



Privacy Impact Assessment Update  
for the

# S&T Research Projects Involving Volunteers

**DHS/S&T/PIA-020**

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## Abstract

An integral part of the Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) mission is to conduct research, development, testing, and evaluation (RDT&E) on technologies or topics related to improving homeland security and combating terrorism. Some S&T RDT&E activities use volunteers to test, evaluate, provide feedback, or otherwise collect data on certain research topics, technologies, equipment, and capabilities related to S&T's mission. Volunteer RDT&E activities require the collection of a range of information from volunteers including work experience, biographic data and images. RDT&E activities will vary in the types and breadth of data elements and information collected from volunteers. S&T is conducting this Privacy Impact Assessment (PIA) to establish protections for all volunteer S&T RDT&E activities. Volunteer RDT&E activities that are covered by the PIA are listed in the appendix, updated periodically.

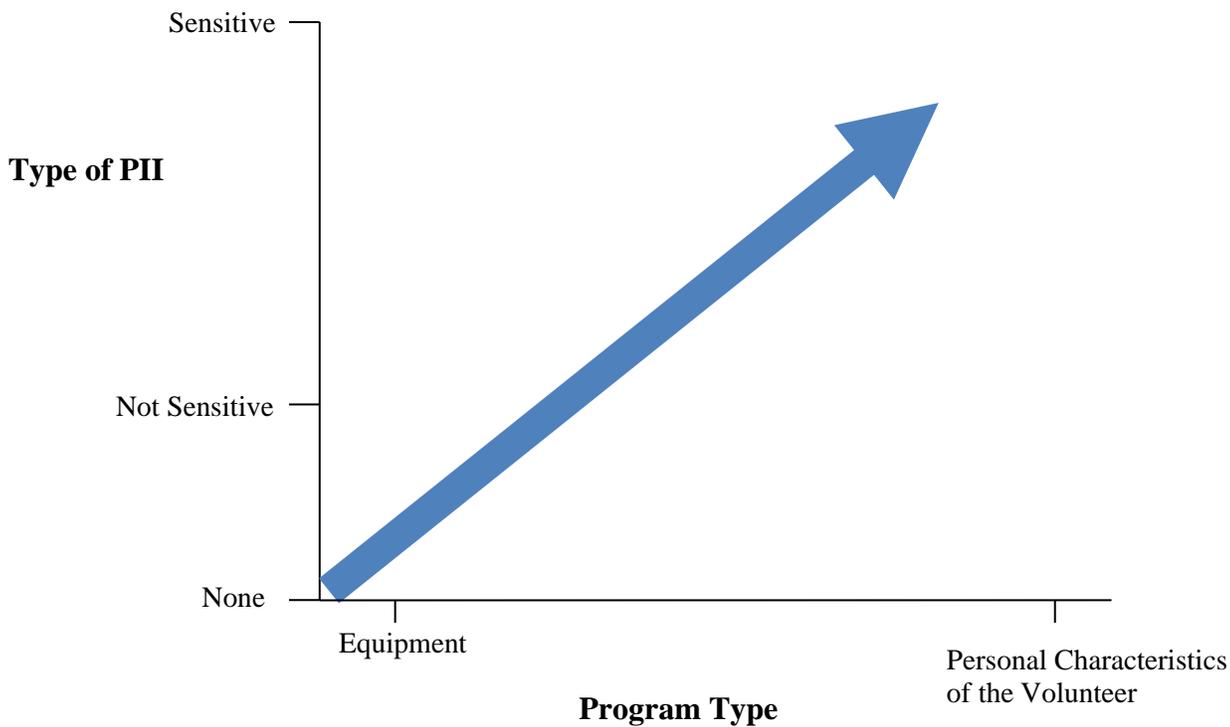
## Overview

S&T's mission is to improve homeland security by providing state-of-the-art technology that helps DHS achieve its goals. One of the ways S&T accomplishes its mission is by evaluating the performance and utility of a homeland security technology, equipment, or capability in a laboratory or simulated operational setting using research volunteers. Other activities that S&T supports are basic research projects conducted to test or verify hypotheses, theories, or other topics related to homeland security. From testing and evaluation activities to basic research projects, S&T may require the use of and collection of data from human subject volunteers.

S&T funds through contracts or research/testing teams (hereby referred to as contracted researchers) to conduct the RDT&E activity, whether it is a testing and evaluation project or basic research project. At the conclusion of the RDT&E activities, contracted researchers will produce a final report for S&T containing research analyses and conclusions based on the RDT&E activities. Contracted researchers will destroy all the data collected at the conclusion of the project, after the final report is compiled. The final report will only contain aggregate data.

To evaluate a technology or to conduct basic research, projects require differing amounts of information from volunteers — from as little as their name to more extensive specifics such as their medical history. A continuum can be used to show how and why varying amounts of information collected from the volunteers correlates to the level of privacy risks towards a person. At one end of the continuum, the RDT&E activity is focused on the effectiveness or utility of a piece of equipment or technology, which may include a first responder location device, protective gear and apparel, or a radiation detector for example. The focus of the RDT&E activity is solely on the equipment, not on the person using the equipment, therefore only basic contact information about a person may be required so researchers can get in touch with the volunteer to coordinate the tests. At the other end of the continuum, the RDT&E activity may be focused on indicators or signals collected off an individual's body or person and the project is focused on what that individual is feeling, thinking, and responding to in certain instances.

