

System Review I Results

**PDS System Design Review II
Greenbelt, MD**

June 21-22, 2011

Outline

- System Design Review I Key Recommendations
- PDS Key Decision Points
- RFAs summary

System Review I

- 3-Day Review performed Mar 21-23, 2010
- Dan Crichton and Emily Law met with Dave Linick, chair, on July 27, 2010 to review responses back to the board and close out; no major concerns from any board members on the responses
- Board report, RFAs, reponse posted to the EN PDS 2010 website <http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145>

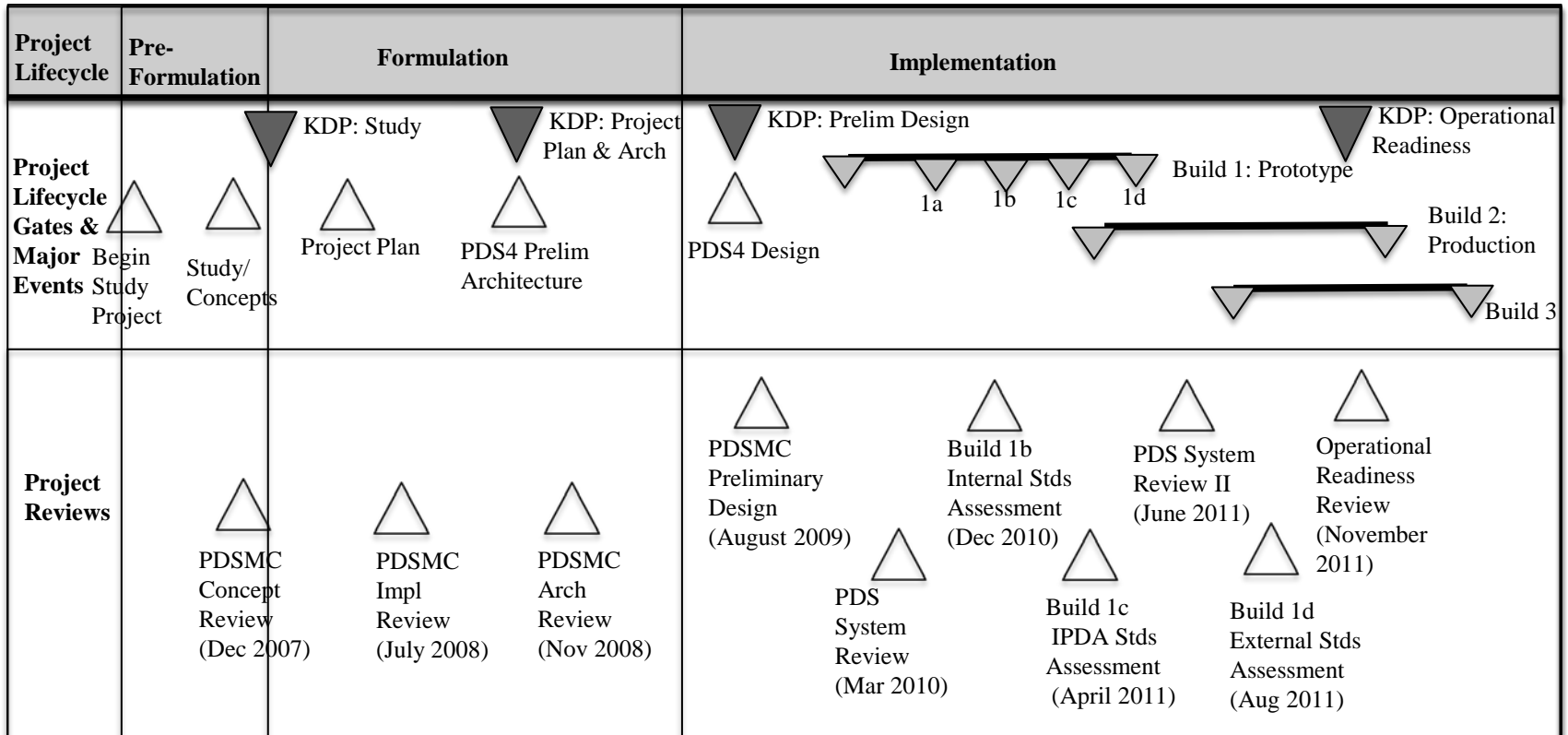
System Review I Key Recommendations

- Map PDS development lifecycle to NPR 7120.8
 - An appropriately tailored NPR-7120.8 has been applied to the PDS 2010 Project including review process.
- Requirements traceability
 - Requirements traceability matrices are available.
- An absolute date by which new missions will start to be PDS4 compliant
 - The date has been determined to be November 1, 2011.
- Amount of centralization vs. de-centralization in terms of system elements and governance
 - The architecture is designed to support a spectrum of topologies, and system components can be configured to suit the selection.

