PDS4 Operational Readiness Review

Reviews and RFAs

E. Law
Engineering Node

PDS4 Reviews

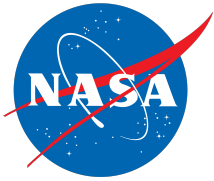| Review	Date
Preliminary PDS MC System and Data Review	Aug-09
PDS4 Data Standards Internal Assessment/Science Requirements Vetting by Nodes/Managers	Nov-09
PDS4 Product Review	Dec-09
System Review I, Ingestion	Mar-10
PDS4 Data Standards IPDA Review	Oct-10
PDS4 Data Standards PDS Review	Jan-11
PDS4 Data Standards IPDA Review	May-11
System Review II, Distribution	Jun-11
PDS4 Data Standards External Reviews	Aug-11
PDS4 Build 2 Readiness Review to begin label design for LADEE/MAVEN	Nov-11
PDS4 Operations Readiness Review for LADEE/ MAVEN	Sep-13

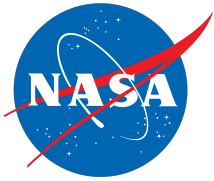Internal Review   External Standards Review   External System Review   External Readiness Review

External Review - IPDA

- Build 1c Standards Assessment by International Partners
- Phase 1 - Review the PDS4 Data Standards and documentation and complete an assessment response sheet.
  - Start April 15, 2011
  - End May 15, 2011
- Phase 2 - Prototype PDS4 data product using one or more data products produced by the agency.
  - Start May 25, 2011
  - End July 15, 2011

IPDA Reviewers

- Peter Allan, STFC/Rutherford Appleton Lab
- Michel Gangloff, CNES
- David Heather, ESA
- Gopala Krishna, ISRO/SAC
- Thomas Roatsch, DLR
- Alain Sarkissian, IPSL/LATMOS
- Iku Shinohara, ISAS/JAXA
- Maria Teresa Capria, INAF/IASF
- Jesus Salgado, ESAC/ESA
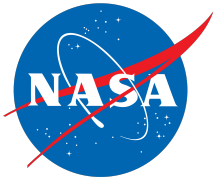
IPDA Phase 1 Assessment

1. Do the documents provide sufficient background for the review? If not, how could they be improved?

2. Assess the four fundamental structures. Are they useful? Will they support your needs? Do you have products that you believe will not fit into the structures?

3. Assess the PDS4 core product types. Do they provide an adequate set of baseline templates for constructing new templates and new PDS4 products? What is missing?

4. Assess the structure and layout of the PDS4 product examples? How can it be improved?

5. What overall recommendations do you have for the team? Do have you have suggestions for improvement?
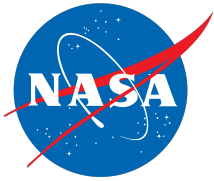
IPDA Phase 2 Assessment

1. How well did the process for creating PDS4 products work?
   - Is the generic product schema you chose complete and useable?
   - Is the process for creating a specific schema well documented and complete?
   - Is the process for creating a product label well documented and complete?
   - What parts of the process could be improved or what needs to be changed?
2. What tools should be developed and made available?
3. Are the PDS4 data standard documents useful?
   - What could be improved?
4. Did you find any limitations or items missing that you expected?
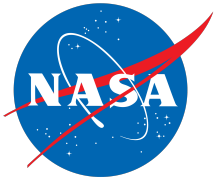5. Do you have any other comments?
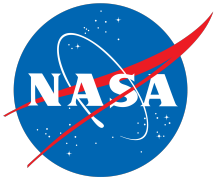
IPDA Review Results