Figure A illustrates the continuum of the focus of the RDT&E activity and how it relates to risk to a volunteer's privacy:



An example of an RDT&E activity at one end of the continuum (minimal risk to privacy) is testing equipment like a boot that enables a firefighter to quickly and safely run wet staircases or provide the best heat resistance; the results only show the performance of the boot and conclude which boot is most effective and why. During this testing and evaluation activity on the boots, the researchers will take into consideration the volunteers' input and feedback, along with other information, including limited biographic information (e.g., work-related experience), to conduct their analysis on the utility and effectiveness of the boot. The analysis of the results will not include data on the firefighter or data identifying the firefighter in any way. The data will focus on the volunteers' opinions of the boot, not on their identity. Photographs or video/audio recordings may be captured to further demonstrate how these boots function in a simulated operational environment.

The opposite end of the continuum (higher risk to privacy) includes projects where contracted researchers will need to know an individual's heart rate or blood pressure and ask personal questions (e.g., medical history) about the volunteer. An example is conducting research to determine how various factors, including biological traits (e.g., fatigue) impact baggage screener performance. Volunteers for this particular example may include professional baggage screeners. The researchers may collect other information like electrical brain activity or eye movement to determine how these traits, relevant to fatigue, can impair alertness and vigilance. Supplemental information, such as medical history (including smoking habits), may be collected to further support analysis of this data. This data is related to each volunteer's performance in a laboratory or simulated setting and enables researchers to conduct their cause and effect analysis to address the research question.



Testing and evaluation of biometric technologies is an example of the types of research activities that fall in the middle of the continuum. The focus of the RDT&E activity is still on the effectiveness and utility of the technology; however, to conduct a meaningful test, researchers will have to collect biometric information from volunteers. While the biometric data will only be analyzed to determine the use of the technology, the collection of biometric information raises some privacy risks.

For all of the RDT&E activities covered under this PIA, the identification of the person is not important to the project. The collection of information related to the volunteer's identity is only needed for paperwork requirements, records, and payment. Additionally, this information is not linked to the research data and will not be included in any analysis of the data. Furthermore, contracted researchers must obtain signed informed consent forms from all volunteers prior to any data collection. (Please see item 4 below for additional information on forms).

The Privacy Office will analyze and assess RDT&E activities based on the information and data elements collected from the volunteer with the associated privacy protections used to mitigate the privacy risks and determine where it falls on the continuum.

The Privacy Office will use the Privacy Threshold Assessment (PTA) process to evaluate each volunteer project to determine if the project is covered by this PIA or whether a separate PIA is required. The Privacy Office will consider how the RDT&E activity impacts the privacy of the volunteers or potentially, the public, be it physical, biographical or identity related.

This PIA covers the collection of information related to the research volunteer including but not limited to, biographical information such as the volunteer's name, height, age, vision, biological traits, location, biometrics, facial images, discipline field (i.e., fire, emergency medical service (EMS), law enforcement), and years of related work experience, retired or active status; survey and interview information to obtain feedback in test or research settings; contact information to coordinate and schedule tests with the volunteers; and photographs and video recordings that capture audio and images of volunteers. This information enables contracted researchers to conduct analyses based on a broad range of physical and professional characteristics.

All projects covered by this PIA must meet the following requirements:

1. Members of the public (i.e., non volunteers) will not be the subject of the testing activities.
2. If there is any accidental or incidental collection of PII of non-volunteers like the capture of a person's face from an area surveillance camera, then it will be minimized by blurring out the faces of any non-volunteer passersby.
3. If a camera is used notice will be posted to alert the public and a location will be chosen that is easily partitioned from the public.
4. The research team obtains the signed, written informed consent of each participant explaining the particular research activity, the information to be collected and how that information will be used. The informed consent will also describe what information will be in the final report, who will write the report and how long the report could be retained.



5. S&T will only receive a final report containing aggregate data and photos. S&T will not see or receive the data in any other format than a final report.
6. The final report to S&T may include photographs or video recordings of the tests or volunteers. The contracted researchers use the photograph and video recordings to demonstrate how to use technology, equipment or capability in operational or research settings. For example, if the testing is for a piece of equipment like a special helmet a firefighter might wear then photographs and or video will show the correct way to wear the equipment. The photos or videos further support determinations regarding the value of the testing and evaluation, and determine the readiness of the technology for deployment or next phase of a research program. In such cases, no personal identifiers will be used to link the images or videos to the individual volunteer. When possible the focus of the images or video will be of the equipment, technology or topic and not of the identity of the volunteer.
7. The contracted researchers will destroy all data containing PII when the analyses are complete and the final report is released to S&T. Only anonymized or de-identified data will be retained after the completion of the final report.

Only programs that adhere to these standards will be covered by this PIA and listed in the appendix. All other research programs will require a separate PIA.

## Section 1.0 Authorities and Other Requirements

### 1.1 What specific legal authorities and/or agreements permit and define the collection of information by the project in question?

The Homeland Security Act of 2002 [Public Law 1007-296, §302(4)] authorizes the Science and Technology Directorate to conduct “basic and applied research, development, demonstration, testing, and evaluation activities that are relevant to any or all elements of the Department, through both intramural and extramural programs.” In exercising its responsibility under the Homeland Security Act, S&T is authorized to collect information, as appropriate, to support R&D related to improving the security of the homeland.