NPR 7120.8 / PDS Mapping

- NASA Procedural Requirements (NPR) 7120.8
 - Establishes the NASA research & technology program and project management requirements
 - Ensures adequacy of planning, execution and tracking of approved plan based on life cycles and KDPs
 - http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PR_7120_0008_&page_name=main
- Mapped PDS project plan to 7120.8 Project Implementation requirements
 - NPR project management lifecycle and principles
 - Independent Assessments
 - Status Reviews
 - <http://pdsbeta.jpl.nasa.gov/systemreview/NPR7120.8Mapping.pdf>

Engineering Lifecycle



Review Schedule

| Review | Date |
|--|---------------|
| Preliminary PDS MC System and Data Review | August 2009 |
| PDS4 Data Standards Internal Assessment/Science Requirements Vetting by Nodes/Managers | November 2009 |
| PDS4 Product Review | December 2009 |
| System Review I, Ingestion | March 2010 |
| PDS4 Data Standards IPDA Review | October 2010 |
| PDS4 Data Standards PDS Review | January 2011 |
| PDS4 Data Standards IPDA Review | May 2011 |
| System Review II, Distribution | June 2011 |
| PDS4 Data Standards External Reviews | August 2011 |
| PDS4 Operations Readiness Review | November 2011 |
| User Capabilities Readiness Review | Summer 2012 |

RFAs Summary

- Total RFAs : 20
- All RFAs are closed
- RFA categories: Documentation, Design, Questions, and Recommendations
- RFAs and their responses posted to the EN PDS 2010 website

http://pdsbeta.jpl.nasa.gov/systemreview/RFA_summary.pdf

Backup

RFA #1-7

| 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 | Clarified 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 |

RFA #8-13

| RFA # | Topic | Author | Status | Comments |
|-------|---|------------|--------|---|
| 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 |
| 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 |

RFA #14-20

| RFA # | Topic | Author | Status | Comments |
|-------|---|------------|--------|---|
| 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 |

NPR 7120.8/PDS 2010 Mapping (1/3)

| | NPR 7120.8 requirements | PDS 2010 Project Plan | Description |
|---------|---|-----------------------|---|
| 4.5.1.1 | Project Lead shall establish a WBS | Section 3.3.1 | PDS 2010 Project WBS includes Management, Systems Engineering, Data Standards , System Development and Operations |
| | Project schedule with milestones for each element in the WBS | Section 14.2 | PDS 2010 Project's schedule with milestones are posted on http://pds-engineering.jpl.nasa.gov/index.cfm?pid=100&cid=118 |
| | An allocation of the project's available resources necessary to achieve each milestone | Section 14.1.1 | The PDS 2010 project is funded by the NASA Headquarters funds through the PDS task funding vehicles to the PDS Nodes as proposed in the POP. The resource allocation is documented in the POP. |
| | The milestones should be chosen at intervals sufficient to demonstrate steady progress towards achieving the overall KPPs for the project | Section 12.5 - 12.8 | The PDS 2010 project progresses in releases. Release phasing is summarized in Project Plan section 12.5.. Section 12.6 - 12.8 describes the details of each release. |

NPR 7120.8/PDS 2010 Mapping (2/3)

| | NPR 7120.8 requirements | PDS 2010 Project Plan | Description |
|---------|---|-----------------------|---|
| 4.5.1.3 | Project Lead shall track progress against a baseline plan. The WBS, the project schedule, and the allocation of resources to milestones constitute the baseline plan for assessing technical, schedule, and cost performance. | Section 6 | A monthly report is provided to the PDS Program and NASA Headquarters Management. The progress and risks of the project are presented to the PDS MC on the monthly MC teleconference and at each MC face-to-face meeting. In addition, status is reported to the PDS Program Manager and Chief Scientist on regular monthly Engineering Node teleconferences. |
| 4.5.2.1 | Program Lead may authorize special independent assessments at any time in a TD Project's life cycle. | Section 14.2.4 | Key reviews have been identified as special independent assessments. Schedule of key reviews is listed in Project Plan section 14.2.4. |
| 4.5.2.2 | The Project DA shall determine if the optional KDP (KDP B) is required during Formulation or if the optional KDP (KDP B) is not needed | Section 4 | During the project definition phase, several documents including the PDS 2010 level 1, 2, and 3 requirements, and white papers were produced to support Key Decision Points. |

NPR 7120.8/PDS 2010 Mapping (3/3)

| | NPR 7120.8 requirements | PDS 2010 Project Plan | Description |
|---------|--|-----------------------|---|
| 4.5.2.3 | The Project DA shall determine if optional KDPs (KDP D and E) are required during Implementation or if the optional KDPs (KDP D and E) are not needed. | Section 6 | A monthly report is provided to the PDS Program and NASA Headquarters Management. The progress and risks of the project is presented to the PDS MC on the monthly MC teleconference and at each MC face-to-face meeting. KDPs will be determined by the MC during Implementation phase. |
| 4.5.2.4 | Independent Assessments (IAs) occur as part of the TD Project life cycle. IAs during Implementation are performed periodically and should be documented in the Project Plan. | Section 14.2.4 | IAs have been identified as special independent assessments during implementation. Schedule of IAs is listed in Project Plan section 14.2.4. |
| 4.5.3.1 | The TD Project Lead shall conduct TD Project status reviews annually to assess both progress towards the KPPs and the maturity of the technology. | Section 6 | A monthly report is provided to the PDS Program and NASA Headquarters Management. The progress and risks of the project are presented to the PDS MC on the monthly MC teleconference and at each MC face-to-face meeting. In addition, status is reported to the PDS Program Manager and Chief Scientist on regular monthly Engineering Node teleconferences. |