

# PDS4 Project Report

PDS MC F2F  
University of Maryland

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March 27, 2012

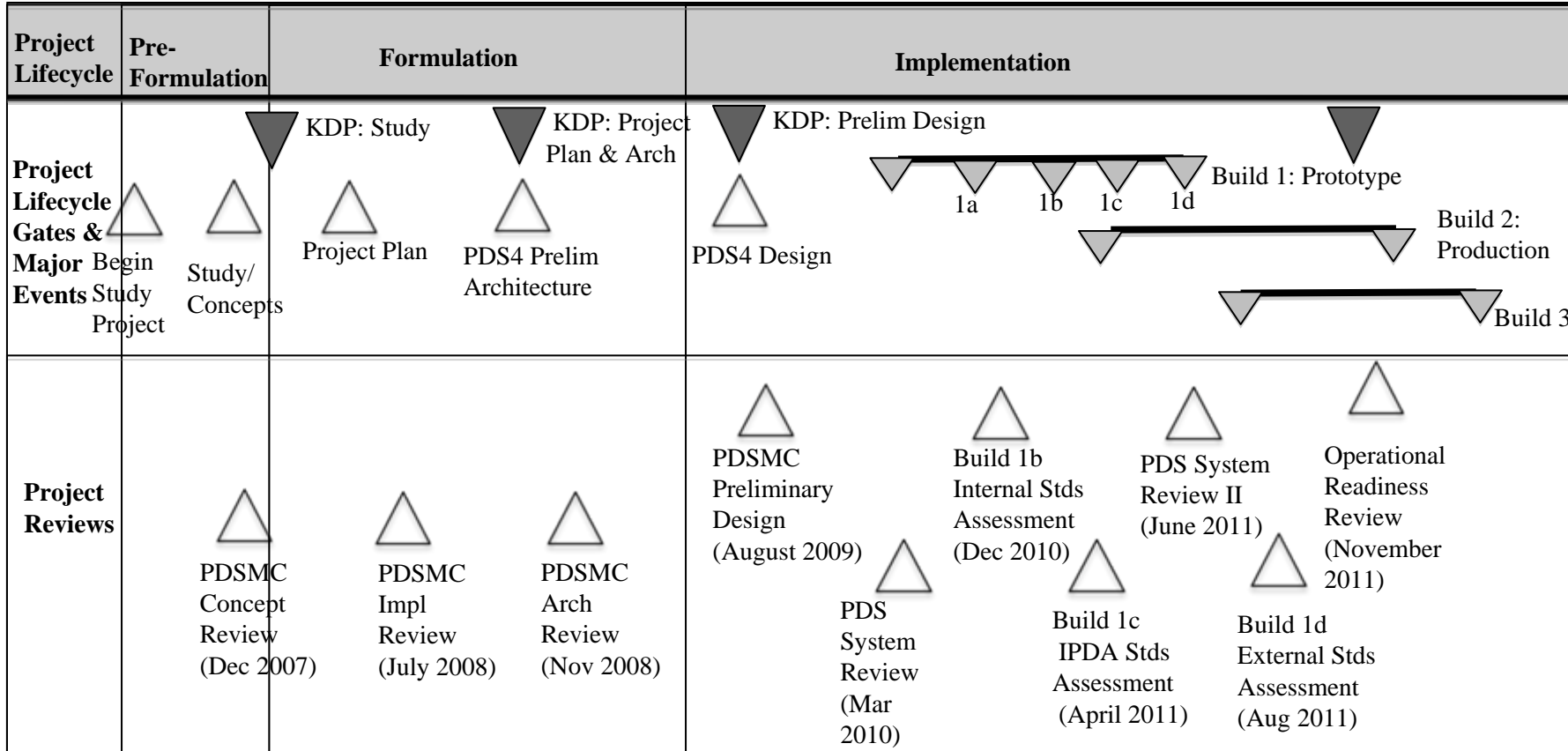
# Agenda

- Project Update
- DDWG Update and Special Topics
- LADEE and MAVEN Update
- Data Migration
- SDWG
- Phasing Plan (beyond build 3)
- Marketing

# Summary of Progress to Date

- Requirements in place (approved by MC 3/2010)
- PDS-wide Architecture defined
- Major reviews conducted
- Prototype PDS products defined using maturing PDS4 specification
  - LADEE team developing labels
  - Preparing for MAVEN use of PDS4
- 6 system builds completed: build 1a, 1b, 1c, 1d, 2a, 2b
- Initial transition to PDS4 in place at EN
  - Registry and Harvest infrastructure in place at EN
  - Central catalog migrated to registry; High level search migrated
  - Information model released for limited use.
- Extensions now occurring for build 2c
- IPDA review of build 2b underway