Where research includes human subjects, S&T complies with the provisions of DHS Management Directive 026-04, “Protection of Human Subjects,” which adopts the regulations set forth in 45 Code of Federal Regulations 46 and establishes Departmental policy for the protection of human subjects in research.

This project will collect data pertaining to individuals who volunteer to participate in S&T funded RDT&E activities when those activities are conducted to support the Department and/or S&T customer’s missions and needs.

### 1.2 What Privacy Act System of Records Notice(s) (SORN(s)) apply to the information?



The S&T SORN DHS-ST-001 Research, Test, Development and Evaluation Records, found at: <http://edocket.access.gpo.gov/2008/E8-29059.htm>.

### **1.3 Has a system security plan been completed for the information system(s) supporting the project?**

S&T in conjunction with the contracted research team will complete a system security plan before research begins, if applicable.

When there is a collaborative effort with other DHS components, S&T and the other components will complete a system security plan, if applicable. S&T will not receive or have access to any of the information collected or created for the activities; S&T will receive a final report which contains only aggregate data.

### **1.4 Does a records retention schedule approved by the National Archives and Records Administration (NARA) exist?**

S&T projects covered by this PIA will consult with the S&T Records Retention Officer to determine the appropriate retention for the final report. Retention schedules will reflect the timeline of the experiment and the need to keep data up to date and accurate. It is recommended that reports be reviewed every 3 years and discarded if no longer applicable.

Projects covered by this PIA are listed in the appendix and updated periodically.

### **1.5 If the information is covered by the Paperwork Reduction Act (PRA), provide the OMB Control number and the agency number for the collection. If there are multiple forms, include a list in an appendix.**

If the information that is being collected by S&T falls under the purview of the Paperwork Reduction Act (PRA) requirements, then it is incumbent upon the S&T program manager to coordinate with the S&T PRA Office to complete the PRA documentation. If the information collected does not fall under the purview of the PRA, no additional action is needed by the S&T program manager.

## **Section 2.0 Characterization of the Information**

The following questions are intended to define the scope of the information requested and/or collected as well as reasons for its collection.

### **2.1 Identify the information the project collects, uses, disseminates, or maintains.**

Research projects involving volunteers collect PII and relevant biographic data about the volunteers. This data may include but is not limited to: volunteer's name, height, age, vision, location, biological traits, biometrics, facial images, discipline field (i.e., fire, emergency medical service (EMS),



law enforcement), and years of related work experience, retired or active status; survey and interview information to obtain feedback in test settings; contact information to coordinate and schedule tests with the volunteers; and photographs and video recordings that capture audio and images of volunteers. The project will collect PII about the volunteers only.

The data S&T receives about the volunteers exists in aggregate form only and is contained in a report. The contracted researchers destroy all data containing PII once the final report is completed.

The project also collects non-personally identifiable information regarding research topics (e.g., the machine, equipment or instruments used in the research). This information might include data read outs, assessments of advantages or failures, video of the equipment in use, images, temperature, structural integrity and other machine related data.

## **2.2 What are the sources of the information and how is the information collected for the project?**

Information is collected directly from the volunteers involved in the project. Individuals provide their information voluntarily through surveys, interviews, and consent forms.

Information is collected by the S&T contracted researchers who perform the RDT&E activity. S&T will not collect any information; S&T only receives a final report at the conclusion of the activity, which contains only aggregate data.

## **2.3 Does the project use information from commercial sources or publicly available data? If so, explain why and how this information is used.**

No. Research projects covered by this PIA do not use commercial or publicly available data as it relates to the volunteers.

## **2.4 Discuss how accuracy of the data is ensured.**

Information is collected directly from individuals who volunteer information and is assumed to be accurate.

## **2.5 Privacy Impact Analysis: Related to Characterization of the Information**

**Privacy Risk:** More information than necessary and sensitive information like Social Security number will be collected from volunteers.

**Mitigation:** Only the information necessary to actually perform and administer the research will be collected. As part of the development of the research, S&T Privacy and DHS Privacy Office will review the data elements documented in the PTA. The contracted researchers will explain the specifics of the data collection in the informed consent forms given to volunteers prior to beginning the program. Additionally, the contracted researchers will explain what data will be included in the final report and in what form.



**Privacy Risk:** Information from individuals who are not volunteers (anyone who has not signed the informed consent) may be collected.

**Mitigation:** The research team will review the photos and video collected and minimize the data using techniques like blurring to reduce collection of non-volunteer images. Data collection will be minimized since S&T will receive only a final report which will contain only aggregate data.

## Section 3.0 Uses of the Information

The following questions require a clear description of the project's use of information.

### 3.1 Describe how and why the project uses the information.

S&T contracted researchers will collect the information to enable them to evaluate the performance of a device or analyze a hypothesis or theory across a broad range of physical and professional (or other relevant) characteristics. The video and audio capture also demonstrates how equipment or technologies are properly used and may support further analyses.

Data like years of related work experience of a volunteer, employment position and number of years in a particular position could be a factor in determining the success of the tested product. For example, if the testing is for a piece of equipment like a special helmet a firefighter might wear then photographs and or video will show the correct way to wear the equipment. The photos or videos further support determinations regarding the value of the testing, and determine the readiness of the technology for deployment. When possible the focus of the images or video will be of the equipment and not of the face of the volunteer.

