

Federation of Earth Science Information Partners Partnership Application

Please complete all sections to the fullest extent possible and forward completed application to: Carol Meyer, carol.meyer@earthsciencefoundation.org. If you have any questions, please contact her at 877.870.3747.

I. CONTACT INFORMATION

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II. ABOUT YOUR ORGANIZATION

A. ORGANIZATION/DIVISION/PROJECT NAME:

US Geological Survey/Core Science Systems/Community for Data Integration

B. OVERVIEW OF YOUR PRIMARY ACTIVITIES in regards to the Earth Sciences Community (200 words or less)

The USGS is a leading science agency of the United States government within the Department of the Interior. USGS data is centered on four major scientific disciplines in Earth Science: geology, hydrology, biology, and geography. The USGS is world renowned for its geologic and topographic mapping efforts, earthquake and hazards work, water quality and stream gage program, ecosystems science, and much more.

The USGS Community for Data Integration (CDI) incorporates the contributions of USGS employees and external partners into a community of practice focused on data integration issues. The Community's purpose is to:

- Advance understanding of earth systems through enhanced use of data and information and associated tools and techniques
- Provide a forum for data providers and consumers to develop more effective approaches to data integration
- Advance overall USGS capabilities with data and information by increasing visibility of USGS science

The Community includes partnerships in government, academia, and industry. Resultant exchanges of information and processes assists all involved in achieving science goals.

C. Please list and briefly describe the primary product(s) or service(s) that your organization provides (will provide) to the Earth Sciences community.

The USGS maintains myriad products and services that are available to the Earth Sciences Community. Some examples include:

- **National Streamflow Information Program (NSIP):** streamflow information and the understanding required to meet local, State, regional, and national needs.
 - **National Water Information Service (NWIS):** View current and historical streamflow, groundwater level, and water-quality data.
- **Earthquake Hazards Program:** information and products for earthquake loss reduction, including hazard and risk assessment, and comprehensive real-time earthquake monitoring.
- **Volcano Hazards Program:** monitors active and potentially active volcanoes, assesses their hazards, responds to volcanic crises, and conducts research on how volcanoes work.
- **Mineral Resources Program:** provides scientific information for objective resource assessments and unbiased research results on mineral potential, production, consumption, and environmental effects.
- **Energy Resources Program:** understand the processes critical to the formation, accumulation, occurrence, and alteration of geologically based energy resources to conduct scientifically robust assessments of those resources and to study the

impact of energy resource occurrence and/or production and use on both environmental and human health.

- **National Geospatial Program:** includes *The National Map*, a set of databases of map data and information from which customers can download data and derived map products and use web-based map services.
- **National Cooperative Geologic Mapping Program (NCGMP):** produces accurate geologic maps and 3-D geologic frameworks that provide critical data for sustaining and improving the quality of life and economic vitality of the Nation.

D. Please give a main website address for the proposed Partnership:

<http://www.usgs.gov> (USGS)

Web Address: <https://my.usgs.gov/confluence/display/cdi/Home> (USGS - Community for Data Integration)

III. HOW YOUR ORGANIZATION WILL BENEFIT FROM/CONTRIBUTE TO THE EARTH SCIENCE INFORMATION PARTNERS (ESIP) FEDERATION

- A. Describe current or anticipated users of your products and services and how you think the Federation can help you better serve this population. (200 words or less)

Users of USGS products and services are widely dispersed and range from scientists and researchers to policy-makers, land managers, academic professors, and the general public.

The ESIP Federation can help to better serve this population by providing a forum for USGS to demonstrate products, obtain feedback, and provide increased access to users. ESIP members represent a wide variety of Earth Science communities and will be able to provide valuable feedback from experts in a variety of science disciplines about USGS tools and resources.

Additionally, the ESIP Federation offers a forum for development of new partnerships with other ESIP members, an important aspect of the way in which the USGS conducts its work. Partnerships and collaborative activities are critical to accelerating scientific discovery and understanding of the Earth's natural systems.

- B. Describe any Earth science technologies that you have developed and are willing to bring to the Federation's efforts to provide best-practices. (200 words or less)

The USGS Community for Data Integration is just beginning its third year as a recognized entity within the USGS. It has developed several products of high value for USGS that include:

- Web services for better access to USGS corporate datasets through ArcGIS.
- A conceptual framework for loosely coupling environmental simulation models, based on open-standards and tools for upload, registry, and access for data used in simulation modeling.
- A data management website (in progress)
- A series of data management education modules (in progress)

These efforts have raised awareness of and grown consensus on different kinds of best practices. We would like to share these ideas with the ESIP community and to continue to mature them based on feedback from ESIP. Ultimately, the hope is to better serve ESIP and the general public with more relevant USGS science products.

Proposals for the upcoming fiscal year (2012) include mobile application development for earth science data and a data management framework for USGS that could be of possible use to other large agencies.

