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Earth Science Data Systems (ESDS) Program, HQ SMD

Advancing Collaborative Connections for Earth System Science (ACCESS)

Cooperative Agreement Template

Version 1.0

Advancing Collaborative Connections for Earth System Science (ACCESS) Cooperative Agreement

The Cooperative Agreement is a financial assistance instrument used to stimulate or support activities for authorized purposes and in which the Government participates substantially in the performance of the effort.

This template is for the Cooperative Agreement used by NASA HQ's Earth Science Data Systems (ESDS) Advancing Collaborative Connections for Earth System Science (ACCESS) competitive programs. It provides an overview of the competitive program and information about NASA Science Mission Directorate (SMD) and recipient responsibilities, project management structure, project reporting requirements and data rights. This template may be tailored to the specified program by the ACCESS Program Officer/Program Manager.

When applicable, Documentation and Reporting Standards and Open Source Software Development Plan Guidelines may be attached to the Cooperative Agreement as appendices.

Change History Log

Revision	Effective Date	Description of Changes
1.0	8/17/18	Baseline document

National Aeronautics and Space Administration Science Mission Directorate - Division of Earth Science

Advancing Collaborative Connections for Earth System Science (ACCESS) <<YEAR>>

Special Language and Requirements for Cooperative Agreement

Overview

The Earth Science Division (ESD) uses NASA's unique capabilities in space to study the fundamental Earth processes that power climate, weather, and natural hazards and the impact of those processes on the quality of life. In pursuit of its objectives in Earth science research, NASA is generating Earth system data of unprecedented quality and quantity and developing data processing and modeling capabilities to transform these data into products, information, and, ultimately, new knowledge of our planet.

The Earth Science Data System (ESDS) Program's Advancing Collaborative Connections for Earth System Science (ACCESS) complements NASA's capability of observing the Earth globally from space, air, land, and water by engaging competitively selected investigations in NASA's mission to "drive advances in science, technology, aeronautics, space exploration, economic vitality, and stewardship of the Earth" and aligning with Strategic Goal 2.2, to "advance knowledge of Earth as a system to meet the challenges of environmental change and to improve life on our planet" (http://science.nasa.gov/about-us/science-strategy/). The program aims to enhance and improve existing components of the distributed and heterogeneous data and information systems infrastructure that support NASA's Earth science research goals.

This cooperative agreement is for the project selected under the ACCESS solicitation, as noted in the NASA Research Announcement <<announcement #>>. The end date of the cooperative agreement is 24 months from the time of the award. The pre-award funding is approved for 90 days before the effective date of the new award. Funds used more than 90 days before the new award are always at the Recipient's own risk.

Cooperative Agreement Responsibilities

NASA SMD shall be responsible for providing to the Recipient:

- When applicable, details on participation in specific science community meetings and conferences pertinent to this ESDS Program's ACCESS Program award.
- The URL to the Earthdata Wiki for submitting reports and reporting on project milestones and other project activities.

- Documentation on standards and interfaces pertaining to products (data, software, algorithms) generated by ACCESS Program, if applicable.
- Timely feedback from pertinent NASA HQ management.
- Technical feedback from ESDIS management through reviews to identify suitability for NASA integration.
- Prior to the conclusion of the investigation, identification and designation of an EOSDIS location to which the recipient will submit the final versions of their technological developments and associated materials for inclusion. This responsibility applies only to projects that are certified by NASA's ESDS Program Executive, the Earth Science Data and Information Project (ESDIS) project, and the respective EOSDIS system for deployment.

The Recipient shall be responsible for performing the following prearranged objectives, as negotiated by NASA and the Recipient based on the Recipients' proposal in response to the ACCESS Cooperative Agreement Notice – ROSES <<YYYY>> <<project number>>:

