U.S. Department of Commerce U.S. Patent and Trademark Office



Privacy Impact Assessment for the Storage Infrastructure Managed Services (SIMS)

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- 🗵 Concurrence of Senior Agency Official for Privacy/DOC Chief Privacy Officer
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U.S. Department of Commerce Privacy Impact Assessment USPTO Storage Infrastructure Managed Services (SIMS)

Unique Project Identifier: PTOI-027-00 (2941)

Introduction: System Description

Provide a description of the system that addresses the following elements: The response must be written in plain language and be as comprehensive as necessary to describe the system.

The SIMS storage infrastructure is spread across three (3) different data centers, each providing a specific role: the Alexandria Production Data Center (East), the Alexandria Test and Development Lab (West), and the Boyers (PA) Data Center. The SIMS architecture denotes the Boyers data center to be an alternate processing site, which is beyond its legacy storage component's current function as a data bunkering site. SIMS provides disk-based storage components, Storage Area Network (SAN), replication, and analysis capabilities. The disk-based storage components are separated into two main areas: 1) Block-based storage and 2) Network Attached Storage (NAS). The Block based storage is used to support the four Service Levels (Platinum, Gold, Silver, and Bronze). These service levels represent different levels of storage performance.

(a) a general description of the information in the system

Electronic data storage requires electrical power to store and retrieve that data. This electromagnetic data is stored in either an analog data or digital data format on a variety of media. This type of data is considered to be electronically encoded data, whether or not it is electronically stored in a semiconductor device, for it is certain that a semiconductor device was used to record it on its medium. Most electronically processed data storage media (including some forms of computer data storage) are considered permanent (non-volatile) storage, that is, the data will remain stored when power is removed from the device. For SIMS the stored data is based upon the application/system that possesses storage requirements. SIMS' systems stores data as files (predominantly) and support both Common Internet File System (CIFS) and Network File System (NFS) protocols. They can be accessed easily over the commonly used Transmission Control Protocol/Internet Protocol (TCP/IP) Ethernet based networks and support multiple users connecting to it simultaneously.

SIMS simply provides data storage for numerous USPTO information system-based applications and a list of those applications is located below in Section 6.2. These other systems use the data that is being stored in SIMS.

(b) a description of a typical transaction conducted on the system

A transaction usually means a sequence of information exchange and related work that is treated as a unit for the purposes of satisfying a request and for ensuring data integrity. For a transaction to be completed and data changes to be made permanent, a transaction has to be completed in its entirety. A typical transaction is an application request entered into a computer by an application

user. The request transaction involves checking a database, confirming that the data is available, placing the request, and confirming that the request has been placed and forwarded to the requestor.

If we view this as a single transaction, then all of the steps must be completed before the transaction is successful and the application database is actually changed to reflect the new order. If something happens before the transaction is successfully completed, any changes to the database must be kept track of so that they can be undone.

(c) any information sharing conducted by the system

When communities of interest share a physical SAN infrastructure, they can nevertheless keep their own traffic separate as it travels in and out of storage. Cisco director switches support multiple virtual SANs (VSANs) on the same physical SAN fabric. Each major application, for example, can have its own private VSAN, with its own encryption key, quality of service, security policies, and management functions. Employees can only connect to their own agency's VSAN, even though other agencies share the same physical SAN.

(d) a citation of the legal authority to collect PII and/or BII

5 U.S.C. 301, 35 U.S.C. 2, and 44 U.S.C. 3101.

(e) the Federal Information Processing Standard (FIPS) 199 security impact category for the system is Moderate