Once the RDT&E activity is completed the data is consolidated by the researchers into a final report that is given to S&T. After the report is finished all data containing PII is deleted; the final report that S&T receives contains only aggregate data.

The description of the data in the report will be included in the informed consent notice given to volunteers before the beginning of the RDT&E activity. The data in the report will be stripped of identifying information but remain useful toward the research. For example, data regarding the research will not be reported in single numbers but in an aggregate form. So if there is only one male volunteer in the research team then his information will be grouped with the others in the report because otherwise his identity could easily be determined.

### 3.2 Does the project use technology to conduct electronic searches, queries, or analyses in an electronic database to discover or locate a predictive pattern or an anomaly? If so, state how DHS plans to use such results.

No.



### **3.3 Are there other components with assigned roles and responsibilities within the system?**

No.

### **3.4 Privacy Impact Analysis: Related to the Uses of Information**

**Privacy Risk:** Whenever PII is collected there is a risk the information may be used in an unauthorized way or collect information unrelated to conducting the research.

**Mitigation:** The contracted researchers will only use the data to analyze and evaluate the project and prepare the final report. In the informed consent forms issued to volunteers the contracted researchers will explain how the information will be used, what information will be collected and what data will be placed in the final report.

The researchers will receive training on how to handle PII and steps to mitigate the risk. S&T will receive a final report containing only aggregate data and all data containing PII will be deleted upon completion of the report.

## **Section 4.0 Notice**

The following questions seek information about the project's notice to the individual about the information collected, the right to consent to uses of said information, and the right to decline to provide information.

### **4.1 How does the project provide individuals notice prior to the collection of information? If notice is not provided, explain why not.**

Notice is provided to all of the volunteers in written form which they are required to sign before the data collection begins and through informed consent forms. Each collection of data is immediately preceded by notice regarding the scope and purpose of collecting the information. All consent forms have Privacy Act Statements (these notices are required under 5 U.S.C. § 552a(e)(3)) and at the time of collection these provide individuals with notice of the voluntary nature of the collection and the authority to collect the information. Please see Appendix B for sample Privacy Act Statement.

### **4.2 What opportunities are available for individuals to consent to uses, decline to provide information, or opt out of the project?**

Volunteers sign informed consent forms before participating in the RDT&E activity. Individuals are not required to provide their information and are participating on a voluntary basis. However, if they choose to not provide complete information as requested, they may not be able to participate in the research.



## 4.3 Privacy Impact Analysis: Related to Notice

**Privacy Risk:** Non-volunteers or passersby may be mistakenly caught on video or in photos if the research takes place on public property.

**Mitigation:** Most of the research will occur on private property, in laboratories or simulated test settings, and away from the public. If the public is nearby then privacy minimization techniques will be used including blurring images and posting notices to inform the public of the experiments. The testing team will notify all volunteers of their participation in the testing activities either orally or in writing, or both so there will be little risk of individuals unaware of collection.

**Privacy Risk:** Incomplete notice to volunteers.

**Mitigation:** The program will submit copies of their informed consent forms for review by the Privacy Office.

## Section 5.0 Data Retention by the project

The following questions are intended to outline how long the project retains the information after the initial collection.

### 5.1 Explain how long and for what reason the information is retained.

The research team retains the information only for as long as it takes to conduct the analysis and complete the final report. PII will be deleted from the data as soon as the report is finished. De-identified or anonymized data may be maintained indefinitely as reference material or to support future research.

S&T will retain the report, containing testing results and potentially videos and photographs, in accordance to the NARA approved schedule. It is recommended that reports be reviewed every three years and discarded if no longer applicable.

All projects covered under this PIA are listed in the appendix and updated periodically.

### 5.2 Privacy Impact Analysis: Related to Retention

**Privacy Risk:** Data is out of date.

**Mitigation:** All appropriate physical and technical safeguards will be used to secure the data. This will include locking all information in a safe when not used and using firewalls and encryption techniques to protect any information stored on electronic devices. PII in the data will be deleted as soon as the report is finished.

## Section 6.0 Information Sharing

The following questions are intended to describe the scope of the project information sharing external to the Department. External sharing encompasses sharing with other federal, state and local government, and private sector entities.



## **6.1 Is information shared outside of DHS as part of the normal agency operations? If so, identify the organization(s) and how the information is accessed and how it is to be used.**

Only the final report will be shared outside of DHS. The final report is shared with interested parties, especially those who may acquire or deploy the tested technology, equipment, or capability such as local first responders. These parties may find the results of the testing useful when considering what equipment will work best for their circumstances. The final report received by these groups will contain only aggregate data.

S&T contracted researchers will not share any personal, demographic, biographic, interview, and survey information with any external organizations. Instead, they will produce a final report, which will contain only aggregate data.

## **6.2 Describe how the external sharing noted in 6.1 is compatible with the SORN noted in 1.2.**

The final report will contain only aggregate data which results in no sharing of data outside of DHS.

## **6.3 Does the project place limitations on re-dissemination?**

There is no limitation on re-dissemination of the final report since there will be no identifying data in the final report.

## **6.4 Describe how the project maintains a record of any disclosures outside of the Department.**

The final report is released outside the department to parties who may be interested in the results of the RDT&E activities. The report will be shared with first responders and others in the disaster relief community.

