

Statement of Work for The University of Alaska

U.S. Department of Homeland Security Science and Technology Directorate Borders and Maritime Division

Polar Ground Station Hosting, Fairbanks, AK

Task Order# 70RSAT18FR0000073

PR# RSBR-19-00069

1. Background

The United States and its partners in the Arctic face daunting challenges in providing for the safety and security of life and natural resources in this remote region. The difficulty of distance, daunting weather conditions and limited infrastructure to survey, present challenges to the U.S. Coast Guard conducting its statutory missions as part of the Department of Homeland Security (DHS). The USCG provides protection of the Arctic, with over a century of service in the region, and stands ready to continue to provide safety and security in the face of climate change, opening sea lanes, increased vessel traffic, and the need to sustainably utilize critical living marine and energy resources. To do so, the service and its partners must improve their situational awareness of the arctic domain while also improving communications for both the Coast Guard and maritime public.

The U.S. Coast Guard could gain situational awareness in the Arctic through the use of small and relatively inexpensive satellites. The inherent advantages of satellites include the ability to operate in all weather conditions, during all seasons, located above remote and hazardous environments, reliably provide broad area coverage worldwide. Further, by using a low altitude polar orbit a single satellite will overfly the Arctic approximately every one hundred minutes. A larger, distributed constellation of small satellites can provide effective sensor coverage of the Arctic thanks to their orbital convergence and high rates of revisit.

CubeSats are small form factor satellites and represent a fundamental shift in space systems that allow rapid deployment of capabilities. The small size of CubeSats necessitates the use of low cost, miniaturized, but highly capable electronics and greatly decreases the cost of launch due to their almost negligible size and weight. When CubeSats age or eventually fail they can be quickly and inexpensively reconstituted or replaced.

DHS Science and Technology (S&T) is investigating the operational utility of CubeSat technology through Project Polar Scout. Polar Scout is a proof of concept demonstration where a mix of government owned and commercial small satellites in polar orbit will provide services to detect and locate emergency beacons in the Arctic. The beacon information collected by the government CubeSats will be downlinked using ground stations. The Polar Scout program

desires a ground station in Fairbanks, AK. This is because higher latitude ground stations provide increased access time to polar orbiting satellites.

2. Scope of Work

This scope is to provide satellite-telemetry downlink services through the contractor's 7m antenna system (ground station), to continue hosting a government owned 3m antenna system at the contractor's "Richardson" facility, and to provide basic technical support of government owned equipment located at the contractor's ground station facility. These high latitude ground stations will downlink emergency beacon and other maritime domain information collected from Polar Scout CubeSats passing over the Arctic.

2.1. Applicable Documents

2.1.1. Compliance Documents

The following documents provide specifications, standards, or guidelines that must be complied with in order to meet the requirements of this task order:

- Polar Scout Ground Terminal Specification

2.1.2. Reference Documents

The following documents may be helpful to the contractor in performing the work described in this document:

- BOA HSCG32-16-A-B0002, Task Order HSCG32-17-J-P19J00

3. Specific Requirements/Tasks

3.1. Task One: Kick-Off Meeting

The contractor shall conduct a kick off meeting within 14 days of award. Prior to the meeting, the contractor shall provide agenda items for the meeting to the Contracting Officer Representative (COR)/Project Manager (PM). The kick off meeting may be conducted via phone.

3.2. Task Two: Use of 7 Meter (m) S-Band Ground Station

3.2.1: Satellite Commanding and Telemetry Uplink and Downlink Services

The contractor shall provide uplink and downlink communications with Polar Scout satellites through the contractor's 7.3m S-Band ground station in support of the DHS S&T Polar Scout mission on an as needed basis (e.g. per minute). The contractor shall provide these services from time of award through **24 September 2021**. The ground

station must be capable of supporting Polar Scout requirements, to include radio frequency (RF) requirements, per the Polar Scout Ground Terminal Specification. The contractor shall provide the government access to the 7.3m scheduling software service/API to schedule contact periods with the Polar Scout satellites. The contractor shall report operations and maintenance issues that may impact the fulfillment of their requests in a timely manner.

3.2.2: Processing Terminal Hosting

The contractor shall provide a physical location (up to half of a standard network equipment rack) for Polar Scout data processing hardware from time of award through **24 September 2021**. The contractor shall provide a connection between the ground-station's baseband output and the Polar Scout processing terminal, per the enclosed Polar Scout Ground Terminal Specification. The contract shall provide 110 volt power and one CAT 5 drop with active internet to the location. The Polar Scout program will install equipment at contractor's facility on a mutually-agreeable schedule.

3.3. Task Three: Continuation of *Ground Station Hosting* (Government Owned 3m S-Band Antenna System)

This task continues Task 2 and Task 5 of the U.S. Coast Guard Research and Development Center's BOA HSCG32-16-A-B0002, Task Order HSCG32-17-J-P19J00. The contractor shall continue to provide the Polar Scout antenna system and radome surface in Fairbanks, AK through the end of the Period of Performance, **24 September 2021**. The surface shall have power and data cables rising inside of the existing government owned radome. The power service to the S-Band antenna surface shall be 4 wire 3-phase 120/208 VAC 30 Amps. The contractor shall provide a minimum of one CAT 5 drop with active internet connectivity. The contractor shall maintain the 15 degree elevation view shed requirement for the 3m antenna system currently installed on the surface. The contractor shall provide seamless operations while transitioning to this task order.

3.4. Task Four: Technical Support

3.4.1. General Ground Station Engineering Services

Under the direction of a Government representative, the contractor shall provide basic ground station engineering services to support government owned equipment at the ground stations on an as needed basis (e.g. by the hour) from time of award through **24 September 2021**. If the Government requires general ground station engineering services, the government will notify the contractor by phone or e-mail. The contractor shall take action within 3 days of notification. These services include basic system checks and testing, software/hardware installations and configuration changes, system resets, updates, general shipping/logistical assistance, and final equipment disposition.