Section 1: Status of the Information System

.1 Indicate whether the	infori	matio	n system is a new or e	xistin	g system.	
☐ This is a new info	rmat	ion sv	/stem.			
		•		es the	at create new privacy risks.	
`	_	nnau	on system with chang	cs illa	it create new privacy risks.	
(Check all that ap	1 ,					
\boxtimes This is an existing	g info	rmati	on system in which cl	hange	s do not create new privacy	7
risks. Continue to answ	er ques	tions, an	nd complete certification.			
Changes That Create Nev	v Priv	acy Ri	isks (CTCNPR)			
a. Conversions			d. Significant Merging		g. New Interagency Uses	
b. Anonymous to Non-		П	e. New Public Access		h. Internal Flow or	
Anonymous			c. New I dolle Access		Collection	
c. Significant System			f. Commercial Sources		i. Alteration in Character	
Management Changes j. Other changes that creat	e new	nrivac	vy ricke (enecify):		of Data	-
J. Other changes that creat	.c ncw	privac	y fisks (specify).			
(BII) is collected, ma Identifying Numbers (IN)	intair	ned, o	r disseminated. (Chec	ck all		
a. Social Security*			ile/Case ID		i. Credit Card	
b. Taxpayer ID			river's License		j. Financial Account	
c. Employer ID		_	assport		k. Financial Transaction	
d. Employee ID	<u> </u>		lien Registration		l. Vehicle Identifier	ш
m. Other identifying numbers (specii	y):				
*Explanation for the need to collect, maintain, or disseminate the Social Security number, including truncated form: The data stored in SIMS is based upon the application/system ("front-end system") that uses SIMS for its storage requirements. For those systems that collect SSNs, their need for collection, maintenance, and dissemination is addressed by those front-end systems in their PIAs. SIMS does not collect PIA but it is a backend storage system that houses the information.						
	this c	ould b	e accomplished: Handling	and us	there is a way to avoid such age of SSNs are addressed by the re applicable, for avoiding collect	
are identified within those syste						
Conoral Darsonal Data (CDD)						
General Personal Data (GPD) a. Name		σD	ate of Birth	\boxtimes	m. Religion	ПП
b. Maiden Name		_	ace of Birth		n. Financial Information	
c. Alias	$\overline{\Box}$	-	ome Address		o. Medical Information	
d Gender			elenhone Number		n Military Service	

		T		1	
e. Age		k. Email Address	\boxtimes	q. Physical Characteristics	
f. Race/Ethnicity		1. Education		r. Mother's Maiden Name	
s. Other general personal data	ι (speci	fy):			
Work-Related Data (WRD)					
a. Occupation		d. Telephone Number		g. Salary	\boxtimes
b. Job Title	\boxtimes	e. Email Address	\boxtimes	h. Work History	\boxtimes
c. Work Address	\boxtimes	f. Business Associates	\boxtimes		
i. Other work-related data (s	pecify)	:			
Distinguishing Features/Bion				T	
a. Fingerprints		d. Photographs		g. DNA Profiles	Ш
b. Palm Prints		e. Scars, Marks, Tattoos		h. Retina/Iris Scans	
c. Voice		f. Vascular Scan		i. Dental Profile	
Recording/Signatures	naa/laiau	matrice (anacify). CIMS is the on		e-wide storage solution for USP	FO *
				on's responsibility to receive con	
to collect and use.	15 410 0	onceited by a system, it is that ap	pnean	on's responsibility to receive con	SCIII
System Administration/Audi	t Data	(SAAD)			
a. User ID		c. Date/Time of Access	\boxtimes	e. ID Files Accessed	\boxtimes
b. IP Address		d. Queries Run		f. Contents of Files	
g. Other system administration				11 0011001110 01 1 1100	
8		(- Fy).			
Other Information (specify)					
(specify					
2.2 Indicate sources of th	e PII/	BII in the system. (Check of	all the	at apply.)	
		zii iii uie systeiii (enten t			
D: 416 I I I I I	4 3371				
Directly from Individual abo				Online	
In Person		Hard Copy: Mail/Fax		Online	\boxtimes
Telephone	\boxtimes	Email	\boxtimes		
Other (specify):					
Government Sources Within the Bureau		Od. DOCD		Of E 1 1 A	
	\boxtimes	Other DOC Bureaus		Other Federal Agencies	
State, Local, Tribal	 	E .	K 2		
	\boxtimes	Foreign	\boxtimes		
Other (specify):	 	Foreign	\boxtimes		
	 	Foreign			
Other (specify):	 	Foreign			
	 	Foreign Private Sector		Commercial Data Brokers	

