
SAO Scientific Computing Infrastructure

Exhibit 300: Capital Asset Plan and Business Case Summary Part I: Summary Information And Justification

Section A: Overview

Date of submission: **Apr 2, 2009**

1. Agency: **452**
2. Bureau: **00**
3. Name of this Capital Asset: **SAO Scientific Computing Infrastructure**
4. Unique Project (Investment) Identifier: **452-00-01-03-01-1001-00**
5. What kind of investment will this be in FY2010? **Operations and Maintenance**
6. What was the first budget year this investment was submitted to OMB? **FY2002**
7. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap: **Directly supports the scientific research mission of the Smithsonian Astrophysical Observatory. The SAO-SCI is used to collect, process, store, analyze, and disseminate astrophysical data as well as provide the computing infrastructure to perform theoretical modeling calculations. The SAO scientific computing project supports the President's Management Agenda E-Government goals to use the Web to provide educational material, to streamline activities, and to improve productivity by research scientists by focusing on core competencies and mission requirements. A comprehensive review of the Scientific Computing Infrastructure and its support was conducted by a scientific review panel. In its Report it concluded that the support mission properly focused. From the Report's Executive Summary: It was expressed in an addendum to the charge to the Committee that there are no additional resources available to support the scientific computing enterprise at SAO. However, it must be recognized that maintaining a leadership role in astronomy research these days demands continued investment in computational infrastructure. New generations of instruments providing massive amounts of data for reduction, storage and archiving and the unprecedented opportunities being developed for internet-based research challenge SAO to keep pace. The need for SAO scientists to be at the cutting-edge of scientific computing with adequate support has never been greater.**
8. Did the Agency's Executive/Investment Committee approve this request? **yes**
 - a. If "yes," what was the date of this approval? **Jul 31, 2008**
9. Did the Project Manager review this Exhibit? **yes**
10. Contact information of Program/Project Manager?

Name **Van L. McGlasson**

Phone Number **617-496-7508**

E-mail vmcglasson@cfa.harvard.edu

- a. What is the current FAC-P/PM (for civilian agencies) or DAWIA (for defense agencies) certification level of the program/project manager? **Waiver Issued**
 - b. When was the Program/Project Manager Assigned? **Sep 17, 1991**
 - c. What date did the Program/Project Manager receive the FAC-P/PM certification? If the certification has not been issued, what is the anticipated date for certification? **Jan 1, 1901**
11. Has the agency developed and/or promoted cost effective, energy efficient and environmentally sustainable techniques or practices for this project. **yes**
- a. Will this investment include electronic assets (including computers)? **yes**
 - b. Is this investment for new construction or major retrofit of a Federal building or facility? (answer applicable to non-IT assets only) **no**
 1. If "yes," is an ESPC or UESC being used to help fund this investment?
 2. If "yes," will this investment meet sustainable design principles?
12. If "yes," is it designed to be 30% more energy efficient than relevant code?
13. Does this investment directly support one of the PMA initiatives? **yes**
- Expanded E-Government**
- a. Briefly and specifically describe for each selected how this asset directly supports the identified initiative(s)? **Directly supports the scientific research mission of the Smithsonian Astrophysical Observatory. The SAO-SCI is used to collect, process, store, analyze, and disseminate astrophysical data as well as provide the computing infrastructure to perform theoretical modeling calculations. The SAO scientific computing project supports the President's Management Agenda E-Government goals to use the Web to provide educational material, to streamline activities, and to improve productivity.**
14. Does this investment support a program assessed using the Program Assessment Rating Tool (PART)? (For more information about the PART, visit www.whitehouse.gov/omb/part.) **no**
- a. If "yes," does this investment address a weakness found during a PART review? If "yes," what is the name of the PARTed program?
 - b. If "yes," what rating did the PART receive?
15. Is this investment for information technology? **yes**

For information technology investments only:

