



Privacy Impact Assessment  
for the

USCG Research and Development Center (RDC) Small  
Unmanned Aircraft Systems (sUAS) Program

**DHS/USCG/PIA-026**

**February 22, 2018**

**Contact Point**

**Evan Gross**

**United States Coast Guard**

**Research and Development Center (RDC)**

**(860) 271-2647**

**Reviewing Official**

**Philip S. Kaplan**

**Chief Privacy Officer**

**Department of Homeland Security**

**(202) 343-1717**



## Abstract

The Department of Homeland Security (DHS) United States Coast Guard (USCG) Research and Development Center (RDC) has been tasked and funded to evaluate small Unmanned Aircraft Systems (sUAS) for potential use by USCG for operational missions. sUAS include small aircrafts (typically less than 55 pounds in weight) that are generally operated using a wireless ground control station (GCS). The aircraft are equipped with sensors and cameras that can capture images and transmit them to standalone GCSs to provide aerial views of USCG missions for situational awareness to the operators and users. USCG is conducting this Privacy Impact Assessment (PIA) to address the privacy impacts of sUAS surveillance and image capturing capabilities.

## Introduction

sUAS technology has the potential to be a valuable tool for rapid response and situational awareness prior to and during USCG operations. The sUAS are equipped with electro-optical (EO) and infrared (IR) cameras that feed images to standalone, non-networked flight computers (GCSs). Part of the research being conducted by the RDC is evaluating various commercially available EO/IR camera payloads for capability, capacity, limitation, and overall mission impact. All imagery collected during sUAS evaluations is transmitted directly to the operator for the purpose of safely operating the aircraft and evaluation of the system's target detection capabilities. The scope of this research includes the ongoing deployment and evaluation of sUAS from USCG vessels and shore sites at locations around the country over the next several years. This technology is meant to eventually be a tool to supplement manned assets performing USCG missions by providing critical situational awareness.

The overall objective of the RDC's research efforts is not to collect personally identifiable information (PII), but to understand how sUAS technology could facilitate USCG operations. This technology could enable more effective responses in all 11 USCG mission sets: ports, waterways, and coastal security; drug interdiction; aids to navigation; search and rescue; living marine resources; marine safety; defense readiness; migrant interdiction; marine environmental protection; ice operations; and other law enforcement activities.

Testing sUAS for USCG mission sets typically requires flights over the open water area surrounding USCG cutters. No PII is collected during these test flights by the sUAS (see below for the information USCG collects and uses). However, USCG requires USCG test participants to assist in simulating targets of interest, whether they be disabled boaters, drug smugglers, alien smugglers, or vessels fishing illegally. Tests include search patterns, EO/IR payload evaluations, and sUAS endurance and capabilities as technology advances. All individuals acting as test



participants in sUAS testing will be active and consenting members of the USCG RDC program, briefed on the capabilities of each sUAS system, assigned a portion of the test plan to execute to generate only the information required to assess sUAS for USCG research purposes.

EO and IR cameras provide the means for collecting images/information and are capable of capturing video at any altitude. However, the level of altitude impacts whether objects and images are recognizable. The higher the altitude, the less visibility and detail of a particular object/image. At no point will the test participant's personal identification information (*e.g.*, name) be available to link to the image. In addition, the quality of the imagery should only be sufficient enough to distinguish between human, animal, and target type, and the relative size differences between individuals. Any inadvertent images captured during this test will not clearly differentiate between individuals, and no facial recognition technology is used.

