



NSIN PRESENTS
POLAR VORTEX
 Hacking the Arctic



Background

The National Geospatial Intelligence Agency (NGA), along with its partners across the Department of Defense, is responsible for collecting, processing and analyzing data to support operations all over the world. The data, collected from a variety of sources, provides DoD personnel real time geospatial information. Given the sheer data available through existing sources and new sensor technologies, along with the growing demand from DoD personnel for higher quality intelligence, the NGA wants to identify ways to improve the way it analyzes this data and make it actionable for the end-user.

One area where the agency wants to focus its intelligence gathering efforts is in the Arctic. This region is becoming increasingly important because of melting polar ice and the possibility of travel in previously hostile environments. Elements from each of the military Services are operating in the Arctic and rely on imagery to conduct day to day work. Technologies to facilitate this intelligence also have the potential to shape civilian work, especially within the fields of climate change research, and planetary science.



The Challenge

Develop concepts, technologies or systems to help collect, analyze, process, and visualize geospatial data in the austere and mobile environments in the Arctic.

Focus Areas

This hackathon will focus on the following categories:

■ Edge Collection and Processing:

Geospatial intelligence is typically large and requires powerful computers in order to analyze and become actionable. Operators need to have the ability to access this data in remote environments.

Key questions:

- Is there a way to streamline data downloads and facilitate edge processing for the Arctic's harsh conditions?
- Can data and intelligence collected and processed on the edge be secured?
- Can mobile data be leveraged to provide additional sensors, which in turn, could provide additional information granularity?
- Are there ways to fuse geospatial intelligence collected at the edge with existing feeds and technologies?

■ Visualization and User Experience:

The overwhelming amount of sensor data requires new algorithms using artificial intelligence and machine

learning techniques to filter out noise and hone in on elements important for operational purposes.

Key questions:

- How would you design a detection model to rapidly process geospatial information and identify key elements for operational use? (e.g., ships at ports, or natural disasters)
- What kinds of automated processing algorithms could be applied to make the analysis process more efficient?

■ Cybersecurity: Maintaining information assurance for data collected on the edge is of paramount importance.

Key questions:

- What sort of security mechanisms will be needed to collect, analyze, and transmit data in austere environments?
- Are there ways to both secure data without creating information silos that prevent information sharing?

Sign up to receive more information and event details:

<http://arctichacks.us/signup>

LOCATION:
Virtual

EVENT DATES:
July 19 - August 5

PRIZE POT:
\$45,000

EVENT PARTNERS:

