

**ICESat-2 Controlled Document
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**ICE, CLOUD, and Land Elevation Satellite
(ICESat-2) Project**

Flight Laser Surveillance Plan

ICESat-2-ATSMA-PLAN-0070

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**Goddard Space Flight Center
Greenbelt, Maryland**

CM FOREWORD

This document is an Ice, Cloud, and Land Elevation (ICESat-2) Project signature-controlled document. Changes to this document require prior approval of the applicable Product Design Lead (PDL) or designee. Proposed changes shall be submitted in the ICESat-2 Management Information System (MIS) via a Signature Controlled Request (SCoRe), along with supportive material justifying the proposed change.

In this document, a requirement is identified by “shall,” a good practice by “should,” permission by “may” or “can,” expectation by “will,” and descriptive material by “is.”

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FOREWARD

Under performance-based contracts such as this one, the contractor assumes more responsibility and greater risk in exchange for more flexibility and less direct Government involvement in contract activities. However, the Government still has a responsibility to conduct surveillance. Surveillance spans a spectrum of Government involvement. Surveillance may be as simple as inspecting a delivered support or service at acceptance or as complex as continually monitoring contractor performance. To meet this responsibility, the Government needs to understand the risks involved in the Contractor's activity and how the Contractor is managing those risks.

This Surveillance Plan has been prepared to describe the Government's surveillance of this contract. It is a "living" document that will be tailored to the contractor selected. The Government welcomes suggestions for improving this Plan. Of particular interest are ideas on what information the Government should monitor (i.e., metrics) and how the Government can most cost-effectively obtain the relevant performance data it needs.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this document is to define the overall approach the National Aeronautics and Space Administration's (NASA's) Goddard Space Flight Center's (GSFC) intends to use to monitor and survey contractor performance under the ICESat-2 Flight Laser Development, Contract Number (to be determined). The contract provides the flight lasers for the ICESat-2.

The contract provides Research and Development (R&D) engineering and related services including design, development, fabrication, integration, testing, and performance verification for all of the lasers necessary for the Advanced Topographic Laser Altimeter System (ATLAS) instrument.

This plan defines the process the Government expects to follow to obtain data, evaluate the Contractor, and determine if contract performance is acceptable. The goal is to balance the level of Government surveillance with perceived impacts and risks associated with performance hereunder. The Government reserves the right to modify this plan at any time during the contract.

Throughout this Surveillance Plan, the term Contractor is used. Unless explicitly stated, this term is applicable to both the Contractor and any and all of its Subcontractor(s).

1.2 Scope

This plan identifies program requirements, strategy, resources, review and control processes, and surveillance activities for continuous measurement of contractor performance under Contract No. To Be Determined. It is intended to be a "living" document from which resources and activities will evolve from one phase to another during the life of the contract. The plan will be updated as required. The surveillance program addresses all elements of the contract.

1.3 Program Definition and Contract Description

The purpose of this contract is to provide support to NASA GSFC's programs and enterprises under a performance based contracting arrangement. The period of performance for the development is 5 years, and work will be performed at the Contractor's facilities.

The principal purpose of this contract is to provide the ICESat-2 flight lasers.

1.4 Guiding Directives

The guiding documents for this surveillance effort include the contract Statement of Work (SOW), the Performance Evaluation Plan, the Specification identifying the deliverable requirements specified therein. These are key elements in the Government's effort to ascertain whether the work is being performed in a high quality, timely, and cost-efficient fashion.\

1.5 Reference Documents

The documents listed below are applicable for this surveillance effort:

ICESat-SMA-REQ-0009	ICESat-2 MAR
ICESat-2 Risk Management Plan	ICESat-2-SYS-PLAN-0097
Contract Document	<u>To Be Determined</u>

2.0 SURVEILLANCE STRATEGY DEFINITIONS

2.1 Insight

Insight is an assurance process that uses performance requirements and if definable, performance metrics to ensure process capability, product quality and end-item effectiveness. Insight relies on gathering a minimum set of product or process data that provides adequate visibility into the integrity of the product or process. The data may be acquired from contractor records, usually in a non-intrusive parallel method.

