

CASE STUDY

Intermap Technologies® exceeds accuracy requirements for the Alaska Mapping Initiative

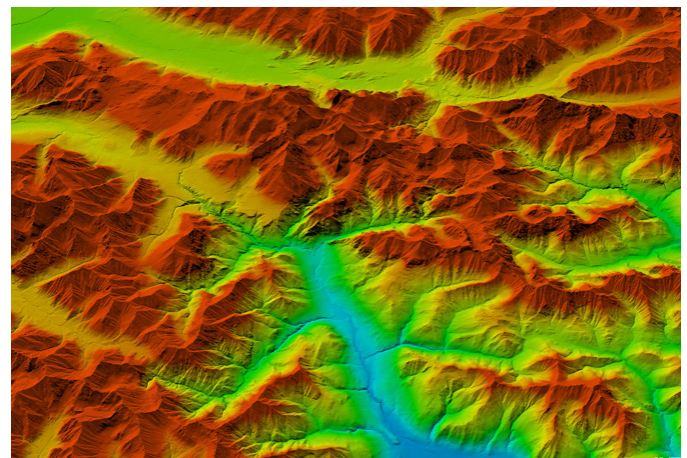
Challenges

The state of Alaska, which covers over 1,480,000 km² and is larger than Texas, California, and Montana combined, did not have an adequate digital base map, and was the only US state not mapped to National Map Accuracy Standards. Persistent cloud cover, vast remote wilderness and the nation's tallest mountains were just a few of the technical challenges that had to be overcome to update Alaska's base map.

In 2008, Intermap engaged with the state of Alaska, United States Geological Survey (USGS), and federal partner agencies to assess user and program requirements to map the entire state in alignment with the USGS 3D Elevation Program (3DEP). In 2010, Intermap was selected to perform this complex mapping project for the USGS and their Alaska Mapping Initiative (AMI) partners. Intermap's portion of the project entailed the use of Intermap's proprietary interferometric synthetic aperture radar (IFSAR) digital mapping technology to produce a highly accurate, cost-efficient elevation model of the entire state, including a coincident cloud-free, high-resolution orthorectified radar imagery layer and detailed hydrographic vector files.

Solution

The Alaska Mapping Initiative, a collaborative effort of the USGS, federal agencies, and the state of Alaska, required an accurate and current state-wide base-line bare earth and reflective surface elevation dataset that would meet the needs of federal, state, and local Government agencies and satisfy a 6-meter contour accuracy requirement. After an extensive review of available technical approaches to mapping Alaska, USGS and the AMI stakeholders selected Intermap to provide baseline elevation data and orthorectified radar imagery acquired with airborne IFSAR. The objective was to produce a 5-meter resolution digital surface model (DSM) as well as a bare earth digital terrain model (DTM), created by carefully



Intermap DTM showing terrain from the Gates of the Arctic Park & Preserve



editing all vegetation and man-made structures from the surface model. The USGS specification stated that DEM products should meet or exceed a vertical accuracy of 3-meters (LE90) for 0 to 10 degree slopes. Costly weather delays were avoided because Intermap's aircraft can operate day or night, in clear or cloudy conditions. Although the remote operations and extreme terrain provided serious challenges, Intermap's IFSAR technology and mature enterprise workflow have consistently delivered high-quality elevation data, orthorectified radar imagery, and detailed hydrological vectors exceeding contract requirements.



Intermap collected the majority of the elevation data for the Alaska program. All data meet USGS 3DEP specifications with 5-meter resolution and high-accuracy elevations for the entire state.

Benefits

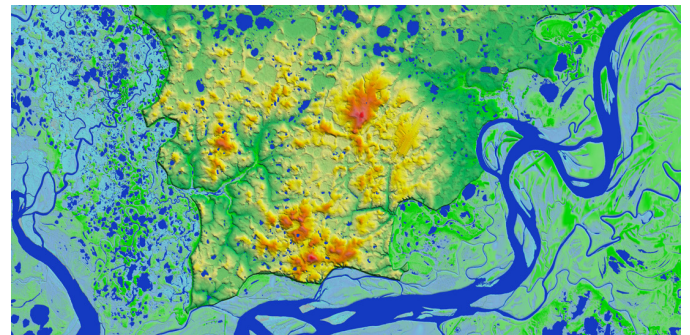
Extensive independent testing by prime contractor, Dewberry, found that the data consistently exceeded the required specifications and expectations

“ Intermap has successfully acquired over 1,171,000 km² of Alaska IFSAR data, and have consistently exceeded contract specifications on both accuracy and schedule.”

David F. Maune, Ph.D., PSM, PS, GS, SP, CP, CFM
Associate Vice President



of the project, in terms of both accuracy and interpretability. The DTM's tested vertical accuracy of 0.89m LE90 far exceeds the contract specification of 3-meter LE90, the ORI's 0.625m pixel resolution far exceeds the 5-meter contract requirement, and Intermap's detailed hydrology vectors exceed the contract specifications for the capture of both water bodies and rivers. These data are now being used to update USGS's new US Topo maps across the state and will benefit high-priority applications in human safety, planning, research, and resource management. Intermap has collected additional IFSAR data every summer from 2012-2019 with similar results to the initial AMI project. To date, Intermap has collected over 1,171,000 km² of IFSAR data in the state of Alaska. Intermap completed IFSAR acquisition in Alaska and delivered all data at the end of 2019. The entire state of Alaska has now been re-mapped to current standards. Intermap is proud to be a key member of the AMI team delivering next generation of maps for the state of Alaska.



Digital Terrain Model (DTM)



Intermap Technologies is an industry leader serving a diverse geospatial marketplace. We provide highly accurate geospatial information to help commercial enterprises and government agencies make better location-based decisions.

intermap.com

Copyright 2021. Intermap Technologies®. All rights reserved.

Your World. Made Simple.