16. What is the level of the IT Project? (per CIO Council PM Guidance) **Level 1**
17. In addition to the answer in 11(a), what project management qualifications does the Project Manager have? (per CIO Council PM Guidance) **(1) Project manager has been validated as qualified for this investment**
18. Is this investment or any project(s) within this investment identified as "high risk" on the Q4-FY 2008 agency high risk report (per OMB Memorandum M-05-23)? **no**
19. Is this a financial management system? **no**
 1. If "yes," does this investment address a FFMI compliance area?
 2. If "yes," which compliance area:
 3. If "no," what does it address?
- b. If "yes," please identify the system name(s) and system acronym(s) as reported in the most recent financial systems inventory update required by

Circular A-11 section 52

20. What is the percentage breakout for the total FY2010 funding request for the following?

Hardware **41**
Software **0**
Services **14**
Other **45**

21. If this project produces information dissemination products for the public, are these products published to the Internet in conformance with OMB Memorandum 05-04 and included in your agency inventory, schedules and priorities? **n/a**

22. Contact information of individual responsible for privacy related questions:

Name **Marsha Shaines**
Phone Number **202-633-5106**
Title **General Counsel**
E-mail **shainesm@si.edu**

23. Are the records produced by this investment appropriately scheduled with the National Archives and Records Administration's approval? **yes**

24. Does this investment directly support one of the GAO High Risk Areas? **no**

Section B: Summary of Spending

1.

	PY-1 and earlier	PY 2008	CY 2009
Planning:	0	0	0
Acquisition:	0	0	0
Subtotal Planning & Acquisition:	0	0	0
Operations & Maintenance:	0.6	0.636	0.636
TOTAL:	0.6	0.636	0.636
Government FTE Costs	0.621	0.635	0.715
Number of FTE represented by Costs:	6	5	6

2. Will this project require the agency to hire additional FTE's? **no**
a. If "yes", How many and in what year?

3. If the summary of spending has changed from the FY2009 President's budget request, briefly explain those changes:

Section D: Performance Information

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
2008	Increased Public Engagement	Mission and Business Results	Higher Education	Number of visitor sessions hosted by SAO website	6 million visitor sessions in 2004	Maintain the number of visitor sessions at 2004 levels	146 million visitors through June 2008
2008	Strengthened Research	Mission and Business Results	Scientific and Technological Research and Innovation	The number of research publications per year in scholarly journals	400 publications in scholarly books and journals in 2004	Maintain the number of publications at 2004 levels	484 publications through the end of June 2008
2008	Enhanced Management Excellence	Technology	Availability	Network servers, switches and routers system availability during normal business hours	99.95% availability during normal business hours	Maintain 99.95% availability during normal business hours	Uptime was maintained
2008	Enhanced Management Excellence	Processes and Activities	Cycle Time	Network moves, adds and changes	Network moves, adds and changes take place within two business days	Maintain delivery of moves, adds and changes within 2 business days	Cycle time was met
2008	Enhanced Management Excellence	Customer Results	Availability	Email, file and print, web and database servers available during normal business hours	No unplanned outages in 2007	No more than 3 unplanned outages per year	One unplanned outage during 2008
2009	Increased Public Engagement	Mission and Business Results	Higher Education	Number of visitor sessions hosted by SAO website	6 million visitor sessions	Maintain the number of visitor sessions	TBD
2009	Strengthened Research	Mission and Business Results	Scientific and Technological Research and Innovation	The number of research publications per year in scholarly books and journals	400 publications in scholarly books and journals	400 each year	TBD
2009	Enhanced Management	Technology	Availability	Network servers,	99.95% availability	Maintain 99.95%	TBD

	Excellence			switches and routers system availability during normal business hours	during normal business hours	availability during normal business hours	
2009	Enhanced Management Excellence	Processes and Activities	Cycle Time	Network moves, adds and changes	Network moves, adds and changes take place within two business days	Maintain delivery of moves, adds and changes at within 2 business days	TBD
2009	Enhanced Management Excellence	Customer Results	Availability	Email, file and print, web and database servers available during normal business hours	No unplanned outages in 2007	No more than 3 unplanned outages per year	TBD
2010	Increased Public Engagement	Mission and Business Results	Higher Education	Number of visitor sessions hosted by SAO website	6 million visitor sessions	Maintain the number of visitor sessions	TBD
2010	Strengthened Research	Mission and Business Results	Scientific and Technological Research and Innovation	The number of research publications per year in scholarly books and journals	400 publications in scholarly books and journals	400 each year	TBD
2010	Enhanced Management Excellence	Technology	Availability	Network servers, switches and routers system availability during normal business hours	99.95% availability during normal business hours	Maintain 99.95% availability during normal business hours	TBD
2010	Enhanced Management Excellence	Processes and Activities	Cycle Time	Network moves, adds and changes	Network moves, adds and changes take place within two business days	Maintain delivery of moves, adds and changes at within 2 business days	TBD
2010	Enhanced Management Excellence	Customer Results	Availability	Email, file and print, web and database servers	No unplanned outages in 2007	No more than 3 unplanned outages	TBD