- Meet all applicable U.S. Government-mandated standards for data products and information systems.
- Ensure that all data products include searchable metadata conforming to ISO 19115 Geographic Information - Metadata standards and adhere to the Metadata Requirements – Base Reference for NASA Earth Science Data Products document published at http://earthdata.nasa.gov/about-eosdis/requirements.
- Adhere to the Data and Information Policy for NASA's Earth Science program as described at http://science.nasa.gov/earth-science/earth-science-data/data-information-policy/.
- Provide a Data Management Plan (DMP) adhering to the specifications described at https://earthdata.nasa.gov/earth-science-data-systems-program/new-missions/data-management-plan-guidance for all data products generated by the project.
- Release all data, along with the source code for algorithm software, coefficients, and ancillary data used to generate products. Data and results will be archived at the NASA-assigned Data Center as indicated above.
- Adhere to the ESDS Open Source Software (OSS) policy described at https://earthdata.nasa.gov/earth-science-data-systems-program/policies/esds-open-source-policy.
- Provide an Open Source Software Development Plan as described in Appendix 2 via submission to the Earthdata Wiki.
- Release all software, along with source code, as open source software to https://github.com/nasa per the NASA Open Source Software (OSS) policy described at https://earthdata.nasa.gov/earth-science-data-systems-program/policies/esds-open-source-policy.
- Submit a list of expected project milestones within one month of project initiation.
- Submit a quad chart offering a brief description of the project, expected outcomes, and major milestones within one month of project initiation.
- Submit quarterly, mid-term, and final reports as indicated.

- Participate in a mid-term and final project-presentation as described in the document, "ACCESS Documentation and Reporting Standards" (also available on the Earthdata Wiki at https://wiki.earthdata.nasa.gov/x/kYe0Bg).
- Participate in the Earth Science Data Systems Working Groups at a level of 0.25 FTE, including attendance at the annual joint meetings.

Management Structure and Project Reporting

Management Structure

Ultimate oversight for this awarded Cooperative Agreement is NASA Headquarters' ESDS Program's ACCESS Program's Program Manager. NASA Headquarters will be responsible for reporting on activities and outcomes of this project to the appropriate Earth Science Division management. Management point of contact for the technical interfaces, metadata, and documentation to be implemented for data products developed under this agreement will be designated by the ACCESS Program's Program Manager.

The following sections summarize the required reporting for this awarded Cooperative Agreement. The reporting schedule is listed in Table 1 below. The detailed reporting requirements can be found in the attached document, "ACCESS 2017 Documentation and Reporting Standards" (also available on the Earthdata Wiki at https://wiki.earthdata.nasa.gov/x/kYe0Bg).

Project Reporting

A quad chart providing a brief description of the project, a one-page Milestone Document with expected outcomes, and an Open Source Software Development Plan will be submitted within one month of project initiation. A brief update (three (3) pages maximum) on project activities and progress will be provided by the Recipient approximately three (3) months from the project start date and every three (3) months until the completion of award. These "Quarterly Reports" should cover activities and progress made within the previous 3 months' timeframe. The reports shall address, but shall not be limited to:

- Technical status: Summarize accomplishments for the preceding months, including technical accomplishments, technology development results, and results of tests and/or demonstrations.
- Schedule status: Provide the status of major tasks (including completed tasks) and any variance from the planned versus the planned schedule; provide rationale for each delayed task along with recovery plans, as appropriate.

A Mid-Term Report and a Final Report will replace the fourth and eighth Quarterly Reports, respectively. Detailed instructions on the Mid-Term Report format will be provided by the ACCESS Program's Program Manager and can be found at https://wiki.earthdata.nasa.gov/x/kYe0Bg. The Final Report (which will be more detailed than the Mid-Term Report) will be submitted 24 months after the project's start date. Detailed instructions on the Final Report will be provided by the ACCESS Program's Program Manager and can be found at https://wiki.earthdata.nasa.gov/x/kYe0Bg. Recipients are responsible for

uploading reports (as PDF formatted files) to the Earthdata Wiki established specifically for the ACCESS Program projects. A link to the personal project space within the Earthdata Wiki will be provided to the Recipient before official project kick-off meeting with NASA HQ. Recipients will be provided an opportunity to discuss the contents of the reports with the ESDS Program Executive and ACCESS Program Manager during the Mid-Term Presentation and Final Presentation.

Technical Reviews will be held every six months via teleconference. These reviews provide an opportunity for ESDIS to review the project, provide technical feedback, determine suitability for NASA integration, and revise milestones. The second Technical Review will be combined with the Mid-Term Presentation. The fourth Technical Review will be held with the Final Presentation.

Detailed instructions on report formats will be provided by the ACCESS Program Manager and can be found in the Appendix and at <<Earthdata Wiki Link>>.