- Comments received: improvement, ambiguity, duplication, incomplete, questions, suggestion, kudos
  - Phase 1-157
  - Phase 2-31
- Artifacts posted
  - https://oodt.jpl.nasa.gov/wiki/display/pdscollaboration/Partner_Review_IPDA
- DDWG accepted comments and suggestions as constructive inputs during the PDS4 Standards development
- Following reviews, in July 2012, IPDA SC endorsed PDS4
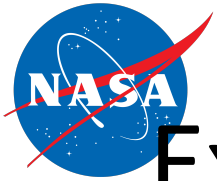
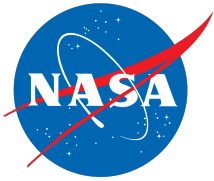# External Review – Data Providers

- Build 1d Standards assessment, August 2011

- Target selective external data providers and system developers

- Solicit inputs

  - Suggest improvements to documents & their structures

  - Identify gaps and misaligned priorities

  - Support continued progress by DDWG

Build 1d External Reviewers

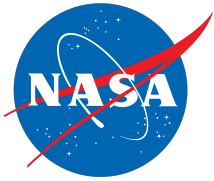| First	Last Name	Source	Location	Area
Elias	Barbinis	Recommended by Dick Simpson	Radio Science/JPL	Radio
Jim	Bell	Expressed past interest	ASU - Promised 1 hour of effort	SB
David	Choi	Recommended by Ashwin Vasavada	PDS data a lot - Dynamics	ATMOS
Bob	Deen	Recommended by Sue Lavoie	MIPL/JPL	Imaging
Alex	DeWolfe	MAVIN volunteer	Mavin Archiver/LASP	PPI/ATMOS
Larry	Granroth	Recommended by Bill Kurth	Cassini-RPWS/Univ of Iowa	PPI
Steve	Levoe	Recommended by Sue Lavoie	MIPL/JPL	Imaging
Jerry	Manweller	Recommended by Steve Joy	Technologies	PPI
Sarah	Mattson	Recommended by imaging node	HIRISE/LPL-U of Ariz	Imaging
Rodney	Heyd	Recommended by Sue Lavoie	HIRISE/LPL-U of Ariz - will help Sarah	Imaging
Bea	Mueller	Recommended by Sue Lavoie	Ground-Based Comets/ PSI	SB
Joey	Mukheree	Recommended by Steve Joy	PDS & SPASE/SwRI	PPI
Kim	Murray	Recommended by Susie Slavney	MGS/TES & Odyssey/Themis/ASU	GEO
Conor	Nixon	CASSINI volunteer	CASSINI-CIRS/GSFC	ATMOS/RINGS
Joe	Peterson	Recommended by Ann Raugh	New Horizons/SWRI	SB
Michael	Reid	Recommended by GEO node	APL archiver	GEO
Mark	Shirley	LADEE volunteer	LADEE archiver/AMES	ATMOS
Paul	Withers	Recommended by ATMOS	Univ	ATMOS/Radio

Data Provider Assessment

1. Do the document provide sufficient background and information for understanding PDS4 data standards? If not, how could they be improved?

2. Assess the four fundamental structures. Are they useful? Will they support your needs? Do you have products that you believe will not fit into the structures?

3. Assess the PDS4 product types. Do they provide an adequate set of baseline templates for constructing new templates and new PDS4 products? What is missing?

4. Assess the structure and layout of the PDS4 product examples? How can it be improved?

5. What overall recommendations do you have for the team? Do have you have suggestions for improvement?
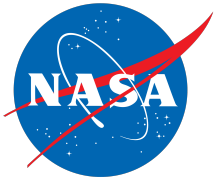
Data Provider Review Results

- 405 comments received

  - improvement, editing, process clarification, suggestions, kudos

- Artifacts posted

  - https://oodt.jpl.nasa.gov/wiki/display/pdscollaboration/External+Review

- The results were accepted as inputs by DDWG and planned for short term and long term improvements
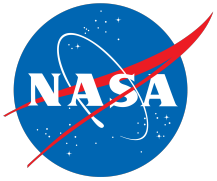
System Review I

- March 22-24, 2010 System Review I

- Review PDS drivers and requirements

- Assess technical architecture and ensure that it is responsive to the needs, drivers and requirements for the PDS over the next decade

