

Arctic SDI Position Statement Regarding the 2015-2017 Arctic Council Pan-Arctic Digital Elevation Map Initiative

As part of the initiatives for the Arctic Council US Chairmanship 2015 – 2017 the US - through the Arctic Council Conservation of Arctic Flora and Fauna Working Group (CAFF) - has asked the Arctic SDI,¹ a voluntary cooperation between the eight Arctic National Mapping Agencies and endorsed by the Arctic Council, to support the investigation into the development of a Pan-Arctic Digital Elevation Map. Thus, in June 2015 the Arctic SDI Board agreed to participate in an on-going, US-led effort to develop an Arctic DEM product.

Along with discussing the required specifications for an Arctic DEM as a future part of the Arctic Spatial Data Infrastructure, the focus of the cooperation has been the development of a Pan-Arctic DEM funded by the National Science Foundation (NSF) and implemented by the University of Minnesota Polar Geospatial Center (PGC), using National Geospatial Intelligence Agency (NGA) sourced commercial satellite imagery.

To advance its work, the Arctic SDI Board initiated two workshops, held in Fall 2015 and Spring 2016, which brought together Arctic SDI DEM and mapping experts from the national mapping agencies, and experts from PGC, NGA and NSF to discuss and further this effort. The Arctic SDI Nations have provided expert review and detailed evaluations to help improve and guide development of the derivative product data generation processes and - on a bilateral basis - provided ground control points and other digital map data to support improvement of the final product.

In summary, the Arctic SDI enthusiastically supports this work to develop a first generation Pan-Arctic DEM product and the opportunity to work together with the US lead effort to recommend that the Arctic Council endorse the PGC *ArcticDEM* as a first generation Pan-Arctic DEM. This PGC product, when released, will be a huge first step and offer a significant advancement in the availability of coherent Arctic elevation data to serve the Arctic science community, and provide a strong first generation product for many science activities. Additionally, development of this data set is aligned with the Arctic SDI strategic goals by providing, for the first time, an informative reference layer of 2-meter resolution elevation data for the entire Arctic.

As a first generation Arctic DEM the PGC *ArcticDEM* provides a major step forward and is a significantly important contribution to both the national and international mapping of the Arctic. The Arctic SDI further notes that:

¹ Arctic Spatial Data Infrastructure <http://arctic-sdi.org>

1. At present no public access to the satellite images used in the production is provided and some proprietary control is used.
2. The development of the PGC *ArcticDEM* is still in process and the Arctic SDI Board will consider further steps regarding development and delivery of an Arctic SDI authorized, authoritative elevation dataset when the final PGC *ArcticDEM* is released and schemes for data distribution and regular updating have been fully established.

Sustained effort across all Arctic Nations will be required in the future to further develop, maintain, and meet the demands for a coherent, enhanced and updated elevation dataset for the Arctic based on nationally authoritative elevation data.