

 **Location:** Linfield Family Colloquium Room,  
Jennie Smoly Caruthers Biotechnology  
Building, University of Colorado Boulder

 **Date:** October 31-November 1, 2018

 **Last Updated:** October 4, 2018

# ICESat-2 Benchmark Meeting Prospectus

## Background

The Applications Team is planning an Early Adopter (EA) Benchmark meeting for October 31 and November 1 at the University of Colorado Boulder, to discuss benchmark strategies to quantitatively measure, to the extent possible, improvement in processes and performance to the EA models, forecasts or analyses attributed to the use of ICESat-2.

On September 15, 2018, the NASA Ice, Cloud and land Elevation Satellite-2 mission launched from Vandenberg Air Force Base and begun its journey to provide us with spatially dense and fine precision global measurements of our earth's surface elevation. Since fall 2013, when the ICESat-2 mission welcomed its first Early Adopter, the Applications Team has been facilitating feedback between the Project Office, Science Definition Team (SDT) members, the National Snow and Ice Data Center Distributed Active Archive Center (NISIDC DAAC) and EAs to help them prepare for the upcoming data in support of their different decision making scenarios. In February 2018, the Applications Team conducted a series of thematically directed round tables to get all Early Adopters up to speed on the latest developments for their primary science data products of interest and on the same page about what the data will look like and how it is expected to perform. The Benchmark Meeting provides a space to discuss and develop Early Adopter benchmarking strategies that can help express the quantitative value of using ICESat-2 for diverse set of end use applications.

The objective of benchmarking is for each organization to compare their pre-ICESat-2 data integration activities to those that are produced after that integration. We will discuss during the meeting how each metric used in benchmarking is specific to the organization's own context, as well as how improvements to the benchmark means better performance or delivery of a service. By planning for a benchmark metric before the ICESat-2 data is available, each Early Adopter organization will be prepared to conduct a meaningful evaluation of the value of the data.

Co-hosting the Benchmark meeting are the NSIDC and United States Arctic Observing Network (U.S. AON). The NSIDC will manage, distribute and support ICESat-2 science data and during the meeting will discuss the services developed for accessing the science data products. The U.S. AON promotes sustained and well-defined networks of Arctic observations through collaborative development across U.S. Federal agencies and other partners. The U.S. AON will discuss a current initiative with the Science Technology Policy Institute to develop "value trees" for Arctic observing systems at weather/forecasting scales. Together, the NSIDC and U.S. AON will set the stage to discuss readiness and value for the impending ICESat-2 data.



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The Benchmark Meeting will also introduce participants to the Valuation of Applications Benefits Linked with Earth Science (VALUABLES) Consortium and their Value of Information (VOI) Assessment Framework. NASA's Earth Science Division (ESD) Applied Sciences Program selected the VALUABLES consortium for the solicitation, [Earth Science Applications: Socioeconomic Benefits](#). The key objective of this solicitation was to advance analytic techniques to quantify the impacts (in economic and social terms) from uses of Earth observations in management, policy, and business decisions and activities. Discussion of the VOI Assessment Framework will help in framing the benchmarking strategies discussed during the meeting and will facilitate future identification of the ramifications, in terms of socioeconomic impacts to systems, decision processes, and target communities, of having used the ICESat-2 observations.

## Objectives

Overall, the objectives of the Early Adopter Benchmark Meeting are to:


- Define the purpose of the benchmarking process and discuss the questions needed answered.
- Gather and discuss Early Adopter benchmarking strategies and metrics for using ICESat-2 and expected and potentially quantifiable outcomes.
- Identify any updates to Early Adopter methods for taking-in post-launch data when available.
- Lay the groundwork for a Phase E comprehensive Early Adopter case study to assess the impact of using ICESat-2 for different decision processes and target communities.
- Communicate status of ICESat-2 mission and planned NSIDC support services to access science data products
- Introduce the U.S. AON and Science Technology Policy Institute “Value Mapping” initiative and the VALUABLES Consortium Value of Information Assessment framework.


## Expected Outcomes


The Benchmark meeting will allow for an in-depth discussion of the benchmarking strategies characterized for each of the Early Adopter projects. **Early Adopters will identify and develop relevant metrics to measure improvements from the use of ICESat-2 and set the minimum threshold of performance based on pre-launch expectations for the data.**

Insights from the U.S. AON and VALUABLES consortium on assessing the value of information will advance best practices and potential process improvements in measuring the socioeconomic benefits of Earth observations.



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## Audience

The Benchmark meeting will welcome participation from the ICESat-2 Early Adopters, their end-user point-of-contacts, ICESat-2 Science Definition Team, and representatives from NSIDC, U.S. AON, the ICESat-2 Project Science Office, SMAP mission, NASA Goddard Applied Sciences, and NASA Headquarters.