response: All programs and projects will be incorporated into the Program Management Accountability System (PMAS) by the end of FY 2010. This system will provide the performance discipline necessary to ensure development standards are being met or identify program and project difficulties early to appropriately reevaluate and apply corrective actions.

4. We recommend the Assistant Secretary for Information and Technology require OI&T establish and maintain a central data repository to store all program artifacts, including cumulative cost and schedule data.

Concur **Target Completion Date:** Completed July 2009

OI&T Response: As noted in the audit report (page 7), the Office of Enterprise Development (OED) Project Repository (previously known as the Technical Services Project Repository, or TSPR) is the central data repository for all new projects. Additionally, the OI&T Program Management Accountability Program (PMAS) requires that the OED Project Repository be used as the repository for all program/project re-planning documents for projects being managed by PMAS.

The data maintained in the OED Project Repository includes all project artifacts, with the exception of those artifacts maintained with the tool producing them. This includes certain engineering diagrams, and project schedules utilizing Primavera Project Management. As such, cumulative cost data and schedules for projects using Primavera Project Management are accessed using the Primavera software.
.

Appendix D OIG Contact and Staff Acknowledgments

OIG Contact	Mario Carbone, 214-253-3301
Acknowledgments	Clenes Duhon Sherry Fincher Glen Gowans Curtis Hill Heather Jones Jamie McFarland Kristin Nichols Sally Stevens

Appendix E Report Distribution

VA Distribution

Office of the Secretary
Veterans Health Administration
Veterans Benefits Administration
National Cemetery Administration
Assistant Secretaries
Office of General Counsel

Non-VA Distribution

House Committee on Veterans' Affairs
House Appropriations Subcommittee on Military Construction, Veterans Affairs, and Related Agencies
House Committee on Oversight and Government Reform
Senate Committee on Veterans' Affairs
Senate Appropriations Subcommittee on Military Construction, Veterans Affairs, and Related Agencies
Senate Committee on Homeland Security and Governmental Affairs
National Veterans Service Organizations
Government Accountability Office
Office of Management and Budget

This report will be available in the near future on the OIG's Web site at http://www.va.gov/oig/publications/reports-list.asp. This report will remain on the OIG Web site for at least 2 fiscal years after it is issued.