

Improving the Review of Scientific Data for Public Dissemination

Robert R. Downs

Center for International Earth Science Information Network (CIESIN),
Columbia University,
rdowns@ciesin.columbia.edu

Prepared for Presentation to the
2014 Summer Meeting of the
Federation of Earth Science Information Partners

July 8-11, 2014, Frisco, Colorado
Poster Session, Wednesday, July 9, 2014

SEDAC User Working Group (UWG) and NASA Review

Criteria

Value to the overall SEDAC user community or to high priority user groups or applications. SEDAC Strategic Plan and annual work plans.

Relevance to SEDAC mission areas and strategic priorities, expected or known limitations of the proposed product, and approximate level of effort.

Target user community, user needs and SEDAC mission areas and priorities to be addressed, input data needed, methods and algorithms, characteristics of the products, ancillary products and services, general timeline, approximate level of effort, staffing profile, proposed quality control and review process, including internal testing by SEDAC staff followed by an open beta review targeting specific experts and users.

Maturity of the data and methods used, appropriate documentation on data quality and fitness of use for different purposes, any special or unusual quality requirements or characteristics of concern, and the tradeoff between timeliness and time delay.

Additional review by selected external partners and users or submission of a paper (or the data set itself) to a peer-reviewed journal.

Usability, documentation, metadata, caveats on data limitations or guidance on appropriate (or inappropriate) data use.

Procedure

SEDAC managers and task leads review relevant literature, online resources, and national and international projects and programs to identify new data sets or applications for dissemination.

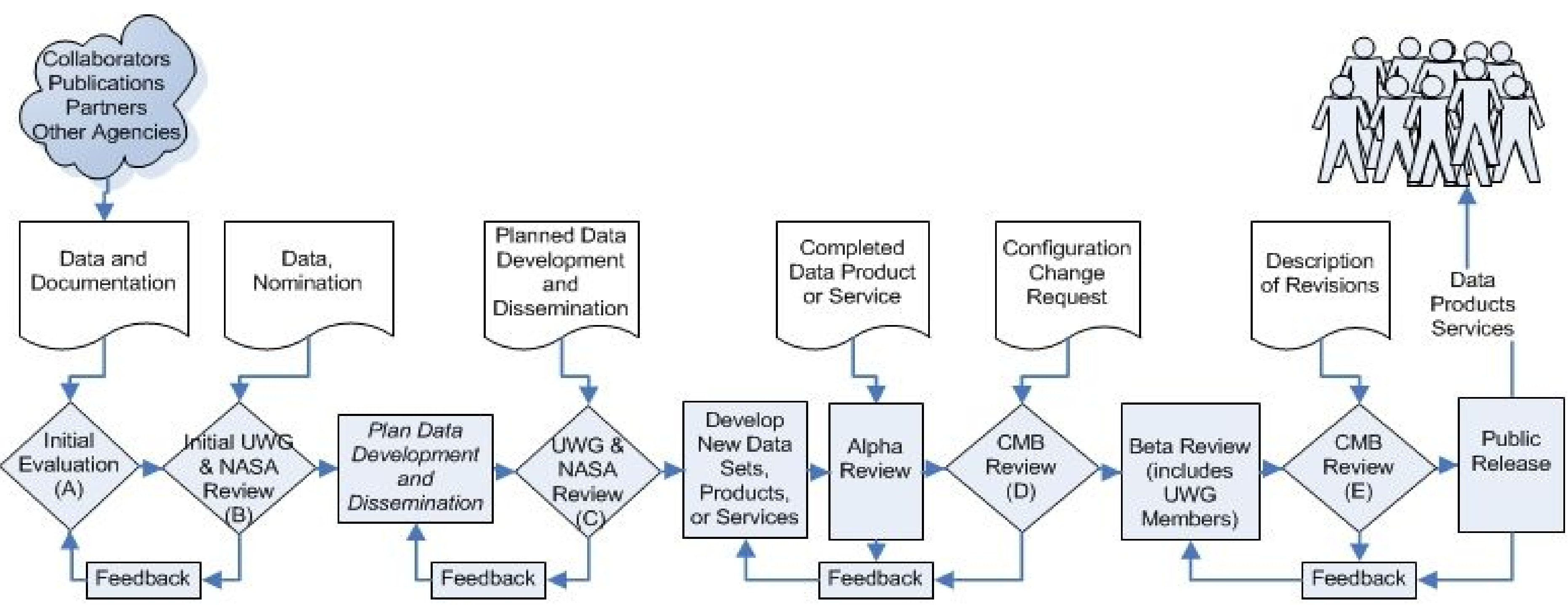
SEDAC UWG and NASA representatives evaluate data nominations, prior to the scheduled data evaluation meeting, by reviewing a concept description of the proposed data, use-case scenarios, methodology, and associated value-added or development activity.