## **6.5 Privacy Impact Analysis: Related to Information Sharing**

**Privacy Risk:** Volunteers could be identified when information is shared.

**Mitigation:** The contracted researchers will ensure that images or videos included in the final report will not include names or any identifying features. When possible, the images will be only of the equipment and not capture the face. If any facial features are captured the image will be blurred.

## **Section 7.0 Redress**

The following questions seek information about processes in place for individuals to seek redress which include accessing to records about themselves, ensuring the accuracy of the information collected about them, filing complaints.



## 7.1 What are the procedures that allow individuals to access their information?

The contracted researchers will allow the volunteers access to the information the volunteers provided. Volunteers can gain access to information by contacting the program manager and/or the testing staff. The testing team will notify volunteers of such mechanisms during the initial briefing, prior to the start of the project.

The contracted researchers will provide a Privacy Act (e)(3) statement on every informed consent form.

Individuals may request access to information that may have been retained pursuant to the applicable provisions of the Privacy Act and the DHS Privacy Act regulation at 6 CFR Section 5.21 by submitting a Freedom of Information Act / Privacy Act (FOIA/PA) request to S&T in writing by mail to the following address:

S&T FOIA Coordinator, Mail Stop: 2100  
Department of Homeland Security  
245 Murray Lane, SW  
Washington, DC 20528

The FOIA / PA request must contain the following information: Full name, current address, date and place of birth, telephone number, and email address (optional). Privacy Act requesters must either provide a notarized and signed request or sign the request pursuant to penalty of perjury, 28 U.S.C. § 1746.

## 7.2 What procedures are in place to allow the subject individual to correct inaccurate or erroneous information?

Volunteers will have the opportunity to correct any information on the informed consent form or surveys prior to submission. Also, after submission, volunteers may contact program staff to change any data or have it deleted.

## 7.3 How does the project notify individuals about the procedures for correcting their information?

The contracted researchers will notify volunteers of procedures for correcting their information during the initial briefing, prior to starting the project. The researchers will collect information directly from the volunteer research participants and provide the individuals the opportunity to correct inaccurate or erroneous information at the time of collection. The informed consent forms will include information on how to correct or access their information.

## 7.4 Privacy Impact Analysis: Related to Redress

**Privacy Risk:** Volunteers may give incorrect data and want to correct it later.



**Mitigation:** The contracted researchers will notify volunteers of procedures for correcting their information during the initial briefing, prior to starting the project. Individuals will be provided the opportunity to correct inaccurate or erroneous information at any time during the project. Because the projects are for RDT&E purposes, inaccurate information will have no impact on the volunteer.

## Section 8.0 Auditing and Accountability

The following questions are intended to describe technical and policy based safeguards and security measures.

### 8.1 How does the project ensure that the information is used in accordance with stated practices in this PIA?

The contracted researchers will conduct regular audits and employ technical safeguards on computer systems where the volunteers' information is kept, which are intended to prevent the misuse of data. Depending on the researchers performing the test, some or all of the safeguards may be in place. S&T will work with the contractors to ensure those responsible for securing the data have adequate controls in place. Any additional controls will be documented in the PTA.

These measures may include, but are not limited to:

1. An internal firewall protecting the network to which the workstations are connected.
2. A secondary firewall protecting all servers, which include email servers and departmental servers.
3. Multi-tiered antivirus, antimalware, and anti-spam software and program packages to protect the network.
4. The testing team may audit the network, and provide alerts if it identifies questionable activity. They may also initiate a manual process to monitor and investigate any suspicious activity.
5. Network security procedures and practices may be audited each year by an external agency.

The auditing mechanisms that are used during the RDT&E activities may depend on the researchers executing the tests; there may be variations of the identified safeguards and audit capabilities in place. S&T will ensure that the safeguards listed above are recognized as a minimum requirement for all projects.

### 8.2 Describe what privacy training is provided to users either generally or specifically relevant to the project.

All S&T and contracted researchers working on these projects will receive initial and annual privacy training. S&T provides web-based privacy awareness training to all members of a testing team involved in the project. The training will provide guidance to the testing teams on how to safeguard, store, and handle PII properly in their possession.



### **8.3 What procedures are in place to determine which users may access the information and how does the project determine who has access?**

Only authorized members of the research team working directly on a specific project will have access to the system. One or more layers of access control (badge, ID number/PIN number, file encryption and video surveillance system) will protect the workstation location. Encryption, username and password privileges will protect the computer and network. Access to documents requires file-level permission.

### **8.4 How does the project review and approve information sharing agreements, MOUs, new uses of the information, new access to the system by organizations within DHS and outside?**

All reports will be reviewed periodically for accuracy and relevance. All data containing PII leading up to the report will be deleted and destroyed by the contracted researchers.

## **Responsible Officials**

Christopher Lee

Department of Homeland Security

## **Approval Signature**

Original signed copy on file with the DHS Privacy Office

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Mary Ellen Callahan

Chief Privacy Officer

Department of Homeland Security



## Appendix A

### Systems Covered by the S&T Volunteers PIA

- First Responder Technologies (R-Tech)

The R-Tech program tests personal protective equipment (PPE), such as gloves and helmets that first responders don for protection in emergency situations. S&T will retain information until a final report is compiled, which takes approximately one year. Once final analyses and evaluations are made and published, the testing team will destroy all PII. R-Tech will not create or set up any IT systems during any of the research projects so no system security plan has been completed. R-Tech will share final reports with the first responder community through the R-Tech FirstResponder.gov website, which has a valid authority to operate. Project Manager: Sonja Rodriguez, 202-254-5867. May 13, 2010.