Third Party Website or Application			
Other (specify):			
2.3 Indicate the technologies used that	contain 1	PII/BII in ways that have not been previou	sly
deployed. (Check all that apply.)			
Technologies Used Containing PII/BII Not P	reviously		
Smart Cards		Biometrics	
Caller-ID		Personal Identity Verification (PIV) Cards	
Other (specify):			
☐ There are not any technologies used that	contain P	II/BII in ways that have not been previously deploy	zed .
I here are not any technologies used that	Contain	in bit in ways that have not been previously deploy	cu.
Section 2. System Supported Activities			
Section 3: System Supported Activities			
0.1 I. 1: IT 1	41 1.1.	-1;	1 .1
• • • •	ties which	ch raise privacy risks/concerns. (Check all	that
apply.)			
[
Activities		D-11.	
Audio recordings Video surveillance		Building entry readers Electronic purchase transactions	
Other (specify):		Electronic purchase transactions	Ш
Office (specify).			
☐ ☐ There are not any IT system supported ac	ctivities w	hich raise privacy risks/concerns.	
7 7 11		1 2	
Section 4: Purpose of the System			
section 4. Turpose of the System			
1.1 I 1' / 1 /1 DII/DII ' /1 IT	, .	1 . 11 . 1	. 1
•	ystem is	being collected, maintained, or dissemina	ted.
(Check all that apply.)			
Purpose			
To determine eligibility		For administering human resources programs	\boxtimes
For administrative matters	\boxtimes	To promote information sharing initiatives	\boxtimes
For litigation	\boxtimes	For criminal law enforcement activities	
For civil enforcement activities		For intelligence activities	
To improve Federal services online	\boxtimes	For employee or customer satisfaction	
For web measurement and customization		For employee or customer satisfaction	\boxtimes
		For web measurement and customization	
technologies (single-session)		. · ·	

Section 5: Use of the Information

5.1 In the context of functional areas (business processes, missions, operations, etc.) supported by the IT system, describe how the PII/BII that is collected, maintained, or disseminated will be used. Indicate if the PII/BII identified in Section 2.1 of this document is in reference to a federal employee/contractor, member of the public, foreign national, visitor or other (specify).

SIMS stored data is based upon the application/system that is using SIMS for data storage. The information stored in SIMS is collected and utilized by USPTO application systems. SIMS does not collect PII but it is a	
back-end storage system that houses the information.	

Section 6: Information Sharing and Access

6.1 Indicate with whom the bureau intends to share the PII/BII in the IT system and how the PII/BII will be shared. (*Check all that apply.*)

Recipient	How Information will be Shared			
Recipient	Case-by-Case	Bulk Transfer	Direct Access	
Within the bureau	\boxtimes	\boxtimes	\boxtimes	
DOC bureaus				
Federal agencies				
State, local, tribal gov't agencies				
Public				
Private sector	\boxtimes	\boxtimes		
Foreign governments				
Foreign entities				
Other (specify):				

6.2		Indicate whether the IT system connects with or receives information from any other I's systems authorized to process PII and/or BII.	Γ
	\boxtimes	Yes, this IT system connects with or receives information from another IT system(s) authorized to process PII and/or BII. Provide the name of the IT system and describe the technical controls which prevent PII/BII leakage: Yes, this IT system connects with or receives information from another IT system(s) authorized to process PII and/or BII. Provide the name of the IT system and describe the technical controls which prevent PII/BII leakage: • Corporate Administrative Office System (CAOS) • Consolidated Financial System (CFS) • Enterprise Software Services (ESS) • Personal Identity verification System Card Management System (HSPD-12/PIVS/CMS) • Information Dissemination Support System (IDSS) • Intellectual Property Leadership Management System (IPLMSS) • Patent Capture and Application Processing System – Examination Support (PCAPS-ES) • Patent Capture and Application Processing System – Capture and Initial Processing (PCAPS-Patent Search System – Primary Search and Retrieval (PSS-PS) • Patent Search System – Primary Search and Retrieval (PSS-PS) • Patent Search System – Specialized Search and Retrieval (PSS-SS) • Revenue Accounting and Management System (TPS-ES) • Trademark Processing System – External System (TPS-ES) • Trademark Processing System – Internal System (TPS-IS) SIMS is on the USPTO network and adheres to the technical controls which are utilized by USPTO are outlined in the USPTO IT Security Handbook. SIMS is configured to protect data at rest (SC-28) through the separation of data streams across the arrays; thus, without knowledge of how the data has been sequenced, the information is unintelligible. Since data is located across multiple arrays, it lessens the of data loss.	nd Jugh
		No, this IT system does not connect with or receive information from another IT system(s) authorized process PII and/or BII.	to
6.3		Identify the class of users who will have access to the IT system and the PII/BII. (Che all that apply.)	ck
(Class	s of Users	
C	ene	eral Public Government Employees	\boxtimes
C	ont	ractors $oxed{oxed}$	
_		r (specify):	

Section 7: Notice and Consent

☐ The PII/BII in the system will not be shared.