- Ensure PDS has a design that is responsive to the architecture and PDS drivers

- Assess the implementation plan (schedule, resources, phasing)

- Ensure that PDS has a deployment and infusion plan for PDS4 that includes PDS nodes and missions

- Assess the transition plan from PDS3 to PDS4 operations

- Provide overall technical and project management recommendations
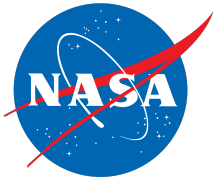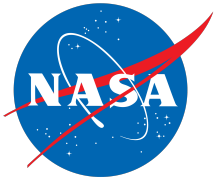
System Review I Reviewers

- David Heather, ESA

- David Korsemeyer, ARC

- David Linick, JPL , Chair

- Jan Merka, GSFC

- Andy Schain, NASA HQ

- Peter Shames, JPL
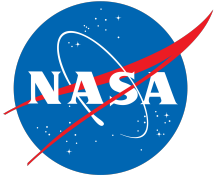
System Review I Results

- Board report and RFA summaries http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=189

- RFA categories: Documentation, Design, Questions, Recommendations, Kudos

- 20 RFAs were documented

- All of them have been closed

System Review II

- June 21-22, 2011 System Review II
- Review and assess the design for data distribution
- Update review board on the progress for PDS4 since System Review I
  - System Review 1 presented architecture, ingestion and operations concept
  - Review closure of the RFAs from the System Review I
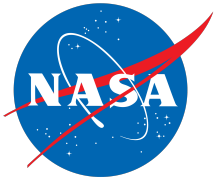- Review delivery plans for build2
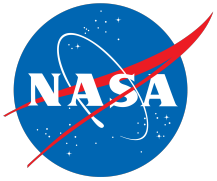
System Review II Reviewers

- David Heather, ESA

- David Linick, JPL , Chair

- Jan Merka, GSFC

- Andy Schain, NASA HQ

- Peter Shames, JPL

System Review II Results

- Board report and RFA summaries http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=189

- RFA categories: Documentation, Recommendations, Kudos

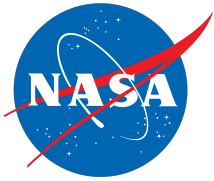- 8 RFAs were documented

- All of them have been closed

Build 2a ORR-1

- November 2011 Build 2a Readiness Review

- Evaluate Build 2a readiness for label design to begin for LADEE and MAVEN

- PDS Management Council members served as the reviewers

# Build 2a ORR-1 Results

- RFA summaries

    - http://pds-engineering.jpl.nasa.gov/pds2010/build2cdeliverables/RFA-List-Build2c-20120610.pdf

    - http://pds-engineering.jpl.nasa.gov/pds2010/build2bdeliverables/PDS4-RFA-LIST20120323-2b.pdf

- 91 RFAs from the review were captured and categorized and resolved

    - 32 resolved in Build 2b

    - 58 resolved in Build 2c

    - 1 resolved in Build 3a

Summary

- Timely internal and external reviews at Key Decision Points planned in Lifecycle

- Assessments throughout getting stakeholders' feedback

- All inputs captured, documented, analyzed, classified and disposed accordingly

- Key comment categories include: recommendations, praises, editing, feature and process improvements

- Reviews were successful

- Inputs were useful to improve PDS4 software and standards

- Readiness reviews ensure that PDS4 is ready to support LADEE and MAVEN
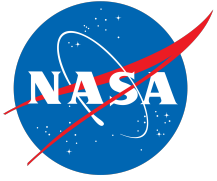
Thank you

Questions?

