11 November 2015

To:

JPL/ C. Acton, Manager, NAIF
JPL/ D. Crichton, Manager, EN

From: NASA HQ/ SMD/PSD William Knopf, Program Executive for Planetary Data System, Planetary Science Division, Science Mission Directorate, NASA Headquarters

Subject: Call for Proposals – Planetary Data System Performance Review 2016.

Background:

As a matter of policy, NASA's Science Mission Directorate (SMD) periodically conducts comparative reviews or re-competes various Programs to maximize the scientific return from these Programs within finite resources. The last assessment of the Planetary Data System (PDS) Discipline Nodes occurred in FY 2015, and resulted in the establishment of new five-year awards (in the form of CANs, RTOPs, and IATs) starting in FY 2016. The NASA SMD Planetary Science Division (PSD) is reassessing the manner in which the Planetary Data System Nodes and supporting functions are reviewed and funded, in the context of the Performance Review process. To this end, a new PDS Performance Review peer process was initiated in the late spring of 2009. This approach took into consideration that: the scientific community is moving to a more integrated approach to the research and analysis of scientific questions; the use of diverse datasets in multiple wavelength regimes to perform said analyses; the growing accessibility of NASA data assets on the Web, and both the Planetary Science community's, and the general public's, expectations to find these data on the Web. Legacy datasets from NASA planetary missions are proving to be of inestimable value.

The second PDS Performance Review will be held Jan 26-27, 2016. This memo describes the objectives and process for the Review, and contains instructions for the submission of proposals and in-person presentations to the Performance Review panel.

Purpose of the Performance Review:

The purpose of this comparative review is a Performance Review to

- Explain the individual Node implementation strategy;

- give programmatic direction to the missions and projects concerned for FY17 and FY21;

- Define a decadal vision for standards evolution (data, software, documentation, operating procedures), new technology infusion, coordination and development of centralized system-wide software, coordination of data ordering and distribution, catalog development and implementation, and maintenance of the PDS catalogs.

The PDS Performance Review:

To maximize the scientific return from its missions. NASA routinely seeks the advice and counsel of the scientific community. User Groups deal with NASA's Planetary Science program by focusing on discipline- or theme-wide, sub-discipline, or mission specific issues. All proposals for use of data are thoroughly peer-reviewed. The PDS Performance Review, periodically, complements the standing User Group and other peer reviews by conducting an independent, comparative evaluation of mission research programs. The PDS Performance Review will evaluate proposals from PDS entities for continued and augmented funding.

Six PDS Discipline Nodes (Atmospheres, Geosciences, Cartography and Imaging Sciences, Planetary Plasma Interactions, Ring-Moon Systems, and the Small Bodies Node), were last reviewed in 2015. This Performance Review will include the Engineering and NAIF Support Nodes at JPL.

Note: EN and NAIF are Support nodes and may skip science discussion and/or address more engineering or service-related aspects of the PDS.

The charter for the 2016 PDS Performance Review is to assess the following:

1. Evaluate the release of PDS4 and associated documentation
2. Determine the adequacies to both archive and search the data in PDS4
3. Evaluate tools, especially for web page access, with focus on end-users
4. Evaluate the status for data delivery to the NSSDCA (deep archive) in PDS4
5. Evaluate the participation in the International Planetary Data Alliance
6. Itemize resource allocation (EN and NAIF separately)and show all funding
7. Outline the role of the User Centered Design function with EN and NAIF
8. Determine the Engineering Node's development and implementation process

Based on these assessments, provide findings to assist with an implementation strategy for PDS data curation and archiving for FY17 through FY21, including an appropriate

mix of

- continuation of projects as currently planned (in-guide);
- continuation of projects, with reductions to the current in-guide budget (85%);
- continuation of projects, with increases to the current in-guide budget (10%); and
- consolidation of projects and activities to enhance efficient management of limited budgetary resources.

Funding Environment:

To the best of NASA HQ's current knowledge, the FY16 appropriation and the President's FY17 budget request (including the out years) provide for approximately level or slowly *decreasing* support to the PDS program.

Planned Schedule for the PDS Performance Review:

The schedule for this review follows:

• Draft call for proposals (3 weeks)	October 16, 2015
• Call for Proposals issued:	November 11, 2015
• Proposals due:	January 12, 2016
• Pre-review Kickoff telecon for panel	Week of January 12, 2016
• Review:	January 26-27, 2016
• Publication of recommendations and Instructions to support nodes:	> March 1, 2016

Preliminary Instructions to Proposers:

The written proposal shall contain science, technical, and budget information, in accordance with the Proposal Template provided in Appendix A. The scientific, technical and budget sections shall be no more than 15 pages of writing and graphics. All pages are to be on 8.5 inch by 11 inch paper, with character (font) size not less than 10 points. Print (copy) the proposals double-sided. Thus if the scientific and technical/budget part of the proposal was 15 pages, it would be printed on eight 8.5" x 11" sheets of paper. You should submit a PDF version of the proposal with budget, and attachments to NSPIRES.

