

National Snow and Ice Data Center

Data Acceptance Plan for the NSIDC DAAC



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CHANGE LOG

Revision	Date	Description	Author
1.0	9/15/2008	Original draft	Weaver
1.1	3/19/09	Revisions	Weaver, Duerr
2.0	2/15/09	Revisions, distributed to UWG	Weaver, Duerr
3.0	4/6/09	Revisions, internal to NSIDC	Weaver, Duerr
4.0	4/9/09	Revisions, distributed to UWG 4/15/09	Weaver, Duerr, Leon, Miller
5.0	7/30/09	Split Levels of Service section into its own document and updated example tables	Duerr
6.0	3/19/10	Updated Appendix A so that it's contents can be used as the data documentation (at the lowest level of documentation support)	Duerr, Leon, Miller
7.0	10/1/10	Changed the data accession process to also include an executive session for the UWG once the material is presented and a decision is now needed. Revisions accepted, distributed to UWG via website	Duerr, Weaver

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1.0 Introduction

1.1 Purpose and Scope

The purpose of this Data Acceptance Policy is to ensure that non-EOSDIS approved¹ data and products submitted to the NSIDC DAAC for archive and/or distribution are vetted and reviewed to be scientifically valid and viable for research applications. The scope of this process is limited to the NSIDC DAAC only and does not set policy outside of the NSIDC DAAC but references those policies that apply to the NSIDC DAAC as a NSIDC managed and a NASA EOSDIS direct-funded task.

In addition, this Policy ensures that a NASA approved product review process is used to recommend data sets for inclusion into the EOSDIS supported collection of NSIDC DAAC Standard Data sets. This policy applies to all NASA approved non-EOS missions and projects, and all PI-Provided or NSIDC DAAC internally generated products.

This document describes procedures and processes for the introduction of new, non-EOS data sets into the NSIDC DAAC collection of standard data sets.

1.2 Objective

Background for this document comes from both the NSIDC draft data management policy and from discussions with EOSDIS and from the MEaSures program. The following is excerpted from the draft NSIDC Data Management Policy.

“Many data sets come to NSIDC as a result of PI offerings that are unrelated to any program. The Program Coordination Board (PCB) should review these data sets and determine their appropriateness within NSIDC and the appropriate program to which they should be affiliated.

NSIDC prefers that all data sets come to NSIDC with identified funding for their continuation and management. NSIDC recognizes that occasionally data of value to the cryospheric community become available for archiving, though without needed funding or support. When possible, the PCB or designated lead Program works with the data provider to identify possible future funding opportunities, such as data rescue or exchange. If the PCB or designated lead Program feels that the value of the data is great enough, the data are accepted as "orphan" and given a lower level of service to support it. (Please see Levels of Service.) The PCB or designated lead Program will continue to examine future funding

¹ EOS Mission data assigned to the NSIDC DAAC are not subject to this process.

opportunities to ensure the proper long-term management of the data at a full level of service. In the appraisal of new, PI-tendered data, the PCB considers the following:

- *Appropriateness to NSIDC's mission statement and collection scope*
- *Its relationship to other data archived at NSIDC and thus its ability to illuminate or increase the value of existing data*
- *The cost of archiving the data (including space and resource needs)*
- *The value in strengthening bonds with funding agents and other agencies*
- *Outreach opportunities that fit within the NSIDC Outreach goals and objectives*

Individuals associated with NSIDC, in the course of their research, data management, and data dissemination work, become aware of data deemed of value to NSIDC. Frequently these data are the results of current or planned research projects or fieldwork. NSIDC works with the individuals involved to determine the appropriateness of the forthcoming data, and the DD makes sure that proper data management policies are involved in the transfer of these data to NSIDC.

Data Exchanges

On occasion, NSIDC receives data from a data provider in exchange for NSIDC data products, to encourage international cooperation and dissemination of NSIDC data. The PCB's appraisal of these data determines their appropriateness within NSIDC and the appropriate program to which they should be affiliated. It is recognized that these data seldom have available funding for archival processes.

Other

NSIDC personnel create some data sets and data products within the collection scope of the Center in-house. The acceptance of these data sets requires the same process as does the acceptance of new data, and steps are taken to ensure a high quality product that maintains its ties, through metadata and documentation, to the original or raw data product.”

With respect to the NSIDC DAAC, four possible types of data are considered for management and distribution. These include:

- **EOS Approved Mission data and products**

NASA Science Mission Directorate (SMD) and EOSDIS approved mission data are accepted as part of the NSIDC DAAC standard or core data sets upon release by the Mission. Acceptance and public release of data is determined by the Mission Science Calibration and Validation team and declared for public release by the Mission Scientist. This process is documented within a mission-specific Mission and NSIDC DAAC **Interface Control Document (ICD)** and a **Data Management Plan (DMP)** or the NSIDC-ESDIS **Annual Workplan**. Likewise, data products received by NSIDC DAAC from NASA and EOSDIS approved data production projects, which are vetted by a Science Team prior to arrival at NSIDC DAAC, are by virtue of the agreement with NASA HQ and EOSDIS accepted as NSIDC DAAC standard products upon receipt from the provider.