7.1 Indicate whether individuals will be notified if their PII/BII is collected, maintained, or disseminated by the system. (*Check all that apply.*)

Yes, notice is provided pursuant to a syst discussed in Section 9.	tem of records notice published in the Federal Register and
Yes, notice is provided by a Privacy Act and/or privacy policy can be found at:	statement and/or privacy policy. The Privacy Act statement
Yes, notice is provided by other means.	Specify how: SIMS houses the data that is stored via other application information systems within USPTO. These other systems provide this functionality for the data that is being stored. SIMS has no authorization to disseminate any type of information since that information is owned by the Application. Each of the systems housing information in SIMS provides individuals with notification on the front-end. SIMS is the enterprise-wide storage solution for USPTO applications. As a result if PII including photographs are collected by a system it is that application's responsibility to have the necessary privacy-related language including notice for giving consent to collect and use photographs.
No, notice is not provided.	Specify why not:

7.2 Indicate whether and how individuals have an opportunity to decline to provide PII/BII.

	Yes, individuals have an opportunity to decline to provide PII/BII.	Specify how:
\boxtimes	No, individuals do not have an opportunity to decline to provide PII/BII.	Specify why not: SIMS houses the data that is stored via other application information systems within USPTO. These other systems provide this functionality for the data that is being stored. SIMS has no authorization to decline any type of information since that information is owned by the Application.

7.3 Indicate whether and how individuals have an opportunity to consent to particular uses of their PII/BII.

	Yes, individuals have an opportunity to	Specify how:
	consent to particular uses of their PII/BII.	
\boxtimes	No, individuals do not have an opportunity to consent to particular uses of their PII/BII.	Specify why not: SIMS houses the data that is stored via other application information systems within USPTO. These other systems provide this functionality for the data that is being stored. SIMS has no authorization to offer individuals the opportunity to consent to any type of information use since that information is owned by the Application.

7.4 Indicate whether and how individuals have an opportunity to review/update PII/BII pertaining to them.

	Yes, individuals have an opportunity to review/update PII/BII pertaining to them.	Specify how:
\boxtimes	No, individuals do not have an opportunity to review/update PII/BII pertaining to them.	Specify why not: SIMS houses the data that is stored via other application information systems within USPTO. These other systems provide this functionality for the data that is being stored. SIMS has no authorization to review/update any type of information since that information is owned by the Application

Section 8: Administrative and Technological Controls

8.1 Indicate the administrative and technological controls for the system. (*Check all that apply.*)

 ✓ All users signed a confidentiality agreement or non-disclosure agreement. ✓ All users are subject to a Code of Conduct that includes the requirement for confidentiality. ✓ Staff (employees and contractors) received training on privacy and confidentiality policies are 	1
	1
Staff (employees and contractors) received training on privacy and confidentiality policies are	1
	nd practices.
☐ Access to the PII/BII is restricted to authorized personnel only.	
Access to the PII/BII is being monitored, tracked, or recorded. Explanation: Implementation of system auditing and monitoring functions is detailed in the S	SIMS SSP.
The information is secured in accordance with FISMA requirements.	
Provide date of most recent Assessment and Authorization (A&A): <u>June 8, 2018</u>	_
☐ This is a new system. The A&A date will be provided when the A&A package is approve	ved.
The Federal Information Processing Standard (FIPS) 199 security impact category for this sy	stem is a
moderate or higher.	
NIST Special Publication (SP) 800-122 and NIST SP 800-53 Revision 4 Appendix J recomm	
security controls for protecting PII/BII are in place and functioning as intended; or have an approximately security controls for protecting PII/BII are in place and functioning as intended; or have an approximately security controls for protecting PII/BII are in place and functioning as intended; or have an approximately security controls for protecting PII/BII are in place and functioning as intended; or have an approximately security control of the protecting PII/BII are in place and functioning as intended; or have an approximately security s	pproved Plan
of Action and Milestones (POAM).	
Contractors that have access to the system are subject to information security provisions in the	neir contracts
required by DOC policy.	
☐ Contracts with customers establish ownership rights over data including PII/BII.	
Acceptance of liability for exposure of PII/BII is clearly defined in agreements with custome.	rs.
☐ Other (specify):	

8	2	Provide a general description of the technologies used to protect PII/BII on the IT system

SIMS protects information and retains it within the system according to USPTO requirements and federal law. By default, data is written throughout the set of data drives within the storage array. Since data is located across multiple arrays, it lessens the risk of data loss. There is a different key for each drive in the storage array. The process occurs on the hardware, ensuring there is no possible way to reconstruct the specific data from a pattern of data scripting on multiple drives. Only administrators have access to the information, there are no user accounts on the system.