Table 1. Reporting Schedule

Schedule	Deliverables
Project Initiation	Project Milestones Form Quad Chart Data Management Plan Open Source Software Development Plan
+ 3 months	1st Quarterly Report
+ 6 months	2nd Quarterly Report 1st Technical Review
+ 9 months	3rd Quarterly Report
+ 12 months	Mid-Term Report Mid-Term Presentation & 2nd Technical Review
+ 15 months	5th Quarterly Report
+ 18 months	6th Quarterly Report 3rd Technical Review
+ 21 months	7th Quarterly Report
+ 24 months	Final Report Final Presentation & Final Technical Review Updated Data Management Plan Updated Open Source Software Development Plan

No-Cost Extension

The recipient may request a one-time no-cost extension, not to exceed 12 months, prior to the established expiration date. The recipient must apply for the no-cost extension through the NASA Shared Services Center at https://www.nssc.nasa.gov/nocostextension. Written notification of such an extension, with the supporting reasons and the progress report, must be received by the NASA Grant Officer at least ten days but no sooner than 30 days prior to the last

day of the period of performance. Failure to submit the necessary documentation and progress report may result in non-acceptance of the request or other enforcement actions as provided in 2 CFR 200.338.

If granted a no-cost extension, the recipient shall submit a Final Report ("Year 2 Report") and deliver a Final Presentation as originally scheduled (i.e., 24 months after project initiation). The recipient shall submit an additional, updated Final Report at the end of the no-cost extension period. All reports shall be submitted to the ACCESS Program via an established space in the Earthdata Wiki. A link to the Earthdata Wiki space established for report submissions shall be distributed to the Recipient prior to the official project kick-off meeting with NASA HQ.

Data Rights

1.0 Introduction

NASA wishes to provide standard rights in data provisions, as defined by the NASA Grant and Cooperative Agreement Handbook, for data related to information systems and services capabilities. However, to meet the objectives of this program, scientific data product algorithms and data products or services produced through the program shall be made available to the user community on a non-discriminatory basis, without restriction.

While NASA intends to protect Recipient's rights to data that embodies trade secrets or comprises commercial or financial information which is privileged or confidential, the decision to use such protected data in an ACCESS Program's project rests with the ACCESS Program's Program Manager. It is incumbent upon the Recipient to mark such data in accordance with the Data Rights Policy (outlined below).

2.0 Data Rights and Related Issues

Rights in Data
(December 2006, amended January 2012)

A. Introduction

NASA intends to protect Recipient's rights to data that embodies trade secrets or comprises commercial or financial information which is privileged or confidential. No data transfer or "cross fertilization" of concepts will be performed by NASA participants, should two or more cooperative agreements be awarded. While NASA will require that the data that embodies trade secrets or comprises commercial or financial information which is privileged or confidential generated by the Recipient be delivered to NASA for dissemination to employees of NASA, of JPL, and of appropriate support contractor personnel, such data marked with a suitable notice or legend will be protected for the 2-year period of exclusivity set forth in paragraph D.3 of this clause. Support contractor personnel will be provided access to such data generated as a part of these studies only under suitable protective conditions and use by support contractor personnel will be limited to governmental purposes only.

B. Definitions

1) "Data" means recorded information, regardless of form, the media on which it may be recorded, or the method of recording. The term includes, but is not limited to, data of a scientific or technical nature, software and documentation thereof, and data comprising commercial and financial information.

2) "Computer Data Base" means a collection of Data in a form capable of being processed and operated on by a computer through the use of a computer program performing the function of storing, manipulating, or formatting. A "computer data base" is not software.

3) "Metadata" means information about a Data set provided by the data supplier or the generating algorithm and which provides a description of the content, format, and utility of the Data set. Metadata provide criteria, which may be used to select Data for a particular scientific investigation.

4) "Object Code" means machine language, i.e., that programming language directly readable by a computer.

5) "Software" means computer programs (a set of statements or instructions, in object code, to be used directly or indirectly in a computer in order to bring about a certain result), source code, source code listings, and design details, algorithms, processes, flow charts, formulae and related material that would enable the software or a functionally equivalent software to be reproduced, recreated, or recompiled, regardless of the form or media on which such information is recorded.

6) "Software Documentation" means Data that explain the capabilities of the software, or provide operating instructions for using the software, to obtain the desired results from a computer such as: (a) owner's manuals, (b) user's manuals, (c) installation instructions, (d) operating instructions, and other similar items.