As noted in the Proposal Template, the optional Bibliography does not count against the 15-page limit. Also not included in the page limits are budget spreadsheets and a list of acronyms. Supporting material can be posted to http://pdsmgmt.gsfc.nasa.gov/pr2015/ as well as instructions to relevant URLs.

These submission instructions may be supplemented or superseded at a later date, if it proves feasible and secure to implement electronic submission of PDS Performance Review proposals.

Instructions for the Science Discussion:

In the science merit section of a proposal, please describe the science merit of your full Node and the specific contributions of the various activities within your Node (function), in the context of the desire of the Planetary Science Division to achieve a more thematic approach to the science archives as described in Vision and Voyages for Planetary Science in the Decade 2013-2022.

Instructions for the Technical and Budget Discussions:

Section 2 should begin with a discussion of the overall technical status of the components of the Node. This should include a presentation of significant accomplishments over the past two years, as well as usage metrics from community access to the PDS archives. In addition, specific focus on steps taken to improve data accessibility should be given, including the incorporation of mainstream search techniques and interfaces, in sections 3, 4, 5, and 6.

Sections 7, 8, and 9 should discuss the proposed budgets. You are instructed to provide your budgets in "full-cost" form.

Labor, major equipment, and other expenses for all budget scenarios must be explained in sufficient detail to determine the incremental cost of each proposed initiative. The budget must include any Node-specific costs.

A separate attachment contains instructions and the mandatory MS Excel spreadsheet form for the budget portion of each proposal. This form will serve as a standard budget summary for all proposals; it is assumed that each proposal will contain further details in a format determined by each project. For the period under consideration in this Performance Review, FY17-FY21, three scenarios should be summarized in the mandatory form and described in the technical/budget section: an "In-Guide" Scenario, a Reduced (85%) Scenario, and an Augmented Scenario (110%).

> For the "In-Guide" Scenario: If the current budget guideline for your Project (part of the current NASA operating plan) for any of the fiscal years is larger than zero, then describe a plan that can be accomplished under that guideline. If the Project believes that the current budget guideline is too low, the Project should identify the impact of the current in-guideline budget on the science return for the Project and should indicate the minimum viable funding level for the proposed tasks.

For the Reduced (85%) Scenario: The reduced scenario should be a carefully considered request for a reasonable science return. The technical/science description of this scenario should address the scope and reduced benefits compared to the in-guideline scenario. The reduced science return from the 85% scenario compared to the in-guideline scenario should be clearly identified. The science return should be clearly connected to the reduced budget required (under the current budget guideline) so that the PDS Performance Review panel can recommend none, some, or all of the reduced science return and estimate the budget required for partially funding the proposed decreases.

For the Augmented (110%) Scenario: The technical/science description of this scenario should address the scope and increased benefits compared to the in-guideline scenario. The increased return from the 110% scenario compared to the in-guideline scenario should be clearly identified. The science return should be clearly connected to the augmented budget required (under the current budget guideline) so that the PDS Performance Review panel can recommend none, some, or all of the augmented science return and estimate the budget required for partially funding the proposed increases.

The target for the tables for the `In-Guide', '85% In-guide (Reduced)', and 110% 'Augmented' budgets should follow the last PPBE (FY17) submission..

Required Appendices:

Two appendices are required and do not count against the page limit:

- Standard budget in the pre-approved MS Excel format. The spreadsheet template in Appendix A describes the mandatory format for your budget request and supplies a spreadsheet template. The completed budget spreadsheet must be emailed to William.Knopf-1@nasa.gov by the due date separately from the NSPIRES submission.

- Acronym list. Includes a full list of all acronyms used, with their designations spelled out.

Proposal Submission:

The combined proposal with budget, acronym, and optional bibliography must be submitted through NSPIRES by January 12 2016 as a PDF. No additional copies are needed.

Further Information Required for the Performance Review Deliberations:

After submission of proposals, members of the PDS Performance Review panel may have further questions or requests for clarification, In this case, identical requests for further information will be sent to all Projects prior to the in-person panel review.

Your proposal submission may include a bibliography of recent publications. The bibliography should be listed in reverse sequence, with the most recent refereed publications first. Rather than list all papers for the life of a project, the bibliography should contain, as a minimum, the most recent papers over the past five years. It is acceptable to list PhD theses and papers/presentations to conferences and workshops etc, but these should be listed separately from the refereed papers.

