E4.01  Innovative Tools and Techniques Supporting the Practical Uses of Earth Science Observations

Technical innovation and unique approaches are solicited for the development of new technologies and technical methods that make Earth science observations both useful and easy to use by practitioners. This subtopic seeks proposals that support the development of operational decision support tools that produce information for management or policy decision makers. Proposed applications must use NASA Earth Observations (see http://gaia.hq.nasa.gov/ese_missions/) Other remote sensing data and geospatial technologies may also be employed in the solution.

This subtopic focuses on the systems engineering aspect of application development rather than fundamental research. Offerors are, therefore, expected to have the documented proof-of-concept project in hand. Topics of current interest to the Earth Science Applications Directorate may be found at http://www.esa.ssc.nasa.gov. Innovation in processing techniques, include, but are not limited to, automated feature extraction, data fusion, and parallel and distributed computing which are desired for the purpose of facilitating the use of Earth science data by the nonspecialist. Ease of use, fault tolerance, and statistical rigor and robustness are required for confidence in the product by the nonspecialist end user.

Promotion of interoperability is also a goal of the subtopic, so Federal data standards, communication standards, Open Geographic Information Systems (GIS) standards, and industry-standard tools and techniques will be strongly favored over proprietary ‘black-box’ solutions. Endorsement by the end user of both system requirements and the proposed solution concept is desirable. While the proposed application system may be specific to a particular end user or market, techniques and tools that have broad potential applicability will be favored. An objective assessment of market value or benefit/cost will help reviewers assess the relative potential of proposed projects.