				available during normal business hours		per year	
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Section F: Enterprise Architecture (EA)

1. Is this investment included in your agency's target enterprise architecture? **yes**
 - a. If "no," please explain why?
2. Is this investment included in the agency's EA Transition Strategy? **yes**
 - a. If "yes," provide the investment name as identified in the Transition Strategy provided in the agency's most recent annual EA Assessment.
Smithsonian Astrophysical Observatory
 - b. If "no," please explain why?
3. Is this investment identified in a completed and approved segment architecture?
no
 - a. If "yes," provide the six digit code corresponding to the agency segment architecture. The segment architecture codes are maintained by the agency Chief Architect. For detailed guidance regarding segment architecture codes, please refer to <http://www.egov.gov/>. **109-000**

4. Service Component Reference Model (SRM) Table :							
Agency Component Name	Agency Component Description	FEA SRM Service Type	FEA SRM Component	Service Component Reused		Internal or External Reuse?	BY Funding Percentage
				Component Name	UPI		
NIS, AD, LDAP, TACACS, Windows, Solaris, and Linux OSs COTS products	Used for access control	Security Management	Access Control			Internal	5
Kerberos, SSH, SSL/TSL, IPSEC VLANs, Windows, Solaris, and Linux COTS products	Used to encrypt authentication traffic and network communication	Security Management	Cryptography			Internal	5
Cisco IDS and TCPWrappers COTS products	Used to detect illegal entrance into a computer system.	Security Management	Intrusion Detection			Internal	5
McAfee VirusScan Enterprise	Provides antivirus and virus software	Security Management	Virus Protection			Internal	5

and EPO COTS products	and signature update services						
Sendmail and Exchange (Outlook client) COTS products	Supports the transmission of messages over the network and internet	Collaboration	Email			Internal	5
Microsoft Exchange (Outlook client)	Supports shared and individual calendars and conference rooms	Collaboration	Shared Calendaring			Internal	5
ht://Dig Open Source product	Support the retrieval of records that satisfy a specific query	Search	Query			No Reuse	5
The Network Services infrastructure : Polycomm units	Support video conferencing	Communication	Video Conferencing			Internal	5
Flex LM COTS product	Used for Unix-side license management	Systems Management	License Management			No Reuse	6
VNC, Microsoft Desktop Sharing, Terminal Services	Support the monitoring, administration, and usage of applications and enterprise systems from locations outside the immediate	Systems Management	Remote Systems Control			Internal	4
Cisco Works and UNIX scripts	Used to perform a variety of real-time system monitoring and alerts.	Systems Management	System Resource Monitoring			Internal	5
CLI, WSUS, SMS, and EPO	Support the propagation, installation, and upgrade of computer programs, applications, and components	Systems Management	Software Distribution			Internal	5
Listserv	Allow customers to join a forum, listserv, or	Customer Preferences	Subscriptions			Internal	5

	mailing list.						
Intranet	Various user guides are available through SAO's Intranet	Customer Initiated Assistance	Online Tutorials			Internal	5
Cisco Works	Cisco Works in conjunction with Unix scripts are used for network management	Organizational Management	Network Management			Internal	5
Intranet, including search	Allows access to data and information	Knowledge Management	Information Retrieval			Internal	5
IRAF and IDL Open Source software	Used to chart astronomical data	Visualization	Graphing / Charting			No Reuse	5
IRAF and IDL Open Source software	Used to support the creation and manipulation of electronic images	Visualization	Imagery			No Reuse	4
Astronomical Image Analysis System	Use data for prediction and pattern detection,	Knowledge Discovery	Modeling			No Reuse	5
NRF custom software	The NRF Intranet web-based system for network moves, adds, and changes includes standardized reports.	Reporting	Standardized / Canned			No Reuse	5
Oracle COTS product	Supports the population of a data source with external data	Data Management	Loading and Archiving			Internal	5
EMC Lagato and Veritas NetBackup COTS products	Used for backup and recovery of Windows and Solaris / Linux.	Data Management	Data Recovery			Internal	5
Oracle COTS product	Supports the classification of data	Data Management	Data Classification			Internal	5
Intranet	An Intranet web-based timesheet application is	Human Resources	Time Reporting			No Reuse	1