- **Non-EOS Mission data and products**
- **NASA Principal Investigator provided data and products**
- **Internal products generated by the NSIDC DAAC**

These last three data and product categories will follow acceptance procedures as outlined below. All PI-provided and NSIDC DAAC generated data products might be initially be released within a test bed environment, (a.k.a. sandbox), for vetting when the DAAC deems this process cost effective and appropriate.

2.0 Controlling Documents

NASA HQ and ESDIS directives
NSIDC DAAC Policy Documents
Interface Control Document
Data Management Plan
NSIDC DAAC Annual Work plan to ESDIS

3.0 Data Acceptance Procedure for EOS Approved Mission Products

Agreements between the mission and NSIDC DAAC are completed and signed prior to mission launch and include the Interface Control Document and the Data Management Plan. Within these documents it is agreed that final responsibility for the quality of the data products and the authority for acceptance (i.e. introduction and public release) of NASA and EOSDIS approved mission data products into the NSIDC DAAC collection of standard data set rests entirely with the mission project scientist. Cognizant NSIDC DAAC Product Team personnel

then incorporate these mission data products into the NSIDC DAAC for archive, distribution, and operational support once the Mission delivers the data.

4.0 Data Acceptance Procedure for Principal Investigator, non-EOS Mission, and NSIDC Internal Data and Products

Several factors are used to evaluate a data set including scientific merit, uniqueness, cost to archive and distribute etc. From our perspective a major criterion to determine the resources needed is the level of service to be provided. The concept of Levels of Service (LoS) is described further in Section 4.1, while the general process for vetting new products prior to review by the NSIDC User Working Group and transferal of their recommendation to NASA with regards to product acceptance within the NSIDC DAAC is described in Section 4.2 below,

4.1 Levels of Service

NSIDC supports a range of services, broadly categorized as providing service to the user or for the data. Services for the user include the level of user support, data set software development, and data set documentation provided. Data services include services to ingest the data, to provide any required regular or on-demand processing, to archive the data, and to make the data available to users. To aid discussions with potential data providers, levels of services for each of these categories are described in the document “Levels of Service”. Additionally, within each category, the levels of service are generally described in order of increasing cost. In addition, depending on the needs of the data provider or user community, a wide range of value-added products or services may be developed as warranted. As part of the Data Acceptance process, each data set will be assigned levels of service in each category.

4.2 Data Acceptance Process

The general workflow proceeds from a Product Description submitted to the NSIDC DAAC for consideration (see Appendix A). An initial review by the NSIDC DAAC staff determines the degree to which the data set is scrutinized, with the ending step being a decision on status. An overview of the process is depicted in Figure 1. More details of each step are provided below².

² The workflow and diagram are adapted from a JPL Physical Oceanography DAAC document.

Step 1: Intake and Initial Review

- 1.1 The process begins with the submission of a request for NSIDC DAAC to consider archival and/or distribution of a data product or suite of data products. The PI provides the product related documentation and any product specific requirements using the template found in Appendix A.
- 1.2 The NSIDC DAAC Manager (DM) assigns the request to a NSIDC DAAC Product Team for review. The purpose of this initial review is to insure the integrity of the material received and that all needed materials and information have been received from the submitter. If not, the Product Team informs the submitter of the additional information needed.

Step 2: Initial assessment

- 2.1 Once a complete and accurate submission package is available, NSIDC conducts an initial science and resource requirements review with the relevant NSIDC DAAC Product Teams and resident discipline experts. The review covers the submitter provided list of requirements for the product as well as all supplied documentation and results in a preliminary assessment of the science value of the product as well as an initial recommendation of the level of service to be provided by NSIDC and an assessment of the costs to provide those services.

NSIDC Product Teams

Most of the data activities in the DAAC are handled through Product Teams, which typically include representatives from each of the specialty areas at NSIDC. In general a product team will include a technical writer, a user services representative, a scientist, a scientific programmer, a data operations representative, a product team lead, and other technical personnel as needed.

- 2.2 The Product Team updates the submission package with a summary of the outcome of the initial assessment (see Appendix A: Section 2) and provides the updated package to the NSIDC DAAC Scientist (DS) and/or DAAC Manager (DM) for disposition.
- 2.3 If severe cost, science, or other problems were reported, the DS/DM may reject the submission package. In that case, a report will be prepared for the submitter stating the reasons for rejection and identifying the problems that need to be fixed in order for the NSIDC DAAC to proceed further with the review process

Step 3: Initial User Assessment (Optional)

- 3.1 To obtain science user input on the product, DS and Product Team may suggest that the product be placed in a NSIDC Sandbox environment. In

that case, the DS sends a notice to the submitter advising them that the product will be placed in SANDBOX for further review by the UWG and appropriate users.

