Federation of Earth Science Information Partners
MAKING DATA MATTER

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:
Southeastern Universities Research Association/Coastal Research/SURA Coastal Ocean Observing and Prediction Program

B. OVERVIEW OF YOUR PRIMARY ACTIVITIES (250 words or less)

The Southeastern University Research Association (SURA) is leading an initiative called the SURA Coastal Ocean Observing and Prediction (SCOOP) program. This multi-institution collaboration, funded by ONR and NOAA, brings together a diverse group of scientists with expertise in coastal and computer sciences. The SURA Coastal & IT Committees are leveraging SURA strengths in coastal and computer-science research, and SURA experience with IT infrastructure projects (SURAnet, NLR, etc). The SCOOP vision is to provide a community infrastructure that will advance the science of environmental prediction and hazard planning for our nation's coasts. The system involves a service-oriented architecture for predicting and visualizing coastal response to extreme atmospheric events, including the damaging and catastrophic effects of storm surge, inundation, and wind waves. Initial progress has been achieved in 3 thematic areas:

- Standards development and implementation – data exchange and access have leveraged community metadata and transport standards. SCOOP partners have worked to contribute to the community approach being implemented through the marine metadata initiative (MMI, www.marinemetadata.org);
- Data integration and visualization – the Open Geospatial Consortium specifications for Web services have produced huge benefit for "front-end" Web-mapping portals such as www.openioos.org, and SOAP services have been deployed for time series.
- Ensemble prediction – a core "use case" that motivates design requirements for the SCOOP architecture – involves real-time esemble forecasting and verification of storm surge and wind-wave response to hurricanes and storms. This "pre-operational" system offers practical value for hazard planning, provides new opportunities for advancing coastal science and computer science, and enables the transition from research to operations. R&D occurs with hardened and standardized technologies that undergo rigorous testing in an operational framework.

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

These products are being developed and implemented in the 2006 SCOOP work plan.

- User-Interface - serves as the user-entry point to a diverse set of tools including compute and data access.
- Directory - provides catalog services that enable discovery and location of data and resources throughout the system. Includes a relational database, a description of SCOOP data collections, file name conventions, characteristics, and configuration parameters for SCOOP-enabled models and metadata necessary to document model runs.
- SCOOP Portal - provides access to models, computing resources, data, and archives; serves as a collaboration platform to share data and models; enables management of user accounts, certificates and policies; provides tools for workflow orchestration, data and information search, and data visualization.
- Application Tool - a) Data Translation - user configurable format conversion, region and parameter subsets, point extraction and regridding - available regardless of the point of origin. B) Visualization - includes standardized interfaces and services for previewing results or meeting the needs of decision support tools.
- Management- includes application, resource, data, and archive management. 1) Application - enables resource management to select compatible options for specific applications among available resources; 2) Resource - coordinates the distributed (physical & virtual) resources to support various applications that run on the system; 3) Data - relies heavily on the SCOOP Catalog and directory services and coordinates with resource management to assure data make it to their intended destinations. 4) Archive - provide a backbone of the data infrastructure.

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

Web Address: www.OpenIOOS.org

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)

We anticipate users from both the research and operational sectors. The catalog, directory, and model components described above will be useful to coastal researchers both in academic and federal government settings. Enhanced real time predictions and visualization products for storm surge, waves, and inundation will be useful for emergency response managers at the federal and state level. In addition, prediction product users could include the shipping industry, the oil industry, recreational and commercial boaters, and coastal communities in general. The improved accuracy of predictions will benefit the nation if they can be adopted by operational agencies. Web mapping techniques used for visualization will make the SCOOP system accessible to the general public. Agencies involved in search and rescue response, chemical spill response, and homeland security will benefit from enhanced surface current maps.

In the short term, we at SURA/SCOOP see the ESIP Federation as an organization that draws together a unique community of environmental and IT experts for collaboration on a large scale, big-picture effort. SCOOP has both struggled with and made great strides in enabling communication between our own coastal science partners and IT experts and would like to broaden that communication and collaboration. In the long term, SURA/SCOOP is interested in learning more about the Earth Information Exchange being developed by ESIP. The exchange is a project that in some ways is similar to what we are trying to do - but on a much larger scale! The opportunity to exchange experiences, technologies, and lessons learned is something we and our partners would embrace. The 62 SURA universities located in the southeast contain some of the most forward thinking and capable computer and coastal scientists in the country and their knowledge and experience could in turn benefit ESIP. The longer-term hope is to establish a coastal observing “station” on the Earth Information Exchange and help expand ESIP’s horizons by integrating data that includes and goes beyond remote sensing data. SCOOP partners - some of which already belong to ESIP - would be exemplary liaisons to sit on committees as needed. The result could be products neither of us has conceived of for users we cannot at present envision.

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)

SCOOP partners in cooperation with NOAA Coastal Services Center have been instrumental in developing an interoperability test bed (www.openioos.org). That test bed has been updated over the last year to include real time data from a variety of disparate sources and used as input for coastal models. Both real time data and model predictions are displayed using graphical as well as GIS visualization products of storm surge and wave height. In addition, SURA is embarking on the development of the SURAgrid - a distributed set of resources and certificate authorities that could provide portals for running several types of applications.

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)

SURA/SCOOP partners could serve on the Standing Committee for Information Technology and Interoperability. In addition, we would propose a cluster for coastal ocean observations and prediction.

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)

The SCOOP vision is to support operational needs while becoming simultaneously interoperable with the

various research programs that emphasize other disciplines in environmental science, including meteorology (LEAD), hydrology (CUAHSI), ecology (NEON), and geology (GEON). The ESIP federation offers a unique opportunity to interact with these communities and generate discussions about how best to move forward with this vision.

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

ESIP-I (primarily a data archive center)	☐
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.

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.

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

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 Servic*es: 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 2005):

GIS

Intelligent Systems

Air Quality