	used for employee time reporting						
Cisco Works COTS product and NRF custom software	Used to support identification, upgrade allocation and replacement of physical devices	Asset / Materials Management	Computers / Automation Management			Internal	5
AD, LDAP, MS Exchange COTS products and intranet staff directory	Support the listing of employees and their whereabouts.	Human Capital / Workforce Management	Workforce Directory / Locator			Internal	5
NIS, AD, LDAP, TACACS, Windows, Solaris, and Linux OSs COTS products	Used for identification and authentication	Security Management	Identification and Authentication			Internal	5

5. Technical Reference Model (TRM) Table:

FEA SRM Component	FEA TRM Service Area	FEA TRM Service Category	FEA TRM Service Standard	Service Specification
Subscriptions	Service Platform and Infrastructure	Delivery Servers	Application Servers	Majordomo
Subscriptions	Service Platform and Infrastructure	Delivery Servers	Application Servers	MS Exchange
Subscriptions	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Subscriptions	Component Framework	User Presentation / Interface	Static Display	Email Client
Online Tutorials	Service Access and Delivery	Access Channels	Web Browser	Mozilla Firefox
Online Tutorials	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Online Tutorials	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Online Tutorials	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Online Tutorials	Service Platform and Infrastructure	Delivery Servers	Web Servers	Apache
Online Tutorials	Service Platform and Infrastructure	Delivery Servers	Application Servers	Tomcat
Online Tutorials	Service Platform and Infrastructure	Database / Storage	Database	Oracle

Online Tutorials	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Online Tutorials	Component Framework	User Presentation / Interface	Static Display	HTML
Network Management	Service Access and Delivery	Access Channels	Other Electronic Channels	Bourne Shell
Network Management	Service Access and Delivery	Access Channels	Other Electronic Channels	Cisco Works client
Network Management	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Network Management	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Network Management	Service Platform and Infrastructure	Database / Storage	Database	Oracle
Network Management	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Network Management	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Network Management	Component Framework	User Presentation / Interface	Static Display	Cisco Works application
Information Retrieval	Service Access and Delivery	Access Channels	Web Browser	Mozilla Firefox
Information Retrieval	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Information Retrieval	Service Access and Delivery	Access Channels	Other Electronic Channels	GNOME / Shell
Information Retrieval	Service Access and Delivery	Access Channels	Other Electronic Channels	Windows Client
Information Retrieval	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Information Retrieval	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Information Retrieval	Service Platform and Infrastructure	Support Platforms	Independent Platform	MS Windows
Information Retrieval	Service Platform and Infrastructure	Delivery Servers	Web Servers	Apache
Information Retrieval	Service Platform and Infrastructure	Delivery Servers	Application Servers	Tomcat
Information Retrieval	Service Platform and Infrastructure	Database / Storage	Database	Oracle
Information Retrieval	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Information Retrieval	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Information Retrieval	Component Framework	User Presentation / Interface	Static Display	HTML
Graphing / Charting	Service Access and Delivery	Access Channels	Other Electronic Channels	GNOME
Graphing / Charting	Service Access and Delivery	Access Channels	Other Electronic Channels	IRAF