3.4.2. Government Equipment Troubleshooting and Repair

Under the direction of a Government representative, the contractor shall provide basic troubleshooting and repair services to support government owned equipment at the ground stations on an as needed basis from time of award through **24 September 2021**. If the Government detects a failure on government equipment, the government will notify the contractor by phone or e-mail. The contractor shall take initial action to begin resolving anomalies/failures within 3 days of notification. If possible, the contractor shall affect basic repairs (e.g., weatherproofing, connector/transmission line repair, equipment replacement) to restore ground station operation.

3.5. Task Five: Progress Reporting

The contractor shall provide *Monthly Progress Reports* (Deliverable 1) via electronic mail. These reports shall include a summary of all contractor work performed, including a breakdown of labor hours by labor category, all direct costs by line item, and any contractor concerns or recommendations during that reporting period.

4. Deliverables

ITEM	SOW	DELIVERABLE / EVENT	DUE BY/ GOVERNMENT REVIEWS	DISTRIBUTION
1	3.5	Monthly Progress Reports	15 days after invoice period	COR PM Contract Specialist

5. Other Task Order Details

Period of Performance

The duration of this project is from date of task order award through **September 24, 2021**.

DHS-Furnished Information

The DHS S&T Technical Representative identified in this Statement of Work (SOW) will be the point of contact (POC) for identification of any required information to be supplied by DHS.

The University of Alaska Anchorage will prepare any documentation according to the guidelines provided by DHS in this SOW.

Place of Performance

The University of Alaska will perform the work under this SOW at their facilities in Anchorage and Fairbanks, AK. Access to Government Facilities is not required.

Distribution is authorized to U.S. government agencies only. Contains information that may be exempt from public release under the Freedom of Information Act. Before this SOW is released to the public, approval is required by the Department of Homeland Security Science and Technology Directorate

Access to Government Information Systems

The contractor will not require access to DHS IT Systems.

Travel

Contractor travel is not required under this task order.

Contractor Furnished Property

The contractor shall furnish all facilities, materials, equipment and services necessary to fulfill the requirements of this task order, except for the Government Furnished Resources specified in SOW 2.1 and in Attachment 1 of this task order.

DHS-Furnished Property

The Government will provide access to the equipment listed in Attachment 1 of this Task Order to the contractor for work required under this task order. At the end of the period of performance, the Government will be responsible for the disposition of the equipment.

The contractor shall use Government furnished property, equipment, and supplies only for the performance of work under this task order.

The Government will provide the information, data and documents listed in Applicable Documents, SOW 2.1 at the kick-off meeting.

The contractor shall use Government Furnished Information (GFI), data and documents only for the performance of work under this task order. The contractor shall not release GFI, data and documents to outside parties without the prior and explicit consent of the Contracting Officer (CO), who will consult with the Contracting Officer's Representative (COR) and Program Manager (PM) prior to the approval or denial of such a request.

Before purchasing any individual item equal to or exceeding \$5,000 that is required to support technical tasks performed pursuant to this SOW, the University of Alaska Anchorage shall obtain the DHS S&T Contracting Officer's (CO's) prior written consent. If the DHS S&T CO consents to such purchase, such item shall become the property of DHS. The University of Alaska Anchorage will maintain any such items according to currently existing property accountability procedures. The DHS S&T CO will determine the final disposition of any such items in writing.

Security Requirements

All information and deliverables under this task order are Unclassified and will not require access to Sensitive but Unclassified (SBU) information.

Invoices

The University of Alaska Anchorage shall deliver a monthly invoice to InvoiceSAT.Consolidation@ice.dhs.gov on the 15th day of each month.

6. Points of Contact

University of Alaska Anchorage Technical POC is as follows:

Dr. Nettie Labelle-Hamel, Project Principal Investigator and Technical Point of Contact
Alaska Satellite Facility (ASF)
Geophysical Institute (GI), University of Alaska Fairbanks (UAF)
903 Koyukuk Drive
Fairbanks, Alaska 99775-7320
Phone: 907-474-6167
E-mail: nettie.labellehamer@alaska.edu

Maj Gen (Ret) Randy Kee, USAF, Executive Director,
Arctic Domain Awareness Center, University of Alaska
3211 Providence Drive, BOC3
Anchorage AK, 99508-4614
Phone: 907-786-0708
E-mail: rakee@alaska.edu

University of Alaska Anchorage Contracting POC is as follows:

Heather Paulsen, Finance Director UAA
Arctic Domain Awareness Center, University of Alaska
3211 Providence Drive, BOC3
Anchorage AK, 99508-4614
Phone: 907-786-1663
E-mail: hpaulsen@alaska.edu

University of Alaska Anchorage may change the individual designated as a POC upon notice to DHS S&T of such change.

The DHS POC's are as follows:

DHS S&T Contracting POC:

Contracting Officer

Richard Simons
Department of Homeland Security/Office of Procurement Operations
Washington, DC
Phone: 202-447-0949
E-Mail: Richard.Simons@hq.dhs.gov

DHS S&T Technical POC:

Program Manager/Contracting Officer's Representative (COR)

John Thayer

Department of Homeland Security/S&T Borders and Maritime Division

Washington, DC

Phone: 202-254-8777

Email: John.Thayer@hq.dhs.gov

DHS S&T Invoicing:

U.S. DHS - ICE

Burlington Finance Center

1605 LBJ HWY

P.O. Box 1000

Williston, Vermont 05495-1000

Email: InvoiceSAT.Consolidation@ice.dhs.gov