Nonetheless, RDC programs and projects will take all reasonable steps necessary to maintain the security of any potential PII, and will protect the data from inappropriate, unauthorized, or unlawful access, use, disclosure, or destruction. All of the data (images/video) that is initially captured in the GCS is for research exercises and can only be accessed by a few select individuals. The data is typically deleted from the GCS at the end of each day of the testing event. There are instances when images/video useful in supporting the ongoing analysis would be transferred to the USCG workstation project folder, which has access limited to the project team only. None of the images/video will constitute PII because the sUAS cameras and test procedures do not allow for such visual clarity and the data will not be maintained in a manner that allows it to be linked to any PII. Should any of the images/video be selected for use in a briefing/presentation/report, the RDC has a rigidly controlled review process that includes the Program Manager (PM), Branch Chief, Scientific and Technical Information (STINFO) Officer, Public Affairs Officer (PAO), Security Officer Technical Director, and Executive Director on a review panel to ensure that the appropriate level audience, markings, and security have been addressed.

The test plans, controls, and Federal Aviation Administration (FAA) regulations<sup>1</sup> that govern each test event will prohibit reckless operation of a sUAS. The images captured by sUAS are transmitted and stored on the GCS, which includes a standalone laptop. The GCS have access controls in place that ensure only those with an authorized need to know can access images. RDC stores relevant images such as snapshots of test scenarios to show validity of various payload evaluations under password protection and typically deletes all images at the end of each day of the test event, unless it is useful in supporting ongoing analysis.

---

<sup>1</sup> See Federal Aviation Administration regulations at 14 CFR Part 107 – Small Unmanned Aircraft Systems.



## Fair Information Practice Principles (FIPPs)

The Privacy Act of 1974 articulates concepts of how the Federal Government should treat individuals and their information and imposes duties upon federal agencies regarding the collection, use, dissemination, and maintenance of PII. The Homeland Security Act of 2002 Section 222(2) states that the Chief Privacy Officer shall assure that information is handled in full compliance with the fair information practices as set out in the Privacy Act of 1974.

In response to this obligation, the DHS Privacy Office developed a set of Fair Information Practice Principles (FIPPs) from the underlying concepts of the Privacy Act to encompass the full breadth and diversity of the information and interactions of DHS. The FIPPs account for the nature and purpose of the information being collected in relation to DHS's mission to preserve, protect, and secure.

DHS conducts Privacy Impact Assessments on both programs and information technology systems, pursuant to the E-Government Act of 2002 Section 208 and the Homeland Security Act of 2002 Section 222. USCG RDC is a research entity rather than particular information technology system. This PIA examines the privacy impact of USCG RDC sUAS research activity as it relates to the FIPPs.

### 1. Principle of Transparency

*Principle: DHS should be transparent and provide notice to the individual regarding its collection, use, dissemination, and maintenance of PII. Technologies or systems using PII must be described in a SORN and PIA, as appropriate. There should be no system the existence of which is a secret.*

This PIA provides a level of transparency to the public regarding USCG RDC sUAS testing efforts. All individuals designated as test participants will be active and consenting members of the RDC program. Participants will be briefed on the capabilities of each sUAS system, assigned a portion of the test plan to execute, and fulfill a test team support role in generating only non-PII required to assess sUAS for USCG research.<sup>2</sup> Each participant will be made aware that his or her unidentifiable image could potentially be captured during the execution of a test and at no point will the participant's personal identification be available to correspond with the image.

None of the sUAS systems as part of this research effort are secret. Prior to each evolution of testing, RDC notifies the FAA (through the filing of publicly-available Notices to Airmen

---

<sup>2</sup> The information generated and how it is generated depends on the test performed. Often it involves determining payload performance; tactics, techniques, and procedures for operating sUAS on USCG surface platforms; and the impact the sUAS system can have on USCG mission sets.



(NOTAMs)), the local air station, CG Office of Aviation Forces (CG-711)), and local and tribal leaders.

## 2. Principle of Individual Participation

*Principle: DHS should involve the individual in the process of using PII. DHS should, to the extent practical, seek individual consent for the collection, use, dissemination, and maintenance of PII and should provide mechanisms for appropriate access, correction, and redress regarding DHS's use of PII.*

All designated test participants will be personnel from the RDC program. Participants will be briefed on the capabilities of each sUAS system, assigned a portion of the test plan to execute, and fulfill a test team support role in generating only the information required to assess sUAS for USCG research. The RDC sUAS program is designed to not collect PII. Prior to testing, all systems will be calibrated to ensure data quality and integrity. The imagery will only be of sufficient quality to distinguish between human, animal, and asset, and the relative size differences between individuals. The images taken will not be matched to any database or names of the participants, and will not be capable of performing facial recognition.