C. Data Products

1) "Scientific Data" means Earth system science products, with accompanying metadata and quality assessments, made available through production or services provided by the project. Some examples of Scientific Data include: geophysical parameters, such as sea surface temperature, sea surface height, atmospheric pressure/temperature levels, precipitation, atmospheric chemical species and aerosols, ice sheet mass balance, and various terrestrial surface measurements.

2) "Scientific Computer Data Base" means a collection of Scientific Data.

3) "Scientific Software" means software used for processing raw Earth Observation remote sensing instrument Data into Scientific Data.

4) "Information System Software" means software produced as part of the project pursuant to the technology objectives of this Cooperative Agreement that comprises any part of, access to, or management of Data in the data system of the project, or tools that access,

manipulate, or analyze Scientific Computer Data Base. Some examples of Information System Software include client/server applications, user interfaces, tools for selecting, manipulating and analyzing Scientific Data, and database management software.

D. Data Rights

1) Data exchanged between NASA and Recipient under this Cooperative Agreement will be exchanged without restriction as to its disclosure, use, or duplication except as otherwise provided below in this clause. In particular, rights in Scientific Data, Scientific Computer Data Bases, and Scientific Software, as defined in paragraph C of this clause, are provided under this paragraph D.1.

2) *Background Data*: (Recipient's and NASA's)
   a. Recipient: In the event it is necessary for Recipient to furnish NASA with Data which existed prior to, or produced outside of, this Cooperative Agreement, and such Data embodies trade secrets or comprises commercial or financial information which is privileged or confidential, and such Data is so identified with a suitable notice or legend, the Data will be maintained in confidence and disclosed and used by NASA and its contractors (under suitable protective conditions) only for the purpose of carrying out NASA's responsibilities under this Cooperative Agreement. Upon completion of activities under this Cooperative Agreement, such Data will be disposed of as requested by Recipient. A.27-3
   b. NASA: Earth Observing System Core System (ECS) Software - No license rights to the ECS software are granted or implied by this Cooperative Agreement. ECS software is being provided for Government purposes and may not be used for commercial purposes during or upon completion of this Cooperative Agreement. Upon completion of activities under this Cooperative Agreement, such Data will be disposed of as requested by NASA. Any modification to these rights will be expressly made through a separate written agreement.

3) *Data first produced by Recipient:*
   a. In the event Data first produced by Recipient in carrying out Recipient's responsibilities under this Cooperative Agreement is furnished to NASA, and Recipient considers such Data to embody trade secrets or comprise commercial or financial information which is privileged or confidential, and such Data is so identified with a suitable notice or legend, the Data will be maintained in confidence for a period of two years after completion of this Cooperative Agreement and be disclosed and used by the Government and its contractors (under suitable protective conditions) only for use as a tool for Government research by or on behalf of the Government during that period. In order that the Government and its contractors may exercise the right to use such Data for the purposes designated above, NASA, upon request to the Recipient, shall have the right to review and request delivery of Data first produced by Recipient. Delivery shall be made within a time period specified by NASA.
   b. In particular, rights in Information System Software, as defined in paragraph C of this clause, are provided under this paragraph D.3, except that object code shall be

treated under paragraph D.1 of this clause as Data exchanged without restriction as to its disclosure, use or duplication.

c. Within one month of the completion of this Cooperative Agreement, the recipient shall provide written documentation of its intent to commercialize "Data first produced by Recipient" under this Cooperative Agreement. If the Recipient intends to commercialize such Data, Recipient shall mark the Data with a suitable notice and NASA shall, to the extent permitted by law, maintain such Data in confidence for a period of two years after completion of this Cooperative Agreement. During the aforementioned restricted period, NASA will disclose such Data to third parties (under suitable protective conditions) only with the Recipient's written approval. After the restricted period expires, NASA shall have the rights specified in paragraph D.1 of this clause.
d. If the Recipient determines not to commercialize such Data (or otherwise make the data available to the user community, such as "open source"), or if the Recipient fails to provide written documentation indicating its intent to commercialize the Data, Recipient agrees that NASA shall have the rights specified in paragraph D.1 of this clause and all such Data can be made available without restriction as to its disclosure, use or duplication. Alternatively, at NASA's option, NASA may require the recipient to assign any copyright in such Data to NASA or its designee.