- System Assessment and Validation for Emergency Responders (SAVER) program

The SAVER program conducts objective testing and evaluation activities on commercially available first responder equipment to better inform procurement decisions of the emergency responder community. The Paperwork Reduction Act (PRA) does not apply to SAVER since the program uses nine or less volunteers. The data will be retained for 8-10 months and then destroyed upon completion of the final report. Additionally, there is no security plan because SAVER does not build or integrate IT infrastructure but there are protections such as encryption and limited access established to protect the data. Project Manager: John Pennella, 202-254-6907. June 17, 2010.

- SAVER Surveillance
- SAVER Barriers
- SAVER High Sensitivity Radionuclide Detectors
- SAVER Outer Work Gloves
- SAVER Tactical/Climbing Protective Boots
- SAVER Personal Alarming Radiation Detectors (Gamma and Neutron)
- SAVER Mobile Command Vehicles
- SAVER Remotely Piloted Vehicles
- SAVER Credentialing Systems
- SAVER Data Fusion Synthesis
- SAVER Laser Range Finder
- SAVER Fiber Optic Kit
- SAVER Spotting Scopes
- SAVER Law Enforcement Surveillance Wearable Cameras
- SAVER Underwater Body Bags



- SAVER Surface Swift Water Dry Suits
- SAVER Alert Notification
- Person-borne improvised explosive devices (PIEDs)

The PIED program researches the use of multi-spectral and Millimeter Wave (MMW) imaging and acoustic technologies to aid in the detection of Person-borne improvised explosive devices (PIEDs). Volunteers will be used only in a laboratory setting and the images produced contain no PII. Project Manager: Thomas Coty, 202-254-5857. July 15, 2010.

- Nonlinear Acoustics

Nonlinear Acoustics will research and develop a non-imaging technology that uses acoustics, or sound waves, to detect concealed threats (handguns, IEDs, etc.) on a person. The technology uses the interaction of sound waves with a person, his/her clothing, and any object that may be concealed to determine whether there are any unexpected objects or anomalies present. All volunteers will receive notice and sign informed consent forms prior to any data collection. The images produced contain no PII and S&T will receive a final report and periodic updates regarding the technology and research results. Project Manager: Thomas Coty, 202-254-5857. September 24, 2010.

- First Responder Coping Mechanism for PTSD

The purpose of this multi-stage project is to identify and understand coping mechanisms among First Responders against the negative effects of PTSD. All participation is voluntary, and throughout all stages of the study, the research team provides informed consent forms to volunteers and follows confidentiality procedures. This project collects information from First Responders on issues related to resilience, PTSD, and job-related stress as well as coping mechanisms, community factors, and specific personal characteristics and experiences that may impact resilience. In addition, socio-demographic variables (including gender, age, current marital status, number of dependent children, race/ethnicity, occupation, etc.) are collected. Although the research team conducting this project collects PII, individuals' names are not included in either the analysis databases or any resulting reports. Further, if the research team is concerned that an individual may be re-identified based on his/her unique demographic characteristics, they do not specify these characteristics in the report. Neither S&T nor any other U.S. government office receives or has access to any PII during the course of the project. Project Manager: Allison G. Smith, 202-254-2357. December 29, 2010.

- Managed Proactive Unattended Law Enforcement Sensor (MPULSe) Trigger

S&T is working with U.S. Immigration and Customs Enforcement (ICE) to develop and test a surveillance system that only records when a human heartbeat and/or other uniquely human movement is detected. Existing video surveillance technologies generate large volumes of data that are prohibitively expensive to transmit over cellular wireless networks. This project seeks to develop and test potential solutions that require substantially smaller amounts of bandwidth and data storage. DHS S&T is partnering with NASA Jet Propulsion Laboratory (JPL) to develop and test a prototype Managed Proactive Unattended Law Enforcement Sensor (MPULSe) Trigger capability. The prototype trigger will be designed to detect the presence of humans in the field of view of a surveillance system, using heartbeats and possibly other



uniquely human movements. The MPULSE Trigger is not an imaging technology and does not capture visual human features such as facial appearance, eye characteristics, scars, marks, or tattoos. Although heartbeats will be detected by the MPULSE Trigger technology, data collected throughout the course of the project will not include health-related information. Participants in the testing will be S&T employees, ICE agents and employees, and JPL researchers. All participants will be volunteers and will be asked to sign informed Consent Forms prior to data collection. Project Manager: Marilyn Rudzinsky 202-254-2328. October 1, 2015.

- Boston Police Department Active Shooter Technology and Evaluation Exercise

The Boston Police Department is conducting active shooter, suicide bomber, and drone attack response exercises at Fenway Park in Boston, Massachusetts. The scenarios conducted during the event will involve multiple shooters and suspicious packages placed throughout the stadium along with an actor playing a suicide bomber. There will also be a counter unmanned aerial system (C-UAS) demonstration after the active shooter exercise ends. The purpose is to evaluate various technologies under operational conditions for DHS Homeland Security Advanced Research Projects Agency (HSARPA), Explosives Division (EXD), and First Responders Group (FRG), as well as exercise procedures for the Boston Police Department and other agencies when responding to such incidents. Fenway Park and the streets immediately outside the baseball stadium are closed to the public the day of the demonstration. Signs will be posted around the stadium to note exercises are being conducted. For the purpose of the exercise, the system will scan images of individuals participating in the exercise in order to evaluate the effectiveness of the capability. The operators will see a green light if the image scans do not detect weapons or explosives, and a red light if the image scans detect weapons or explosives. No images, names, or addresses will be collected or retained. The unmanned aircraft onboard cameras will only be used for navigation purposes within the baseball stadium. Project Manager: Joe Foster, 202-251-5684. June 8, 2016.