Backup

Build 1d Review Response Summary

1. Principally focused on documents with the vast majority of issues being editorial comments. The phase I documents received more comments. Examples: consolidate documents more and reduce overlap, address inconsistencies, etc.
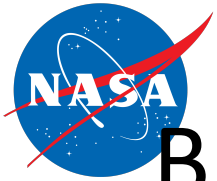2. Many cautioned that true test is in doing something with PDS4.
3. Need better indexes, appendices, page numbering, etc.
4. Some comments that there is a lot of terminology.
5. Some suggested improvements in the use of XML schema (e.g., more inheritance, resolving conflicting terminology)
6. More examples, including PDS3 v PDS4
7. Support UTF---8/Unicode
8. Support delimited tables
9. How to make PDF/A; how to archive software
10. Capture HTML resources
11. Clarification on bundle v collection of collections
12. Some discipline extensions need to be improved (e.g., coordinate systems)
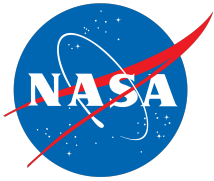
System Review I RFAs (1)

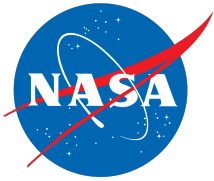| RFA #	Topic	Author	Status	Comments
1	The core data model and data dictionary are crucial for distributed queries	J. Merka	Closed	Recommendations are already in work or in plan
2	Data node holdings overlap in content	J. Merka	Closed	Clarification provided
3	How much NASA funding goes towards supporting collaboration with international partners?	J. Merka	Closed	IPDA support resource allocated by nodes
4	What is PDS2010 relationship to the NASA Virtual Observatories?	J. Merka	Closed	VxOs relationship clarified
5	Documentation Inconsistencies and comments	D. Heather	Closed	Ckarified and documents are updated
6	Support for global data searches (#1 intro, #16 architecture, and elsewhere)	P. Shames	Closed	Search Service planned in Build II
7	Harvest and Registry Tool Comments	D. Heather	Closed	Clarification provided
8	Improve architecture description and understanding (#17 Service Design)	P. Shames	Closed	Recommendations accepted
9	Improve monitor data (#17 Service Design)	P. Shames	Closed	Recommendations in plan
10	Management of Information Model (Operation Concept Doc)	D. Heather	Closed	ops concept updated

System Review I RFAs (2)

RFA #	Topic	Author	Status	Comments
11	Tension between integrated system goals and node autonomy	P. Shames	Closed	Architecture and design support both approaches
12	Maintaining consistency among global and specialized schema (#5 Ops Concept, and elsewhere)	P. Shames	Closed	A single integrated scheme produced
13	Support for global name resolver (intro and elsewhere)	P. Shames	Closed	Clarification provided
14	Validation layer for Node-level requirements in the standards	D. Heather	Closed	Clarification provided
15	Primacy of Information Model (#9 PDS Data Architecture)	P. Shames	Closed	Recommendations are already in work or in plan
16	Tools planned for PDS4	D. Heather	Closed	Recommendations in plan
17	Tool Distribution - comment	D. Heather	Closed	Clarification provided
18	Standardization of data access / web pages at nodes	D. Heather	Closed	Architecture and design support both approaches
19	Requirements Specification	D. Linick	Closed	Requirement traceability matrix in place
20	Transition Requirement	D. Linick	Closed	Transition date selected

System Review II RFAs

RFA #	Topic	Author	Status	Comments
1	Extent of standardization of service registry and service binding	P. Shames	Closed	Recommendations are already in plan/ design
2	Clear display of what exists, what doesn't, how components are phased and connected	P. Shames	Closed	Clarified in presentation
3	Clarify use of the terms API and protocol	P. Shames	Closed	Clarified in presentation
4	Good job	P. Shames	Closed	Kudos only
5	Design Tools and documentation	D. Heather	Closed	Recommendations are already in plan
6	Dictionary Governance	D. Heather	Closed	Documented in Data Dictionary
7	Core registry and search facilities	D. Heather	Closed	Recommendations are already in plan/ design
8	PDS3 Maintenance pre/post conversion	D. Heather	Closed	Already taken into consideration