Insight as applied to this contract and the work to be performed therein will result in lower levels of Government surveillance and allow the contractor to assume increased responsibility and accountability for the integrity of processes and/or products. Insight will rely heavily on evaluating planned contract deliverables and existing contractor procedures and working documents, if available.

2.2 Oversight

Oversight as applied to this contract and the work to be performed therein will result in higher levels of Government surveillance. The Government will gather information pertaining to the contractor's process through on-site involvement and/or inspection in the process and will monitor the process itself.

3.0 RESOURCES

3.1 General

All surveillance activities will be implemented using Government personnel at Goddard Space Flight Center (GSFC) and, if Resident Office or Defense Contract Management Agency (DCMA) personnel are involved, at the Contractor's facility. The surveillance team may be composed of:

- a The Contracting Officer's Technical Representative (COTR) accompanied by the Contracting Officer (CO) and the Contract Specialist
- b GSFC Applied Engineering and Technology Directorate (AETD) technical and support personnel (i.e., task monitors (TM), resource analysts (RA)).
- c Other GSFC technical and support personnel (i.e., Health & Safety support personnel, IT security personnel, safety & mission assurance personnel).
- d Resident Office or Defense Contract Management Agency (DCMA) personnel at the Contractor's facility).

3.2 Surveillance Team

The surveillance team will be composed of key government personnel representing the ICESat-2 Project and GSFC Procurement Office. The team's primary purpose will be to provide direction for contract surveillance activities and to serve as the Government's focal point in reviewing and evaluating overall contractor performance. The team will obtain information from various sources, including deliverable contractor documents, communications with the contractor, and reports by other personnel or representatives who interact with the contractor.

All available information will be evaluated, and any action by GSFC will be determined based upon the scope and magnitude of any particular issue or problem. The surveillance team chairperson (COTR) will formally notify the Contracting Officer of situations where it is perceived that the Contractor has failed to take prudent corrective or preventive action, of situations perceived to increase risk, or of findings of continued contractual non-compliance.

3.3 Defense Contract Management Agency (DCMA), if participating

A DCMA representative may be collocated with the Contractor. The DCMA representative may support the Contracting Officer with the surveillance effort in accordance with the provisions of the GSFC Letter of Delegation and this plan.

4.0 SURVEILLANCE STRATEGY AND APPROACH

4.1 General

The level of risk and the impact of failure are major determinants in helping define the type of surveillance to be conducted. Clearly, if the impact of failure is minor and the level of risk is low, only a small amount of insight-driven surveillance would normally be needed. Conversely, if the impact of failure could be significant and the level of risk is high, more extensive surveillance (including possible oversight surveillance) is warranted.

GSFC will strive to use an insight-driven surveillance approach during the design, development and testing. The overall surveillance goal will be to obtain objective evidence and data that enable the Government to determine whether the contractor's program and processes are functioning as intended in accordance with the terms of the contract. The focus will be on prevention rather than detection, i.e., emphasizing controlled processes and methods of operation, as opposed to relying solely upon inspection and test to identify problems.

Surveillance team members will have open access to all areas in which this contract is being performed and will interface directly with their contractor counterparts. They will document problems, concerns and issues, and take note of contractor accomplishments. They will collect performance metric data, where applicable, and will participate in contractor review meetings as needed. Information gained from the various types of data collection will be compiled and assessed throughout each performance evaluation interval.

The COTR and Contracting Officer will annually complete a NASA Form 1680, entitled, "Contractor Performance Assessment" which will also be reviewed by the contractor, and become a part of the active GSFC data base of Contractor Performance Assessments.