## 3. Principle of Purpose Specification

*Principle: DHS should specifically articulate the authority which permits the collection of PII and specifically articulate the purpose or purposes for which the PII is intended to be used.*

The purpose of the research is to determine the effectiveness of sUAS in supporting various USCG operations, consistent with the requirements and authorities spelled out in 14 U.S.C. §§ 81 and 87-89. This technology is meant to eventually be a tool to supplement manned assets performing USCG missions by providing critical situational awareness.

USCG RDC currently owns unmanned aircraft systems that include aircraft typically under 55 pounds with wingspans of three (3) to six (6) feet or less that are characteristically operated using a GCS. Each sUAS is equipped with sensors and cameras capable of capturing images or other data, and transmitting them to GCSs to provide aerial views in support of numerous USCG missions.

The systems under test will not collect PII when operated in accordance with the test plans, FAA regulations, and DHS and USCG policies that govern this effort.



## 4. Principle of Data Minimization

*Principle: DHS should only collect PII that is directly relevant and necessary to accomplish the specified purpose(s) and only retain PII for as long as is necessary to fulfill the specified purpose(s). PII should be disposed of in accordance with DHS records disposition schedules as approved by the National Archives and Records Administration (NARA).*

sUAS are only being tested for use as a potential situational awareness tool to support USCG missions. The RDC will provide its own test participants and platforms to generate imagery and telemetry to assess sUAS capabilities. While not collecting PII from sUAS, the RDC will have access to the basic PII of participants necessary to run the program. This PII will never be linked to data collected by sUAS.

Any information generated during this research will be from consenting RDC program personnel. Prior to testing, all systems will be calibrated to ensure data quality and integrity. The quality of the imagery should only be sufficient enough to distinguish between human, animal, and asset, and the relative size differences between individuals. The images taken will not be matched to any database and will not be used to support a facial recognition program.

Any inadvertent images captured during this test will not clearly identify individuals. Images taken would consist of things like letter boards or an item in the water to simulate an oil spill. The RDC will take all reasonable steps necessary to maintain the security of the images captured and ensure no PII is captured. All data and images retained from the sUAS testing events will be protected from inappropriate, unauthorized, or unlawful access, use, disclosure, or destruction.

Information collected by or on behalf of the RDC using sUAS is deleted from the GCS at the end of each day of the test operation, unless retention of the information is determined to be necessary to the ongoing technology assessment; it is then maintained in a system of records relative to the applicable USCG mission.

**Privacy Risk:** There is a potential risk that sUAS operators may inadvertently collect more information than needed.

**Mitigation:** RDC programs and projects use the least amount of information consistent with the documented purpose(s), and use minimization techniques such as synthetic data or anonymization where appropriate and practicable. The sUAS research projects do not need, nor would use any images of non-USCG targets for use in reporting test results. If any private or public images are inadvertently captured they will be deleted immediately and steps will be taken to minimize the possibility of recurrence.



## 5. Principle of Use Limitation

*Principle: DHS should use PII solely for the purpose(s) specified in the notice. Sharing PII outside the Department should be for a purpose compatible with the purpose for which the PII was collected.*

Although research test analysis data may be shared with federal partners, no PII data is collected from the sUAS, and thus none is shared externally or internally.

The systems under test will not collect PII when operated in accordance with the test plans, FAA regulations, and DHS and USCG policies that govern this effort. The authority to collect or purpose for the collection and use of PII harbor no conceivable benefit to the research effort.

Information will only be used to assess the platform and payloads of the sUAS. Detection and vessel identification are key components to evaluating the systems and their ability to facilitate USCG missions. RDC will provide its own test participants and assets to generate imagery for this assessment.