4) *Data first produced by NASA:* Data first produced by NASA in carrying out NASA's responsibilities under this Cooperative Agreement that would embody trade secrets or would comprise commercial or financial information that is privileged or confidential if it had been obtained from the Recipient, will be marked with a suitable notice or legend and maintained in confidence for an agreed period of up to two (2) years after completion of this Cooperative Agreement, with the express understanding that during the aforesaid period such Data may be disclosed and used (under suitable protective conditions) by or on behalf of the Government for Government purposes only, and thereafter for any purpose whatsoever without restriction on disclosure and use. Recipient agrees not to disclose such Data to any third party without NASA's written approval until the aforementioned restricted period expires.

5) Copyright:

a. In the event Data is exchanged with a notice indicating the Data are protected as a published copyrighted work, or are deposited for registration as a published work in the U.S. Copyright Office, the following paid-up licenses shall apply:
   i. If it is indicated on the Data that the Data existed prior to, or was produced outside of, this Cooperative Agreement, the receiving party and others acting on its behalf, may reproduce, distribute, and prepare derivative works for the purpose of carrying out the receiving party's responsibilities under this Cooperative Agreement; and
   ii. If the furnished Data does not contain the indication of paragraph D.5.a.(i) of this clause, it will be assumed that the Data was first produced under this Cooperative Agreement, and the receiving party and others acting on its behalf, shall be granted a paid-up, nonexclusive, irrevocable, world-wide

license for all such Data to reproduce, distribute copies to the public, prepare derivative works, and perform publicly and display publicly, by or on behalf of the receiving party. For Data that is computer software, the right to distribute shall be limited to potential users in the United States.

b. When claim is made to copyright, the Recipient shall affix the applicable copyright notice of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship to the Data when and if the Data are delivered to the Government.

6) *Oral and Visual Information:* If information which the Recipient considers to embody trade secrets or to comprise commercial or financial information which is privileged or confidential is disclosed orally or visually to NASA, such information must be reduced to tangible, recorded form (i.e., converted into Data as defined herein), marked with a suitable notice or legend, and furnished to NASA within 10 days after such oral or visual disclosure, or NASA shall have no duty to limit or restrict, and shall not incur any liability for, any disclosure and use of such information.

7) *Disclaimer of Liability:* Notwithstanding the above, NASA shall not be restricted in, or incur any liability for, the disclosure and use of:
   a. Data not identified with a suitable notice or legend as set in paragraphs D.2.a., D.3.a., and D.3.c. of this clause; or
   b. Information contained in any Data for which disclosure and use is restricted under paragraphs D.2. or D.3. of this clause, if such information:
      i. is publicly available at the time of disclosure or thereafter becomes publicly available without breach of this Cooperative Agreement;
      ii. is known to, in the possession of, or developed by NASA independent of carrying out the NASA's responsibilities under this Cooperative Agreement;
      iii. is received from a third party having the right to disclose such information without restriction; or
      iv. is required to be produced or released by the receiving Party pursuant to a court order or other legal requirement.

E. Marking of Data

All Data or Information System Software object code created under this Cooperative Agreement, by NASA or the Recipient shall be marked with the notice provided below.

1) Copyright <enter year of first publication> <enter Participant's name OR United States Government as represented by the Administrator of the National Aeronautics and Space Administration, as applicable>. No copyright is claimed in the United States under Title 17, U.S. Code to any U.S. Government created work. This work has been developed under Cooperative Agreement with NASA and the Government has certain rights. This work is released without restriction as to its disclosure, use or reproduction. Software shall not be disassembled, reverse engineered, or made into human readable form.

2) This work is provided "as is" without any warranty of any kind, either express, implied, or statutory, including, but not limited to, any warranty that the software will conform to specifications, any implied warranties of merchantability, fitness for a

particular purpose, and freedom from infringement, and any warranty that the documentation will conform to the software, or any warranty that the software will be error free.

3) In no event shall NASA be liable for any damages, including, but not limited to direct, indirect, special, or consequential damages, arising out of, resulting from, or in any way connected with this work, whether or not based upon warranty, contract, tort, or otherwise, whether or not injury was sustained by persons or property or otherwise, and whether or not loss was sustained from, or arose out of the results of, or use of, the work provided hereunder.

F. Lower Tier Agreements

Recipient shall include this provision, suitably modified to identify the parties, in all subcontracts or lower tier agreements, regardless of tier, for experimental, developmental, or research work conducted under or in association with this Cooperative Agreement.