4.2 Forms of Surveillance

Support of the contract surveillance will take the following forms:

4.2.1 Communications and Data Collecting

- Discussions with Government and Contractor personnel
- Electronic mail from/to Government and Contractor personnel
- Contractor web-based work monitoring/reporting system (if applicable)

- Progress reviews with the Contractor's Program Manager
- Other communication methods, as needed

4.2.2 Evaluation and Reporting

- Review of deliverables and milestone achievement from contract data requirements list
- Documentation of problems, issues and concerns
- Data collection reporting
- Performance evaluation boards
- Product quality and performance levels

4.3 Government Mandatory Inspection Points (MIPs) The government or its representative will perform the following MIPs (mandatory inspection points) listed below. The government may request additional MIPs if a specific process prohibit inspection at a later time.

- Inspect 100% solder
- Inspect 100% crimps
- Inspect 100% conformal coating, staking, and potting
- Rework Inspection • Pre-vibration test inspection
- Pre-thermal air test inspection
- Pre-thermal vacuum test inspection
- Pre-closure Inspection
- Pre-Ship Inspection/Data Review

Witness of laser performance testing by surveillance team

These inspections shall be performed by the government or its representative. Any anomalies or nonconformances shall be documented per the contractor's process for review, disposition and approval of anomaly reports.

Time of response to GMIPs: The government and its' representatives are required to respond to the agreed time of inspection (after being given notice of the inspection) within 4 hours or the contractor may proceed.

5.0 SELECTED SURVEILLANCE ACTIVITIES

The following selected activities will be performed by various surveillance team members during applicable stages of contract performance:

Table 1. Surveillance Team Activities

Area of Risk Identified	Impact to Government	Surveillance Team Activity
Technical Requirements: Quality of engineering data/studies/support	Mission delays/lost time/additional costs in redesign	COTR will track contractor progress and evaluate contractor deliverables
Information Technology Security	Computer Security: Potential corruption and loss of data; disruption of schedule	Annual review of IT security plans and controls and GSFC vulnerability scans, firewalls and protection software will be used
Configuration Management Documentation	Erroneous use of equipment and facilitation of activities	The surveillance team will periodically sample the current available baseline documentation, and active management documents to verify compliance with the contractor's Configuration Management Plan.
Property Management, Control, and Maintenance	Loss of or damage to equipment; potential schedule impact	Review contractor property management techniques, compliance with policies, and record-keeping via sampling techniques during Government semi-annual walkthrough inspections.
Safety	Loss of work-time or equipment, with schedule of cost impact	The Government will evaluate the contractor's safety and health plan. The surveillance team will conduct semi-annual walkthrough inspections to ensure compliance with safety and health requirements.
Contractual and Technical Documentation and Archiving	Loss of knowledge of processes and results	The Government will periodically sample documents (review for accuracy and timeliness of contract deliverables).

Table 1. Surveillance Team Activities (con't)

Area of Risk Identified	Impact to Government	Surveillance Team Activity
Quality of Workmanship	<p>I. End-Items:</p> <ul style="list-style-type: none"> a. Inability to meet commitments of scheduled deliverables. b. Additional cost resulting from rework, nonconforming, latent defects. <p>II. Services:</p> <ul style="list-style-type: none"> a. Delayed data delivery and poor data quality. 	<p>The Surveillance team will perform the following:</p> <ul style="list-style-type: none"> a. Monitor and track scheduled and delivery due dates. b. Conduct/witness testing and inspections, when necessary. Ensure end-item deliverables conform prior to acceptance. c. Monitor quality of data received. d. Monitor and track the level of re-work required for delivered products e. Monitor shipping/delivery controls and practices.
Cost	<p>Cost Overrun:</p> <ul style="list-style-type: none"> a. Delay or deletion of other work b. Inability of meet data delivery requirements or NASA Performance Metrics c. Funding fluctuations 	<p>The Contracting Officer's Technical Representative and the resource analyst (RA) will evaluate and monitor costs incurred on a monthly basis resulting from NASA financial reporting requirements due from the contractor on a monthly or quarterly basis.</p>
Process Controls	Degradation of work products; potential schedule impact	The Surveillance team, with assistance from DCMA will periodically monitor the contractor's adherence to key processes and their internal audit schedules/results.
Continuous Risk Management	Technical, cost, schedule, and mission success	Surveillance activities will be conducted to ensure that the Contractor is performing a Continuous Risk Management program that identifies, analyzes, tracks, mitigates, controls and reports on - related risks.
Quality Management	Technical, cost, schedule, and mission success	The Contracting Officer's Technical Representative and MSP System Assurance Manager will monitor the contractor's internal and external audits for compliance with ANSI/ISO/ASQ 9001-2000.