- 3.2 Sandbox Review process. The NSIDC DAAC sandbox is a password-protected FTP site, which allows users who have agreed to use products at their own risk and to provide feedback on those products.
- 3.3 The DS and Product Team update the submission package with a summary of the Sandbox results (see Appendix A: Section 2) and provides the updated package to the NSIDC DAAC Scientist (DS) and/or DAAC Manager (DM) for disposition.
- 3.4 If severe cost, science, or other problems were reported, the DS/DM may reject the submission package. In that case, a report will be prepared for the submitter stating the reasons for rejection and identifying the problems that need to be fixed in order for the NSIDC DAAC to proceed further with the review process

Step 4: UWG review

- 4.1 The DS and Product Team finalize the documents for review by the User Working Group (UWG) (see Appendix A).
- 4.2 The DM corresponds with the submitter and the UWG to set up a mutually agreeable day and time to hold the UWG review for the data set. This review can be accomplished by teleconference or at a face-to-face meeting as needed.
- 4.3 The UWG holds an executive session to consider whether or not to recommend that the product be archived by NSIDC.
- 4.4 If the UWG recommends that the product be archived by NSIDC, a letter of notification that includes NSIDC's estimated costs for supporting the Level of Services proposed for the product is prepared by the DS and DAAC Manager and sent to NASA HQ. Otherwise, a letter of summarizing the UWG recommendation against archival is sent to NASA HQ.

Step 5: HQ Action

- 5.1 If HQ accepts the UWG recommendation to archive/distribute the data, the DAAC Manager informs the PI that the product has been accepted for inclusion with the NSIDC DAAC's standard data sets for archive and/or distribution. If the SANDBOX option was used, the product is removed from the SANDBOX and standard procedures for distribution through NSIDC

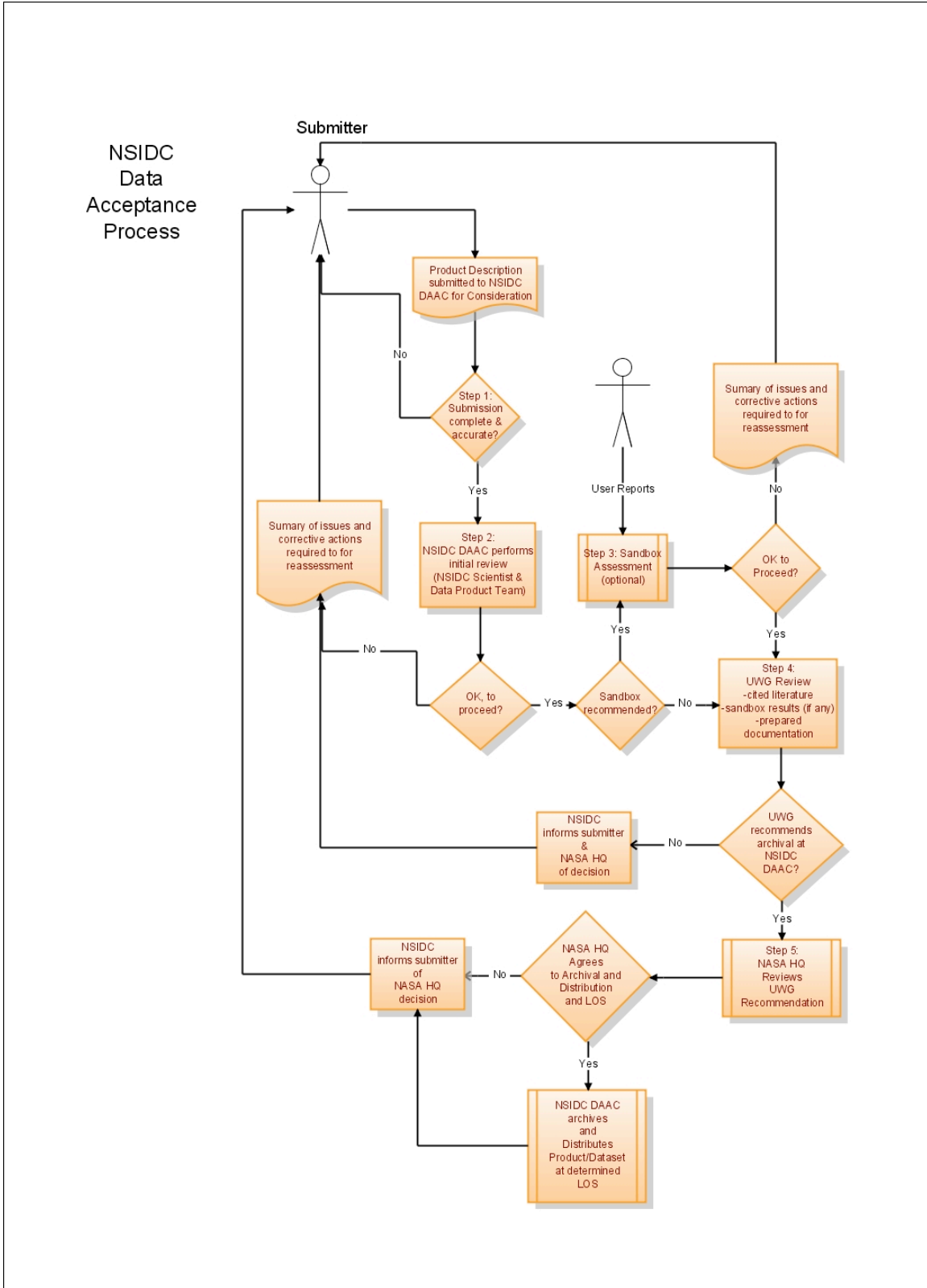
DAAC are established. Product rollout is the responsibility of the assigned Product Team.