Restricting boundary traffic to SIMS infrastructure within managed interfaces and prohibiting external malicious traffic are the responsibility of the USPTO network infrastructure. They employ managed interfaces employing boundary protection devices including proxies, gateways, routers, firewalls, guards, or encrypted tunnels arranged in effective security architecture (e.g., routers protecting firewalls and application gateways residing on a protected sub-network referred to as a demilitarized zone or DMZ). This configuration protects the system from basic attacks like tear-drop, syn flood, smurf flood, ping flood and fraggle.

Section 9: Privacy Act

9.1 Indicate whether a system of records is being created under the Privacy Act, 5 U.S.C. § 552a. (A new system of records notice (SORN) is required if the system is not covered by an existing SORN).

As per the Privacy Act of 1974, "the term 'system of records' means a group of any records under the control of any agency from which information is retrieved by the name of the individual or by some identifying number, symbol, or other identifying particular assigned to the individual."

	Yes, this system is covered by an existing system of records notice (SORN).	
	Provide the SORN name and number (list all that apply):	
	Yes, a SORN has been submitted to the Department for approval on (date).	
\boxtimes	No, a SORN is not being created.	
	SIMS simply stores data being used by other application information systems. Any record creation is the	
	responsibility of the application information systems collecting and storing the information on SIMS.	

Section 10: Retention of Information

10.1 Indicate whether these records are covered by an approved records control schedule and monitored for compliance. (*Check all that apply.*)

\boxtimes	There is an approved record control schedule. Provide the name of the record control schedule: The record control schedule is the responsibility of the application information system collecting the information. Refer to the application PIAs for more detail.
	No, there is not an approved record control schedule. Provide the stage in which the project is in developing and submitting a records control schedule:

\boxtimes	Yes, retention is monitored for compliance to the schedule.	
	No, retention is not monitored for compliance to the schedule. Provide explanation:	

10.2 Indicate the disposal method of the PII/BII. (Check all that apply.)

Disposal		
Shredding	Overwriting	\boxtimes
Degaussing	Deleting	\boxtimes
Other (specify):		

Section 11: NIST Special Publication 800-122 PII Confidentiality Impact Levels

11.1 Indicate the potential impact that could result to the subject individuals and/or the organization if PII were inappropriately accessed, used, or disclosed.

	Low – the loss of confidentiality, integrity, or availability could be expected to have a limited adverse
	effect on organizational operations, organizational assets, or individuals.
	Moderate – the loss of confidentiality, integrity, or availability could be expected to have a serious
	adverse effect on organizational operations, organizational assets, or individuals.
\boxtimes	High – the loss of confidentiality, integrity, or availability could be expected to have a severe or
	catastrophic adverse effect on organizational operations, organizational assets, or individuals.

11.2 Indicate which factors were used to determine the above PII confidentiality impact levels. (*Check all that apply.*)

\boxtimes	Identifiability	Provide explanation: Required credentials to identify the user
		when logging into storage.
	Quantity of PII	Provide explanation: PII that might be stored by the Application
\boxtimes		System. SIMS stores large quantities of data that may contain PII
		from across the USPTO network.
	Data Field Sensitivity	Provide explanation: PII or BII that might be stored by the
		Application System on the SIMS infrastructure.
	Context of Use	Provide explanation: PII or BII that might be stored by the
		Application System on the SIMS infrastructure.
	Obligation to Protect Confidentiality	Provide explanation: Sensitive data is located across different
		sections of the array and unintelligible without knowledge of all
		these locations. Since data is located across multiple arrays, it
		lessens the risk of data loss. As a repository for information from
		across the USPTO network, SIMS must ensure only authorized
		systems and individuals have access to their information.
	Access to and Location of PII	Provide explanation: Data that may be used, stored, and
		transmitted by the Application Systems is centrally stored by
\boxtimes		SIMS. SIMS must ensure that only authorized systems and
		individuals have access to their data from this central storage
		system.

	\boxtimes	Other:	Provide explanation: System applications are responsible for determining the confidentiality impact levels collected, maintained, or disseminated by SIMS.	
S	Section 12: Analysis			
_	12.1 Indicate whether the conduct of this PIA results in any required business process changes.			
		Yes, the conduct of this PIA results in Explanation:	required business process changes.	
	\boxtimes	No, the conduct of this PIA does not re	esult in any required business process changes.	
12.2 Indicate whether the conduct of this PIA results in any required technology changes.				
		Yes, the conduct of this PIA results in Explanation:	required technology changes.	

No, the conduct of this PIA does not result in any required technology changes.