The surveillance team members will participate in review meetings. They will provide assistance, as necessary, with the development and approval of technical requirements, flow-down of requirements, and with design, development, production and test activities. They will also maintain insight into the Contractor's compliance with relevant deliverables submitted under contract. When the Government has concerns regarding Contractor performance, surveillance team members may conduct independent audits of the Contractor's activities, processes, products, documentation and data, in order to provide assurance that the program is being implemented according to all requirements and specifications. These audits will normally be conducted with advance notification and coordinated with the Contractor. However, the Government reserves the right to conduct unscheduled audits when evidence indicates that Contractor performance is deficient.

In addition to checking conformance with GSFC regulations listed above, the COTR may make periodic checks of the contractor's workspace to assess adequacy of facilities, equipment, and materials.

5.2. Work Review and Performance Monitoring

The COTR and CO will perform the following functions to evaluate the contractor's performance:

- a. Assess the reasonableness of the required milestones and deliverables.
- b. Reviews the Contractor's monthly Progress Report for accuracy and completeness
- c. Meets monthly, or more often if required, with the Contractor's Program Manager to discuss overall contract management and performance, and schedule issues, and review cost related issues.
- d. Certifies the Contractor's invoices for payment in accordance with GSFC procedures.
- e. Assesses the Contractor's overall contract performance against the metrics (cost, technical, and schedule) established in the contract's Performance Evaluation Plan.
- f. In the event of a discrepancy in the Contractor's performance, the COTR promptly notifies both the Contracting Officer, and the Contractor's Program Manager and arranges a meeting to rectify the situation.
- g. Perform Quality Assurance (QA) inspections and QA witnessing/monitoring of tests.

- h. Reviews Contractor Deliverables/Products for acceptability, quality, completeness/usability, and that all milestones met or a mutually identified alternative has been set.

5.3. Property Administration

The COTR will make informal inspections, as required, to insure Installation-Accountable Government Property (IAGP) is being properly utilized and protected in accordance with the contract terms and conditions.

The COTR will review all requests to move IAGP off-site during the period of performance. This will be accomplished via the following disciplines:

- a. Make sure GSFC 20-4s have been properly completed and have all required COTR/CO signatures.
- b. Contractor maintains Government Furnished Property (GFP) offsite records.

5.4. Staff Monitoring

The COTR will ensure that employer – employee relationships do not occur between government and contractor personnel. This is achieved if the following is adhered to:

- a. Only the Contractor interviews prospective employees.
- b. Only the Contractor's Program Manager assigns work directly to the employees.
- c. Only the Contractor approves timecards and absences.
- d. Government personnel do not interfere with the Contractor regarding personnel and administrative prerogatives.

6.0 SUMMARY

This Surveillance Plan describes the approach NASA Goddard Space Flight Center (GSFC) intends to use to monitor the contract effort and assure that the Contractor performs in accordance with terms and conditions of the Contract. GSFC anticipates using an insight surveillance approach. The goal is to balance the level of Government surveillance with the perceived impacts and risks of mission failure.

GSFC plans to utilize a surveillance team to evaluate Contractor performance and direct surveillance activities.

Released Version