Graphing / Charting	Service Access and Delivery	Access Channels	Other Electronic Channels	IDL
Graphing / Charting	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Graphing / Charting	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Graphing / Charting	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Standardized / Canned	Service Access and Delivery	Access Channels	Web Browser	Mozilla Firefox
Standardized / Canned	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Standardized / Canned	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Standardized / Canned	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Standardized / Canned	Service Platform and Infrastructure	Delivery Servers	Web Servers	Apache
Standardized / Canned	Service Platform and Infrastructure	Delivery Servers	Application Servers	Tomcat
Standardized / Canned	Service Platform and Infrastructure	Database / Storage	Database	Oracle
Standardized / Canned	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Loading and Archiving	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Loading and Archiving	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Loading and Archiving	Service Platform and Infrastructure	Database / Storage	Database	Oracle
Loading and Archiving	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Data Recovery	Service Access and Delivery	Access Channels	Other Electronic Channels	Legato client daemon
Data Recovery	Service Access and Delivery	Access Channels	Other Electronic Channels	Veritas NetBackup client
Data Recovery	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Data Recovery	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Data Recovery	Service Platform and Infrastructure	Database / Storage	Storage	SAIT Drives
Data Recovery	Service Platform and Infrastructure	Delivery Servers	Application Servers	EMC Legato
Data Recovery	Service Platform and Infrastructure	Delivery Servers	Application Servers	Veritas NetBackup Datacenter
Data Recovery	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Data Recovery	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge

Data Recovery	Component Framework	User Presentation / Interface	Static Display	Veritas NetBackup application
Data Recovery	Component Framework	User Presentation / Interface	Static Display	Legato application
Data Classification	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Data Classification	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Data Classification	Service Platform and Infrastructure	Database / Storage	Database	Oracle
Data Classification	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Time Reporting	Service Access and Delivery	Access Channels	Web Browser	Mozilla Firefox
Time Reporting	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Time Reporting	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Time Reporting	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Time Reporting	Service Platform and Infrastructure	Delivery Servers	Web Servers	Apache
Time Reporting	Service Platform and Infrastructure	Delivery Servers	Application Servers	Tomcat
Time Reporting	Service Platform and Infrastructure	Database / Storage	Database	Oracle
Time Reporting	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Time Reporting	Component Framework	User Presentation / Interface	Static Display	HTML
Computers / Automation Management	Service Access and Delivery	Access Channels	Web Browser	Mozilla Firefox
Computers / Automation Management	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Computers / Automation Management	Service Access and Delivery	Access Channels	Other Electronic Channels	Cisco Works client
Computers / Automation Management	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Computers / Automation Management	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Computers / Automation Management	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Computers / Automation Management	Component Framework	User Presentation / Interface	Static Display	Cisco Works application
Computers /	Component	User Presentation	Static Display	HTML

Automation Management	Framework	/ Interface		
Workforce Directory / Locator	Service Access and Delivery	Access Channels	Web Browser	Mozilla Firefox
Workforce Directory / Locator	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Workforce Directory / Locator	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Workforce Directory / Locator	Service Access and Delivery	Service Transport	Supporting Network Services	LDAP
Workforce Directory / Locator	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Workforce Directory / Locator	Service Platform and Infrastructure	Delivery Servers	Web Servers	Apache
Workforce Directory / Locator	Service Platform and Infrastructure	Delivery Servers	Application Servers	Tomcat
Workforce Directory / Locator	Service Platform and Infrastructure	Database / Storage	Database	Oracle
Workforce Directory / Locator	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Workforce Directory / Locator	Component Framework	User Presentation / Interface	Static Display	HTML
Identification and Authentication	Service Access and Delivery	Access Channels	Other Electronic Channels	BOURNE Shell
Identification and Authentication	Service Access and Delivery	Access Channels	Other Electronic Channels	GNOME
Identification and Authentication	Service Access and Delivery	Access Channels	Other Electronic Channels	Windows client
Identification and Authentication	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Identification and Authentication	Service Access and Delivery	Service Transport	Supporting Network Services	NIS
Identification and Authentication	Service Access and Delivery	Service Transport	Supporting Network Services	Active Directory
Identification and Authentication	Service Access and Delivery	Service Transport	Supporting Network Services	LDAP
Identification and Authentication	Service Access and Delivery	Service Transport	Supporting Network Services	TACACS
Identification and Authentication	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Identification and Authentication	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Identification and Authentication	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Identification and Authentication	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Cisco routers and switches
Access Control	Service Access and Delivery	Access Channels	Other Electronic Channels	BOURNE Shell
Access Control	Service Access and Delivery	Access Channels	Other Electronic Channels	GNOME