5.2 However, if NASA HQ rejects the UWG recommendation that the DAAC archive/distribute the data, the DAAC Manager informs the PI of the HQ decision and may optionally help the PI locate another archive for the data. If the SANDBOX was used, the product is removed. No further action is needed from the NSIDC DAAC.

5.0 Data Acceptance Procedure for internally generated product

Data acceptance procedures for internally generated NSIDC DAAC products are the same as in Section 4 above. The distinction is that for internally provided products a NSIDC DAAC product team lead may act as the submitter in collaboration with a NSIDC scientist. In this scenario, to avoid conflict of interest, another product team becomes the cognizant team for the product. In addition, prior to development of the software for product generation, the concept, algorithm, requirements and software design will be reviewed.

Figure 1: Process Flow Diagram



Appendix A: Submission Template

Section 1: To be filled out by submitter/PI

Data Set Title:

Investigator(s) Name and Title:

Organization:

Contact Information:

Data Set Summary:

Data Description

Format:

File Naming Convention:

Volume:

Spatial Coverage:

Spatial Resolution:

Temporal Coverage:

Temporal Resolution:

Parameter Description:

Ingest Frequency: 1-time? Yearly? Ongoing?

Data Acquisition and Processing:

Quality and Accuracy:

Product algorithm theoretical basis:

References and Related Publications:

PI Justification:

Section 2: From DAAC Product Team/Scientist

Heritage:

Where did this data set come from?

Does NSIDC already have authorization or agreement to manage these data (EOS Program, DAAC)

DAAC Justification:

Anticipated Activity (any metrics?)

DAAC Total Anticipated Effort

Category	Desired State and Factor Descriptions	Work Difficulty	Adjusted Difficulty	Adjusted Totals
Archival	Desired State: Ongoing ingest			
	Additional Multiplicative Factors:			
	Adjusted Total			
Metadata	Desired State: Full catalog entry			
	Additional Factors:)			
	Adjusted Total			
Documentation	Desired State: Advertised with Full-Guide			
	Additional Factors:			
	Adjusted Total			
Distribution	Desired State: FTP + NSIDC Advanced Services			
	Adjusted Total			
User Services Infrastructure	Infrastructure Development Total	5		5
User Services Support	Desired State: USO Documentation Support			
	Additional Factors:			
	Adjusted Total			
Grand Total				

Section 3: Proposed Recommendations from the UWG

Comments on Science research value (e.g., comments on potential designation as a Climate Data Record or Earth Science Data Record)

NASA Data Management Priority (e.g., keep, move to other center, move to long term archive, remove)

UWG Recommended Actions

Status (accept, reject, return for more information)

Levels of Service/Type of Service

Appendix B: NASA DIF Metadata Fields

Preliminary DIF entries

DIF Fields (REQUIRED)

ENTRY ID Is this the DIF ID?
ENTRY TITLE
PARAMETERS (SCIENCE KEYWORDS)
ISO TOPIC CATEGORY
DATA CENTER
SUMMARY
METADATA NAME
METADATA VERSION

DIF FIELDS (HIGHLY RECOMMENDED)

DATA SET CITATION
PERSONNEL
INSTRUMENT
PLATFORM
TEMPORAL COVERAGE
PALEO-TEMPORAL COVERAGE
SPATIAL COVERAGE
LOCATION
DATA RESOLUTION
PROJECT
QUALITY
ACCESS CONSTRAINTS
DISTRIBUTION
DATA SET LANGUAGE
DATA SET PROGRESS
RELATED URL
DIF REVISION HISTORY