Establishing Levels of Service Within NCAR: ACADIS Case Study

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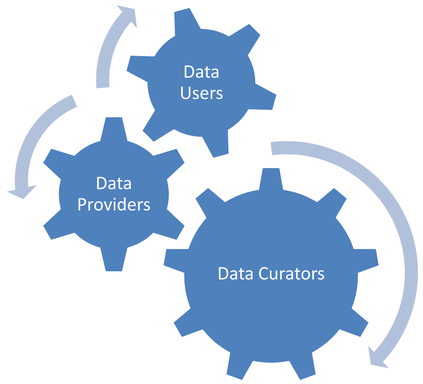
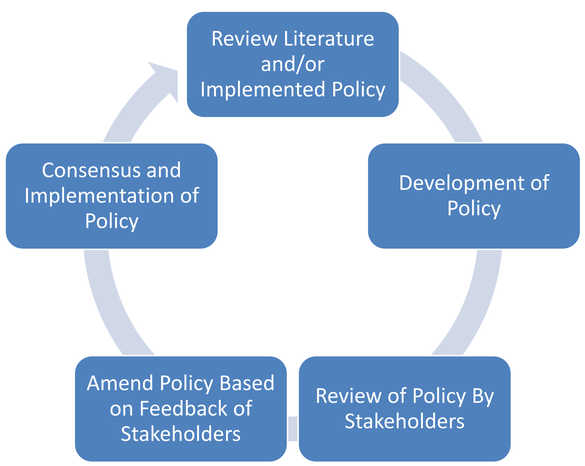
Introduction

The purpose of this case study is to establish a framework for creating a levels of service policy at National Center for Atmospheric Research (NCAR). The Advanced Cooperative Arctic Data Information Service (ACADIS) is the exemplar to demonstrate how a levels of service policy is implemented within an NCAR group.

Interaction of Selected Actors



LOS Process Development



ACADIS Levels of Service Matrix

Category/LOS	General	Special	Unique
Archive or Repository	NSF funded Arctic researcher/data provider possesses the ability to archive data into the ACADIS Gateway. The data provider establishes an account through the ACADIS Gateway, and the data curators approve data provider's account. The data provider uploads the data set into the ACADIS Gateway that displays the data set for data users to access.	Non-NSF funded Arctic researcher/data provider seeks permission from the data curators to deposit data into the ACADIS Gateway.	The data provider requests that EOL Arctic data set be archived due to risk of losing data. The data curators determine value of data and perform curation services (e. g. access, copy, establish access permissions) to ensure data access for data users.
Metadata	The ACADIS Gateway requires that the data provider complete a minimum of seven metadata fields before data set is accepted for submission by the ACADIS Gateway.	The ACADIS Gateway permits and the data provider provide additional metadata information and/or the data curators can assist the data provider in the authoring and preparing of the metadata record.	The data curators create, modify, or transfer metadata to the EOL Arctic Field Project Archive.
Documentation	ACADIS Gateway makes a readme file template available and the data provider submits the metadata and data. However, a data provider is not obligated to submit a readme file with her/his data set submission to the ACADIS Gateway.	The data curators author and prepare the readme file for the data provider. The data curators upload the readme file with the associated data set to the ACADIS Gateway.	The data curators create, modify or transfer readme or other non-metadata files to the EOL Arctic Field Project Archive.
Quality Control	The data provider provides quality control metadata, but the ACADIS Gateway provides metadata validation (example: ensures the accurate entering of latitude and longitude data).	The data curators provide quality control to data providers on request to check metadata, ensure the readme file is consistent with the data set.	The data curators consult with the data provider to ensure data files and metadata are complete and correct. The data curators may ensure the readability of processed data.
Distribution & Retrieval	The ACADIS Gateway makes the data set, metadata, and other information available to data and metadata users through the ACADIS Gateway's web interface. The data and metadata users retrieve the data set and other information via the ACADIS Gateway.	Data users access the data through the ACADIS Gateway, but the data is discoverable through metadata that is harvested from the EOL Arctic Field Project Archive Server. The ACADIS Gateway serves as the public distribution but the EOL Arctic Field Project Archive is the authoritative source of the data.	The data curators will create a special web interface (beyond the normal ACADIS Gateway web interface) for a data provider so that data users to access and use the data set, readme files, metadata, and other information.
Long-Term Preservation	The ACADIS Gateway uses Chronopolis to annually capture a snapshot of entire ACADIS Gateway Archive. The captured data is rarely manipulated by ACADIS once the data is in a long-term preservation state.	The data curators place data and related files on the NCAR HPSS Tape Storage System.	The data curators place data and related files on the NCAR HPSS Tape Storage System.
User Services	The data curators provide basic user services to data providers (initial project consultation, repository submission requests from non-NSF Arctic researchers/data providers, ACADIS Gateway technical issues) and users (request for basic information, ACADIS Gateway technical issues).	The data curators provide the data provider with data organization, project consultation, enhanced web interface services for data sets, and assists the data provider with complex requests for information.	The data curators provide the data provider with data organization, project consultation, enhanced web interface services for data sets, and assist the data providers with complex requests for information.

ACADIS Levels of Service Actors and Definitions Table

Actor	Definition
Data Provider	The scientist/principal investigator and/or individual appointed by the scientist/principal investigator to submit a data set to the ACADIS Gateway.
Data curators	The individuals within ACADIS responsible for data curation services.
Data User	Individuals that use the ACADIS Gateway to extract or obtain information from data sets stored within the ACADIS Gateway.
Metadata User	Individuals or machines that harvest metadata information to make ACADIS data sets discoverable for data users to use.
ACADIS Gateway	A machine technology that automates certain functions and provides digital storage to store data sets along with associated metadata, documentation, and other information. This also serves as the "front door" access to the Arctic Field Project Archive.
EOL Arctic Field Project Archive	The Arctic Field Project Archive serves as a repository for unique Arctic data sets managed by the Earth Observing Laboratory (EOL).

ACADIS Levels of Service and Categories Table

Category	Definition
General	This is the level of service regularly provided by ACADIS to all NSF funded Arctic researchers.
Special	This is the level of service where ACADIS provides enhanced services to data providers. After an individual evaluation, some special cases may revert to a general level of service.
Unique	This is the level of service where ACADIS provides individualized services on a case by case basis.

ACADIS Levels of Service Variables and Definitions Table

Variable	Definition
Archive or Repository	The initial storage of data set, readme file, metadata, and other information provided by a data provider.
Metadata	Information provided to make the data set discoverable to data and metadata users.
Documentation	Information (readme files) provided to assist data users to analyze and understand data files.
Quality Control	Quality control refers to the checking and monitoring of completeness and correctness of metadata submitted to ACADIS.
Distribution & Retrieval	ACADIS distributes information through the ACADIS Gateway or through other methods. The data or metadata user discovers and can download data.
Long-Term Preservation	This refers to the storage of data with a focus upon integrity of data over time.
User Services	ACADIS provides project consultation, data organization, repository acceptance, and request for information.

General Recommendations for Levels of Service Policy

- Collaboration amongst the stakeholders involved in data use process
- Continual review of the levels of service policy
- Review other data repository organizations level of service policies while constructing or refining levels of service policy
- Define all actors, categories, and variables so that there is a common understanding of the levels of service matrix components
- Ensure that there is a clear distinction between the different levels of service
- Understand that no two levels of service policies are identical due to unique nature of organizations & data

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