- Automated Target Recognition & Privacy Algorithm Improvement Challenge

S&T and the Transportation Security Administration (TSA) are sponsoring a challenge to encourage the development of algorithms to enhance Automated Target Recognition (ATR) capabilities currently used in TSA body scanning systems. The goal is to use these new target recognition and privacy enhancement algorithms in the next generation of TSA body scanning systems. S&T is providing 1,000 body images from volunteers for this initiative. S&T has a dataset of body images collected from volunteers. The volunteers were informed in-person and in-writing what information was being collected, why the information was being collected, and how the information was being used in Research, Development, Test & Evaluation (RDT&E) activities. All volunteers signed informed consent forms acknowledging collection and use of their body image data. To minimize any risk of re-identification all metadata and identifying information have been removed from the images. For additional protection, S&T and TSA are limiting participation in the initiative to legitimate researchers that have been thoroughly vetted by DHS program staff. No body images from the general public are being used. Project Manager: Dr. John Fortune, 202-254-6622. April 10, 2017.



- Explosives Division General Use of Body Scanner Images for Research and Development Purposes

The DHS Homeland Security Advanced Research Projects Agency (HSARPA) Explosives Division's (EXD) regularly engages in research and development activities to improve the detection of person-borne improvised explosive devices. Many of these activities include the capture and/or processing of images from body scanners for the purpose of technology evaluation, requirements verification, or software development. The body images are being collected are only used to test passenger screening systems. All other PII and related metadata will be scrubbed from the body images before any images are retained. The body images are provided by volunteers who are given proper notice by S&T. Project Manager: Steven Wallen, 202-254-8652. July 10, 2017.

- Transportation Security Laboratory (TSL) Stand-Alone Systems

TSL Stand-Alone systems are required to support the TSL research mission to test and evaluate explosives detection methods, and certify imaging equipment. TSL Stand-Alone systems are vendor supplied systems that connect directly to scientific instruments and appliances such as X-RAY and Computed Tomography (CT) baggage machines, Advance Image Technologies (AIT) passenger screening machines, microscopes, lasers, and infrared (IR) cameras. TSL Stand-Alone systems are setup and configured to perform specific tasks that relate to the detection of explosive or projectile weapons either in luggage or on a person. For AIT scanners, volunteer mock passengers (federal employees, contractors, and sub-contractors) are used and all test items are provided to the mock passengers by the TSL. Contracted mock passengers are acquired through temporary hiring agencies who provide mock-passengers in 4 hour blocks. No PII is collected on the passengers by TSL. All mock passengers used by the TSL are provided verbal and written information about the data collected and the risks of being scanned. The AIT system produces an avatar (ginger bread man figure) for the human screener to view. Both raw images and avatar images are retained by TSL as a reference and to support future tests. No names or other identifying information are stored with the images. Project Manager: Michael Snyder 609-813-2764. August 28, 2018.

- National Urban Security Technology Laboratory (NUSTL) Mobile Device Attribute Verification (MDAV) Technology Demonstration

S&T NUSLT is conducting a technology demonstration to test the MDAV mobile application (app), which is designed to authenticate first responders' credentials using public key encryption on smartphones even when there is no network connectivity. The exercise will demonstrate the MDAV app's capabilities and operational suitability. Participants will provide S&T limited PII when they register (such as name, organization name, title, business address, years of related work experience, discipline field, e-mail address, and phone number). The information is used to track participating volunteers, send Technology Demonstration information, and manage check-in. In addition, photographs and video recordings of the Technology Demonstration may be collected and may be included in project deliverables and outputs, which may be made available on DHS-branded public websites or social media platforms. This event will occur at a closed location entirely within NUSTL's offices. Project Manager: Blaise Linn, 212-206-2767. December 11, 2018.

- Next Generation First Responders (NGFR) Apex Program Integration Demonstrations

The S&T NGFR Apex Program seeks to develop, adopt, and integrate next-generation technologies to



help the nation's first responders become better protected, connected, and fully aware. The NGFR Apex Program tests and evaluates NGFR-developed and industry-provided technologies during technology Integration Demonstrations in which members of the public (primarily first responders) voluntarily participate and directly test technologies in a series of functional controlled tests and evaluations. Participants provide S&T limited PII when they register for an Integration Demonstration (such as name; email address; agency/organization; state of residence; and emergency contact information (optional)). This information is used to track participating volunteers, send communications about the demonstration, and manage check-in. In addition, photographs and video recordings of the Technology Demonstration may be collected and may be included in project deliverables and outputs, which may be made available on DHS-branded public websites or social media platforms.