The products and services offered by the USGS as a whole, and described in the above question 2C, are available to share with the ESIP Federation and provide best practices.

- C. Describe how your proposed membership would contribute to the efforts and the mission of one or more standing committees, working groups and/or clusters. See Page 3 for descriptions of the different activities of the various standing committees, working groups, and clusters. (200 words or less)

The USGS Community for Data Integration includes members with interests and skills who can participate in and contribute to the ESIP Federation in the following topic areas: Web Services, Semantic Web, Data Preservation and Stewardship, Education, Information Technology and Interoperability, and Products and Services.

CDI has established Working Groups that loosely match ESIP sub-groups and thus overlap well. For example, the USGS CDI has a newly formed Semantics Working Group whose members can both contribute ESIP efforts and incorporate ESIP broader community goals to those of the USGS CDI Working Group. Additionally, the CDI Data Management Working Group and Technology Stack Working Group would be willing to collaborate and exchange ideas with ESIP Federation working groups and clusters.

For example, ESIP has a Data Stewardship Short Course Team working on curriculum for data management. This is an activity also currently in progress by a sub-team of the USGS CDI Data Management Working Group. It would benefit both communities to potentially combine efforts to make an even more successful product for the science community.

- D. Describe your own use of Earth science information and data and how you would see this use enhanced by your partnership in the Federation. (200 words or less)

As with many large, distributed science organizations, the USGS has excellent examples of data management practices, particularly for its large, corporate datasets. However, the organization also faces major challenges such that science data and information can be better accessed, described, reused, and integrated. For example, scientists are rewarded for publications and there is an underlying assumption that good data management is built into the process of doing science. In some cases it is, and in many it is not. Therefore, although the publication can be accessed, the dataset is not always archived and made available to the rest of the research community. This means there is a

great deal of data that is in need of rescue or is lost. There are efforts in place at USGS to change this paradigm, yet the opportunity to work within ESIP to learn about how other organizations have successfully solved this issue or how they are approaching it would be of great value to the USGS.

In addition to improving the production and sharing of USGS data with others, participation in ESIP promises to promote the use of externally created datasets within USGS workflows, improving conceptualization and execution of analysis and simulation modeling efforts. Further, engaging with ESIP members promises to increase the degree to which the USGS collaborates with other earth scientists and therefore increases the relevance of our products to those communities. These goals are especially important given lean economic times and increasing demands on limited natural resources.

IV. YOUR CHOICE OF MEMBERSHIP TYPE. PLEASE PICK ONE.

ESIP-I (primarily a data center/archive)

ESIP-II (primarily a research center)

ESIP-III (primarily applications and education)

ESIP-IV (primarily a sponsoring member)

V. Any other comments about your proposed membership and its relation to the Federation that you wish to provide.

The USGS has established relationships with other organizations that may be of interest to the ESIP Federation, such as DataONE (<https://www.dataone.org>), Oak Ridge National Laboratory (<http://www.ornl.gov/>) and Geosciences Information Network (GIN) (<http://usgin.org/>), Global Biodiversity Information Facility (GBIF) (<http://www.gbif.org/>), among many, many others. These recognized partnerships could potentially extend to ESIP in the future, enhancing the impact of the ESIP organization as it expands and develops.

Finally, as a federal agency, the USGS is subject to the following requirement: Membership in ESIP does not obligate the USGS or the United States Government to any current or future expenditure of resources either in advance of the availability of appropriations from Congress or when funds are available.

Thank you for your application for partnership in the ESIP Federation.

List of Federation Committees and Clusters

Administrative Committees

Executive Committee: Comprised of all standing and administrative committee chairs, ESIP Type Representatives, the President and Vice President of the Federation. Oversight body for most day-to-day activities of the Federation, acts on behalf of the Assembly between meetings.

Constitution and Bylaws: Provides counsel on matters related to the constitution and bylaws and other related issues (e.g. amendments to government documents)

Finance and Appropriations: Oversees financial resources of the Federation, including the annual budgeting process.

Partnership: Reviews and processes all applications for membership before making applications available for review by members of the Federation. Deals with other membership-related issues.

Standing Committees:

Commercial Development: Promotes a forum wherein commercial development of Earth science information can be fostered. (inactive)

Community Engagement: Provides a forum for the Federation to promote partner products and to engage new users for data products and services. (inactive)

Education: Provides a forum to make accessible to educators and learners at all levels in both formal and informal educational contexts the Earth science data, information, tools, and curricula available within the ESIP Federation.

Information Technology and Interoperability: Provides a forum for discussing information technology and interoperability issues of the Earth science community and serves as a central point for activities in this realm.

Products and Services: Provides a forum for defining best practices and defining requirements for earth science products and services. Currently is involved in developing an inventory of partner products and services.

Clusters (presently active, April 2009):

- Web Services
- Semantic Web
- Data Preservation and Stewardship
- Decisions
- Air Quality
- Federated Search
- Water