**Privacy Risk:** There is risk that identifiable images of test participants will be collected inadvertently during the test efforts and used in analysis reports/presentations.

**Mitigation:** USCG mitigates this risk by only using technology that does not allow for such visual clarity to identify any specific individuals. The RDC further mitigates this risk by carefully reviewing video and images captured by the GCS and used in analysis reports/presentations to ensure no images contain PII.

## 6. Principle of Data Quality and Integrity

*Principle: DHS should, to the extent practical, ensure that PII is accurate, relevant, timely, and complete, within the context of each use of the PII.*

Information collected will only be used to assess the platform and payloads of the sUAS. The video and images generated by the sUAS are used only to evaluate the system. There is no need for PII to be collected to perform the assessment of the sUAS.

RDC will be providing its own test participants and assets to generate imagery for this assessment. Prior to testing, all assets and systems will be calibrated to ensure data quality and integrity. The quality of the imagery should only be sufficient enough to distinguish between human, animal, and asset, and the relative size differences between individuals. The images taken will not be matched to any database and will not be capable of performing facial recognition.



## 7. Principle of Security

*Principle: DHS should protect PII (in all forms) through appropriate security safeguards against risks such as loss, unauthorized access or use, destruction, modification, or unintended or inappropriate disclosure.*

DHS and USCG will adhere to the security safeguards that govern all DHS and USCG operations as they would in the course of any research effort. All images captured by sUAS during the test exercises are transmitted to an encrypted, password-protected GCS, and only those individuals with an authorized need to know will have access to the GCS and the information contained therein.

Any private or public images/video captured by the sUAS will be deleted from the GCS immediately. The sUAS research projects do not need, nor would use any footage of non-USCG targets for use in reporting test results.

**Privacy Risk:** There is a risk unauthorized individuals may access the data.

**Mitigation:** RDC programs and projects will take all reasonable steps necessary to maintain the security of all data collected, and will protect the data from inappropriate, unauthorized, or unlawful access, use, disclosure, or destruction. All images captured by the sUAS during the test exercises are transmitted to an encrypted, password protected, standalone GCS and accessed only by those having a need to know. Any PII inadvertently collected will be safeguarded along with all other data collected, but the PII will be deleted from the GCS once discovered.

## 8. Principle of Accountability and Auditing

*Principle: DHS should be accountable for complying with these principles, providing training to all employees and contractors who use PII, and should audit the actual use of PII to demonstrate compliance with these principles and all applicable privacy protection requirements.*

No PII will be collected by sUAS as part of this research effort; however, all RDC personnel are required to complete annual DHS privacy training regarding the safe handling and protection of PII.

The images/video data initially captured in the GCS for research exercises is only accessible to a few select individuals. Data is deleted from the GCS at the end of each day of testing unless there are instances in which the data might be useful in supporting the ongoing analysis. In such cases, the data would then be transferred to the USCG workstation project folder, which only the project team can access.



## Conclusion

Unmanned aircraft technology has the potential to be a valuable tool for rapid response and increased situational awareness prior to and during potentially dangerous USCG operations. The overall objective of the RDC research efforts is not to collect PII, but to understand how this technology could facilitate USCG operations. Using sUAS for USCG mission sets typically requires flights over unpopulated areas or over open water, to determine the location or presence of vessels without the fidelity to collect images of individuals aboard. All data captured by sUAS are transmitted and stored on the GCS, which includes a standalone, non-networked laptop. The GCS has access controls in place that ensure that only those with an authorized need to know access the system. RDC only stores relevant images of USCG test targets and conducts all test events in accordance with the sensitive information protection policies of DHS and USCG. RDC does not retain any imagery collected by sUAS that is not relevant to evaluating the operational utility of the system(s).

## Responsible Officials

Evan Gross  
Research and Development Center  
United States Coast Guard

## Approval Signature

Original, signed copy on file with the DHS Privacy Office.

---

Philip S. Kaplan  
Chief Privacy Officer  
Department of Homeland Security