Panel Review Process:

The Performance Review panel will meet for two days:

Day 1:

Morning: Charter; discussion of conflicts of interest and procedures to minimize their impacts; logistics (writing assignments, etc.), background, comparisons, metrics and criteria.

Rest of day: EN presentations, plus questions and answers.

Day 2:

Complete presentations from NAIF;

Performance Review Panel completes its discussions and findings..

Presentations to the Review Panel:

There will be an Overview provided by the PDS Project Manager, about 30 minutes. Each proposing project will be allotted 120 minutes for an oral presentation to the Performance Review panel. To minimize the burden on Projects, at least two persons may represent any one of the Projects. During each Project presentation, the Project representative(s) should plan on using no more than 90 minutes for their prepared presentation, and reserving the remaining 30 minutes for questions and answers (as needed). Note that:

- The primary purpose of the oral presentations is to provide a forum for questions from panelists and answers from the Projects.
- Secondarily, this is an opportunity for Projects to provide any significant

updates, *e.g.*, science results obtained since proposal submission.

• Lastly, and with lowest priority, it is an opportunity to repeat highlights of the proposals, which have, of course, been read by all panelists.

Further Information:

For further information, you may contact me via e-mail at William.Knopf-1@nasa.gov

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Appendix A. PDS Performance Review Template

1. Overview
   - Origin of Discipline Node, how it fits into new PDS
   - Past two year's highlighted accomplishments
   - Present goals
   - Future vision (near term and long term)
   - Relation to PDS vision, goals

2. Current Activities (emphasizing past two years)
   - Technical status
   - Management organization chart
   - Missions (specify US vs non-US)
   - DAP support
   - Restorations
   - Infrastructure (h/w, s/w, management)
   - Community input (Node Advisory Committees, reviewers, Working Groups, meetings)
   - Metrics (activities, usage metrics, product distribution)

3. Merit
   - Relation to PDS Level 1 Requirements

4. Other measurables:
   - Data Collection
   - Migration of PDS3 holdings to PDS4
   - Archiving
   - Distribution
   - Efficiency
   - Technology development/infusion

5. Near-term actions (FY17 – FY21)
   - Discussion of major theme
   - Continuation/consolidation

6. Future/long-term actions
   - Discussion of major theme
   - Continuation/consolidation

7. Budget narrative (in-guide)

8. Budget narrative (reduced at 85%)

9. Budget narrative (increased to 110%)

Appendix A. Budget Spreadsheets (sent separately)

Appendix B. Acronyms

Appendix C. Bibliography (optional)

Suggested Page Length:
Section 1 – 1 page
Section 2 - 2 pages
Section 3 – 2 pages
Section 4 – 4 pages
Section 5 - 2 pages
Section 6 – 1 page
Section 7 - 1 page
Section 8 – 1 page (reduced scenario)
Section 9 — 1 page (augmented scenario)

Total - 15 pages

Appendices A – C – no page limit

Appendix B: Acronyms

ARC	Ames Research Center
ATM	Atmospheres Node
CIS	Cartography and Imaging Sciences
CD	Compact Disc
CfP	Call for Proposals
SI	Student Investigators
EN	Engineering Node
GEO	Geosciences Node
GSFC	Goddard Space Flight Center
HQ	Headquarters
IAT	Interagency Transfer
IMG	Cartography and Imaging Sciences Node
IPDA	International Planetary Data Alliance
JPL	Jet Propulsion Laboratory
MS	Microsoft
NAIF	Navigation Ancillary Information Facility
NASA	National Aeronautics and Space Administration
NSSDCA	NASA Space Science Data Coordinated Archive
NMSU	New Mexico State University
NSSDCA	NASA Space Science Data Coordinated Archive
NTL	NASA Tournament Lab
PDF	Portable Document Format
PDS	Planetary Data System
PDS3	Planetary Data System version 3
PDS4	Planetary Data System version 4
PPBE	Planning, Programming, Budgeting and Execution
PSD	Planetary Science Division
PSI	Planetary Science Institute
PPI	Planetary Plasma Interactions Node
RMS	Ring-Moon Systems Node
RS	Radio Science Function
RTOP	Research and Technology Operating Plan
SBN	Small Bodies Node
SC	Scientific Communication
SETI	Search for Extraterrestrial Intelligence
SMD	Science Mission Directorate
UCD	User Centered Design function
UCLA	University of California, Los Angeles
UMD	University of Maryland
USGS	United States Geological Survey
Wash U	Washington University in St. Louis
WBS	Work Breakdown Structure