SEDAC UWG and NASA representatives convene to discuss and evaluate each dataset concept nominated along with the activities proposed for dissemination. Questions, criticism, and suggestions for improvement are offered for each dataset and activity.

For approved concepts, SEDAC develops a detailed development and dissemination plan that is evaluated by the SEDAC UWG and NASA representatives prior to a convened meeting where a vote is taken on the plan and formal approval is prepared and sent to SEDAC managers.

SEDAC UWG and NASA representatives participate in beta reviews.

Abstract: Establishing specifications for the review of scientific data can contribute to the quality of data products and services that are disseminated. Data reviews can take many forms. Ideally, specifications for the review of scientific data include the criteria and the procedures to be employed for conducting such reviews. Specifying and documenting the criteria and procedures for reviewing scientific data enables documentation of the review that was completed for a particular dataset, application of the same criteria and procedures for reviewing multiple datasets over time, and identification of opportunities for improving the criteria and procedures employed for reviewing scientific data. The criteria and procedures for reviewing scientific data at the NASA Socioeconomic Data and Applications Center, SEDAC, are described along with recent improvements that have contributed to the quality of scientific data disseminated by SEDAC.



- A. Task and subtask leaders identify and evaluate data for potential development, dissemination, and use and are responsible for shepherding the data through the rest of the process.
- B. UWG review to confirm targeted community, potential value, and relevance to current missions.
- C. UWG review of planned development and dissemination of data products or services to assess development plan, relevance to current SEDAC goals and mission areas, documentation of review, and potential usefulness to community.
- D. Configuration Management Board (CMB) review of data products or services for quality assurance and quality control, prior to beta testing.
- E. CMB review of data products or services for completion of requested revisions, prior to public release.

Category 1: SEDAC-developed data (SEDAC develops data sets of high value to its user community).
Category 2: Value-added third-party data (SEDAC integrates acquired data into a product or service).
Category 3: CIESIN-developed or redistributed third-party data (SEDAC creates discovery and archival metadata and sometimes conversion to alternative distribution formats).

Derived from: SEDAC Review for Type 1 Data and Type 2 Data – Flowchart. SEDAC Guidelines for Data Review Prior to Public Release. NASA Socioeconomic Data and Applications Center (SEDAC), 2012. Palisades, NY: Center for International Earth Science Information Network (CIESIN), Earth Institute, Columbia University.

Configuration Management Board (CMB) Review

Criteria

Relevance to mission and work plans.
Usability by general audiences.
Resolution of restrictions or constraints.
Identification of user needs and support.
Completion of archiving and metadata.
Correctness of all information presented.
Completion of alpha and beta testing.
Results of all reviews have been resolved.

Procedure

Requester describes product or service to be disseminated.
Request includes results of reviews previously completed.
Board Representative reviews and submits request to CMB.
CMB members comment on the request for dissemination.
Each comment is recorded as an Action Item to be completed.
Each Action Item is assigned to a staff expert.
Upon completion, each Action Item is reviewed and closed.
Dissemination is approved when all Action Items are closed.

Derived from: Configuration Change Request (CCR) Form Version 2.0. NASA SEDAC, 2006. Palisades, NY: CIESIN, Columbia University.