Access Control	Service Access and Delivery	Access Channels	Other Electronic Channels	Windows client
Access Control	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Access Control	Service Access and Delivery	Service Transport	Supporting Network Services	NIS
Access Control	Service Access and Delivery	Service Transport	Supporting Network Services	Active Directory
Access Control	Service Access and Delivery	Service Transport	Supporting Network Services	LDAP
Access Control	Service Access and Delivery	Service Transport	Supporting Network Services	TACACS
Access Control	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Access Control	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Access Control	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Access Control	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Cisco routers and switches
Cryptography	Service Access and Delivery	Service Transport	Supporting Network Services	SSH
Cryptography	Service Access and Delivery	Service Transport	Supporting Network Services	Kerberos
Cryptography	Service Access and Delivery	Service Transport	Supporting Network Services	SSL
Cryptography	Service Access and Delivery	Service Transport	Supporting Network Services	TCPWrappers
Cryptography	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Cryptography	Service Access and Delivery	Service Transport	Service Transport	IPSEC
Cryptography	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Cryptography	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Cryptography	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Cisco PIX firewall
Cryptography	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Cisco routers and switches
Cryptography	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Cisco VPN
Cryptography	Component Framework	Security	Supporting Security Services	TLS
Intrusion Detection	Service Access and Delivery	Access Channels	Other Electronic Channels	Cisco IDS client
Intrusion Detection	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Intrusion Detection	Service Access and Delivery	Service Transport	Service Transport	TCP/IP

Intrusion Detection	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Cisco IDS
Virus Protection	Service Access and Delivery	Access Channels	Other Electronic Channels	McAfee VirusScan Console
Virus Protection	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Virus Protection	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Virus Protection	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell Optiplex
Virus Protection	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Virus Protection	Component Framework	User Presentation / Interface	Static Display	VirusScan application
Email	Service Access and Delivery	Access Channels	Other Electronic Channels	SUN DT Mail
Email	Service Access and Delivery	Access Channels	Other Electronic Channels	Mosaic
Email	Service Access and Delivery	Access Channels	Other Electronic Channels	MS Outlook
Email	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Email	Service Access and Delivery	Service Transport	Supporting Network Services	SMTP
Email	Service Access and Delivery	Service Transport	Supporting Network Services	POP 3
Email	Service Access and Delivery	Service Transport	Supporting Network Services	IMAP
Email	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Email	Service Platform and Infrastructure	Delivery Servers	Application Servers	Sendmail
Email	Service Platform and Infrastructure	Delivery Servers	Application Servers	MS Exchange
Email	Service Platform and Infrastructure	Database / Storage	Database	MS SQL Server
Email	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Email	Component Framework	User Presentation / Interface	Static Display	HTML
Email	Component Framework	User Presentation / Interface	Static Display	Exchange application
Shared Calendaring	Service Access and Delivery	Access Channels	Web Browser	Mozilla Firefox
Shared Calendaring	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Shared Calendaring	Service Access and Delivery	Access Channels	Other Electronic Channels	MS Outlook
Shared Calendaring	Service Access and Delivery	Delivery Channels	Intranet	Intranet

Shared Calendaring	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Shared Calendaring	Service Platform and Infrastructure	Database / Storage	Database	MS SQL Server
Shared Calendaring	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Shared Calendaring	Component Framework	User Presentation / Interface	Static Display	HTML
Shared Calendaring	Component Framework	User Presentation / Interface	Static Display	Exchange application
Query	Service Access and Delivery	Access Channels	Web Browser	Mozilla Firefox
Query	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Query	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Query	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Query	Service Platform and Infrastructure	Delivery Servers	Web Servers	Apache
Query	Service Platform and Infrastructure	Delivery Servers	Application Servers	Tomcat
Query	Service Platform and Infrastructure	Delivery Servers	Application Servers	Ht://Dig
Query	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Query	Component Framework	User Presentation / Interface	Static Display	HTML
Video Conferencing	Service Access and Delivery	Access Channels	Other Electronic Channels	Polycomm video conference device
Video Conferencing	Service Access and Delivery	Delivery Channels	Intranet	Peer to Peer
Video Conferencing	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
License Management	Service Access and Delivery	Access Channels	Other Electronic Channels	Bourne Shell
License Management	Service Access and Delivery	Delivery Channels	Intranet	Intranet
License Management	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
License Management	Service Platform and Infrastructure	Delivery Servers	Application Servers	Flex LM
License Management	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
License Management	Component Framework	User Presentation / Interface	Static Display	SUN Solaris
Remote Systems Control	Service Access and Delivery	Access Channels	Other Electronic Channels	Bourne Shell scripts
Remote Systems Control	Service Access and Delivery	Access Channels	Other Electronic Channels	MS Windows client

