

## A.5.2 Applied Information Systems Research Program

### 1. Scope of Program

The Applied Information Systems Research (AISR) program conducts information systems research to apply new developments in computer science and information technology to improve and enhance ongoing support for OSS science programs. The specific goals of the AISR program are to:

- Increase the scientific return on research within all OSS science themes by making advanced tools and capabilities available for the acquisition and utilization of science data and information;
- Exploit advances in computer science and information technology for the benefit of space science; and
- Promote strong collaborations involving the space science community, computer science community, data system engineers and technologists, academia, and the private sector and technology innovators.

OSS seeks proposals through this program to apply state-of-the-art computer science and information technology to improve the understanding and effectiveness of OSS scientific research endeavors. The period of performance for solicited proposals may be from one to three years. Note that the AISR program now includes investigations previously supported under the Astrophysics Data Program Type 2 opportunity for applied research for tools for data analysis and/or data management, as well as data restoration efforts supported separately within a number of space science research discipline programs. Background information on the AISRP and abstracts for current investigations being conducted can be found on the World Wide Web at <http://www.hq.nasa.gov/office/oss/computer/aisr/aisr.html>.

### 2. Areas of Interest

OSS seeks innovative applications of information technology across a broad range of scientific areas, including:

- Science data analysis and visualization;
- Simulations, computational methods, and modeling in support of extracting science from NASA data sets;
- Science mining and exploration, including software technology, adaptive techniques, data compression, etc.
- Science planning and operations, including innovative concepts and ideas beyond current methods and processes for spacecraft/science operations;;
- Science data management, storage, and distribution; and
- Science data product generation for the benefit of a broader community of scientists.

Proposers are encouraged to propose original, innovative applications of information technology that will be more broadly applicable across multiple science disciplines and/or projects. Proposals that foster and facilitate interdisciplinary research, including tools that link multiple data sets and software to bring to bear on a science problem or problems will be given priority consideration.

### 3. Guidelines for Proposals

Proposals are expected to present a clear and concise description of:

- Specific objectives for the investigation, products to be developed, and work plan for accomplishing the proposed tasks; and
- Compelling justification for the endeavor and how it extends the forefront of capabilities, and its relevance and importance for space science research.

Note that the AISR program is intended to provide tools needed to conduct the space science research disciplines and not for that research itself. So there is not an emphasis on a project having a particular science goal, but the proposal should clearly demonstrate how it supports the needs of science community. Prospective submitters should also be aware that considerable tools and capabilities have been provided by previously selected participants in this program, as well as through other sources. Proposals should demonstrate how the proposed effort clearly extends the frontiers of capabilities in a fundamental and important manner rather than repeating or maintaining current capabilities. If a proposal is itself based on a previously funded effort, the proposal should identify that work, clearly summarize significant results from it, and demonstrate how the current effort is unique and/or extends the capability.

All resulting products developed under this program will be made openly available to the community at the end of the award period. Therefore, adequate documentation must accompany the product to allow use by the general community, which includes complete description of application, explanations of algorithms, user instructions, demonstration examples, etc. Proposals must clearly describe how they plan to assure the quality of such final products.

It is expected that successful products and capabilities resulting from this program will be registered in and made available through the Space Science Data Services (SSDS) infrastructure. Information on current resources, services, and data centers can be found at URL <<http://ssds.nasa.gov/>>.

#### 4. Programmatic Information

Total funding for the existing AISRP is nominally \$4M per year. Of the nearly 50 investigations currently funded, approximately 40% will expire in FY 1999.

NOTE: Appendix C contains critical information necessary for the preparation and submission of proposals submitted in response to this NRA. In particular, Section C.5.3 contains detailed standards concerning the format, page limits, and contents of a proposal. The submission of a proposal not in compliance with these standards may complicate and/or hinder its efficient and complete evaluation. Therefore, deficiencies in format and/or omission of key information may result in a proposal being found unacceptable for evaluation, or if evaluated, being adversely affected during the evaluation process.

The schedules for submission of the Notice of Intent and for proposals is given in Table 1 of the cover letter of this NRA. The World Wide Web site for submitting both the *Cover Page/Proposal Summary* (see Appendix C.5) is <<http://cass.jsc.nasa.gov/panel/>>; proposers without access to the Web or who experience difficulty in using this site may contact The Lunar and Planetary Institute by E-mail at <[panel@lpi.jsc.nasa.gov](mailto:panel@lpi.jsc.nasa.gov)> or by phone at (281) 486-2136 for assistance . Hard copies of the proposals are to be delivered to:

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