NGFR Integration Demonstrations test and evaluate a wide-range of first responder technologies. These technologies include on-body and/or handheld sensors (e.g., physiological monitoring, environmental threat detection, indoor tracking), video recording and transmitting devices (e.g., body-worn cameras); and handheld situation awareness displays or devices. NGFR will conduct a number of similar Integration Demonstrations for which this appendix entry will cover. If a new NGFR Integration Demonstrations substantially differs, a new appendix entry will be completed. Project Manager: John Merrill, 202-254-5604.

- Maryland Test Facility operated by Science Applications International Corporation (SAIC)

The S&T Biometric and Identity Technology Center (BI-TC), partners with Science Applications International Corporation (SAIC) Identity and Data Sciences Lab (IDSL) at the Maryland Test Facility (MdTF) to inform research and applications of biometric technology to specific operational use cases across S&T programs, DHS, and the Homeland Security Enterprise (HSE) using SAIC's facilities, systems, and subject matter expertise. Activities at the MdTF, such as identifying and evaluating new technologies resulting from advances in biometric identification, people counting and queue management, wearable computing, augmented/mixed reality, remote identity verification, presentation attack detection, and other complimentary technology may enable DHS to improve the security and speed of traveler screening and inspection. The MdTF only uses and stores (non-DHS) research data to support ongoing analytic efforts including:

- Biometric and associated demographic data that SAIC collects and owns from paid volunteers who have signed an Informed Consent Form that notifies the individual that their information will be used for DHS research.
- Biometric and associated demographic data that SAIC collects and owns from internal team members who have signed an Informed Consent Form that notifies the individual that their information will be used for DHS research; and
- Externally sourced research datasets, such as data sets from academic sources made available for general research use or the National Institute for Standards and Technology (NIST).

The MdTF maintains strict ethical research standards regarding use of external research datasets in any evaluations. External research datasets use ethical standards as follows: research datasets containing biometric samples of living persons must be collected with explicit informed consent and in accordance with the principles laid out in the Belmont Report. An example of a research dataset that adheres to Identity and Data Sciences Lab (IDSL) standards is the Chicago Face Database (<https://chicagofaces.org/>), which was obtained under explicit informed consent from all individuals.



Oversight of MdTF collection and use of Biometric and other associated data is provided by the WGC Institutional Review Board (WGC IRB) under an approved protocol (NEIRB Protocol 00000755). This protocol is on file with DHS S&T's Compliance Assurance Program Office (CAPO) and reviewed annually to ensure compliance with 45 C.F.R. Part 46, the Federal Policy for the Protection of Human Subjects (also known as the Common Rule). The MdTF operates under Federal Wide Assurance Number 00029128 valid through December 17, 2024.

To preserve the anonymity of volunteers, an SAIC subcontractor, Martin Research and Consulting LLC (MRAC), will generate a random MdTF study ID number (e.g., S0001) for each test volunteer enrolled in a research study at MdTF to associate with biometric and demographic data. No external party will be able to use this random study ID number to identify a test volunteer. Only MRAC holds the key linking the MdTF study ID number to an individual's biographic information, and MRAC does not share the key with SAIC, S&T, or any other entity. As a result, no single entity can link an individual's biometric and demographic information with the individual's biographic information.

Prior to each volunteer participant providing informed consent, MRAC staff provide a document to each participant that describes the research protocol, use, and protection of the individual's personally identifiable information (PII) data, any risks associated with the data collection, and the method to withdraw from participation in the study. In addition to the document, a short verbal presentation is provided to review these topics and answer any questions. Participants then meet one-on-one with members of the MRAC staff to review the form and can ask questions prior to signing the informed consent document. During this process, all participants are informed the results of the study in which they are participating may be shared with DHS.

No PII contained in MdTF-collected data will be shared with S&T or DHS. MdTF will only share reports and evaluations of biometrics research performed using research data. These reports may contain sample images intended to convey concepts or challenges; any persons whose likeness appears in these reports will have provided explicit, written permission to use their images for such purposes. As previously stated, S&T will use the products of this research to identify and inform implementation of new technologies resulting from advances in biometric identification, people counting and queue management, wearable computing, augmented/mixed reality, and other technologies that may enable DHS to improve the security and speed of traveler screening and inspection. Project Manager Arun Vemury, 202-254-6830.



## Appendix B

### Sample Privacy Act Statement

**DHS Authority to Collect This Information:** The Homeland Security Act of 2002 [Public Law 1007-296, §302(4)] authorizes the Science and Technology Directorate to conduct “basic and applied research, development, demonstration, testing, and evaluation activities that are relevant to any or all elements of the Department, through both intramural and extramural programs.” In exercising its responsibility under the Homeland Security Act, S&T is authorized to collect information, as appropriate, to support R&D related to improving the security of the homeland.

**Principal Purposes:** DHS S&T, or researchers conducting research on behalf of S&T, will collect contact information and limited personally identifiable information from volunteers participating in DHS S&T funded research, development, testing, and evaluation activities. This information will be used to [insert purpose of data collection].

**Routine Uses and Sharing:** In general, DHS will not use this information for any purpose other than the purpose stated above. However, DHS may release this information of an individual on a case-by-case basis as described in the DHS/S&T-001 Research, Development, Test and Evaluation System of Records Notice (SORN), which can be found at: [www.dhs.gov/privacy](http://www.dhs.gov/privacy)

**Disclosure:** You may opt not to provide the requested information or to provide only some of the information DHS requests. If you opt not to provide some or all of the requested information, you may not be able to participate in this activity.