Remote Systems Control	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Remote Systems Control	Service Access and Delivery	Service Transport	Supporting Network Services	SSH
Remote Systems Control	Service Access and Delivery	Service Transport	Supporting Network Services	VNC
Remote Systems Control	Service Access and Delivery	Service Transport	Supporting Network Services	MS Terminal Services
Remote Systems Control	Service Access and Delivery	Service Transport	Supporting Network Services	Telnet
Remote Systems Control	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Remote Systems Control	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Remote Systems Control	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Remote Systems Control	Component Framework	User Presentation / Interface	Static Display	SUN Solaris
Remote Systems Control	Component Framework	User Presentation / Interface	Static Display	Microsoft Windows
System Resource Monitoring	Service Access and Delivery	Access Channels	Other Electronic Channels	Bourne Shell scripts
System Resource Monitoring	Service Access and Delivery	Access Channels	Other Electronic Channels	MS Task Manager
System Resource Monitoring	Service Access and Delivery	Access Channels	Other Electronic Channels	Cisco Works client
System Resource Monitoring	Service Access and Delivery	Delivery Channels	Intranet	Intranet
System Resource Monitoring	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
System Resource Monitoring	Service Platform and Infrastructure	Delivery Servers	Application Servers	Syslog
System Resource Monitoring	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
System Resource Monitoring	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
System Resource Monitoring	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Cisco routers and switches
System Resource Monitoring	Component Framework	User Presentation / Interface	Static Display	SUN Solaris
System Resource Monitoring	Component Framework	User Presentation / Interface	Static Display	Microsoft Windows
Software Distribution	Service Access and Delivery	Access Channels	Web Browser	Internet Explorer
Software Distribution	Service Access and Delivery	Delivery Channels	Intranet	Internet
Software Distribution	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Software Distribution	Service Access and Delivery	Service Transport	Supporting Network Services	Windows Software Update Service

Software Distribution	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Software Distribution	Service Platform and Infrastructure	Delivery Servers	Application Servers	CLI
Software Distribution	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	SUN Sun Fire
Software Distribution	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Dell PowerEdge
Subscriptions	Service Access and Delivery	Access Channels	Other Electronic Channels	SUN DT Mail
Subscriptions	Service Access and Delivery	Access Channels	Other Electronic Channels	MS Outlook
Subscriptions	Service Access and Delivery	Delivery Channels	Intranet	Intranet
Subscriptions	Service Access and Delivery	Service Transport	Supporting Network Services	SMTP
Subscriptions	Service Access and Delivery	Service Transport	Supporting Network Services	POP 3
Subscriptions	Service Access and Delivery	Service Transport	Supporting Network Services	IMAP
Subscriptions	Service Access and Delivery	Service Transport	Service Transport	TCP/IP
Subscriptions	Service Platform and Infrastructure	Delivery Servers	Application Servers	Sendmail

6. Will the application leverage existing components and/or applications across the Government (i.e., USA.Gov, Pay.Gov, etc)? **no**
- a. If "yes," please describe.

Part III: For "Operation and Maintenance" investments ONLY (Steady State)

Section A: Risk Management (All Capital Assets)

Does the investment have a Risk Management Plan? **yes**

- a. If "yes," what is the date of the plan? **Sep 1, 2004**
- b. Has the Risk Management Plan been significantly changed since last year's submission to OMB? **no**
- c. If "yes," describe any significant changes:
- d. If there currently is no plan, will a plan be developed?
- e. If "yes," what is the planned completion date?
- f. If "no," what is the strategy for managing the risks?