# Project Lifecycle



# Key Design Decisions & Recommendation from Aug 2009

- Replace PDS3 ad hoc information model with a PDS4 information model that is now managed in modern tools (DDWG) (delivered in build 2)
- Replace ad hoc PDS3 product definitions with PDS4 products that are defined in the model (DDWG) (delivered in build 2)
- Require data product formats to be derivations from a core set; Support transformation from the core set (DDWG) (delivered in build 2)
- Replace “homegrown” PDS data dictionary structure with an international standard (ISO 11179 RIM) (DDWG) (delivered in build 2)
- Adopt a modern data language/grammar (XML) where possible for all tool implementations (SDWG) (delivered in build 2)
- Adopt system of registries to support improved tracking and access (SDWG) (delivered in build 2)
- Support remote access to data and services to bring the federation together both for ingestion and distribution (SDWG) (planned for 3)

# What's been delivered for build 2a and 2b\*

## Software System

- Registry Service
- Harvest Tool
- Validate Tool
- Security Service
- Report Service
- Search Service
- CI Tool

## Data Standards

- Information Model
- XML Schemas
- Data Dictionary
- Standards Documents\*\*

*\* PDS4 is following an iterative development model so additional phases will deliver additional capability.*

*\*\* Documents between build 2a and build2b were not substantially revised*

# Build 2b Scope (Delivered)

- Begin PDS4 label design for LADEE and MAVEN; Begin planning/testing migration
- Deploy a PDS4 standard that supports the Policy on “Acceptable PDS4 Data Formats”
- Transition the central catalog to the registry infrastructure
- Deploy early PDS4 software tools and services

# RFA Process/Status

- RFAs have been captured from reviews
  - They are addressed and scheduled for implementation and deployment as part of the build/release process
  - Additional RFAs will be captured as part of testing in preparation for build 2c delivery
- RFA categorization
  - OPEN, ACCEPTED, REQUIRES FOLLOW-UP, PENDING, IMPLEMENTED, DELIVERED, CLOSED, REJECTED
- RFA spreadsheet posted at:
  - <http://pds-engineering.jpl.nasa.gov/pds2010/build2bdeliverables/PDS4-RFA-LIST20120323.pdf>



# Major RFA Areas

- Information model/standards/schema
  - Many addressed for build 2c
- Documentation
  - Deferred to build 2c
- Marketing
  - Deferred to build 2c

# RFA Status (Build 2b)

## SUMMARY

OPEN	0
PENDING	3
DELIVERED	28
CLOSED	3
<b>Total</b>	<b>34</b>

# RFA Status (Build 2c)

## SUMMARY

OPEN	0
REQUIRES FOLLOW-UP	2
ACCEPTED	1
PENDING	20
IMPLEMENTED	31
CLOSED	5
<b>TOTAL</b>	<b>59</b>

# Build 2c Scope (Proposed)

- Principal documents including the Standards Reference, Data Providers Handbook, and Concepts Document ready to be posted for public access. (NOTE: Documents may still have some TBD sections for more advanced aspects of PDS4).
- Support for additional data products including those with images and bit fields.
- Node testing of information model complete for build 2c DDWG test cases.
- Resolution of any major MAVEN and LADEE issues.
- Central catalog migrated to PDS4 infrastructure.
- Registry software ready for distribution to the nodes.

# Build 2c Focus Items

- Documentation
  - A follow up report from DDWG on this will be given
- PDS-wide Testing of IM
  - This is important to identify major showstoppers and ensure the delivered RFAs can be closed
  - More to come on this
- Testing registry software @ EN in production state
- Prepare deployment of software across PDS
  - PDS-wide registration of data to the product level

# Phasing/Planning

- PDS4 is maturing enough that we need to consider how we now build on PDS4
  - Mapping to internal development (e.g., upgrade PDS web applications)
  - Mapping to upcoming missions
- Note that we have not mapped this to either mission forcing functions or any internal ones (e.g., migration)
- To be discussed this afternoon

# Build Phasing

Phase	Purpose	Release	Date
I Prototype Build 1	<ul style="list-style-type: none"> <li>• Release a prototype Ingest Subsystem</li> <li>• Baseline PDS4 model, standards reference (beta release)</li> <li>• Support testing of Node interfaces</li> <li>• Support PDS4 product prototypes</li> </ul>	<ul style="list-style-type: none"> <li>• PDS4 beta info model, standards reference, data dictionary, schemas baseline</li> <li>• Beta release of Harvest, Registry, Report and Security services</li> <li>• First set of process, documentation and tutorial</li> </ul>	October 2010
II Operational Build 2	<ul style="list-style-type: none"> <li>• Initial operational PDS4 system and PDS4 Standards</li> <li>• Allow acceptance of PDS4 data into operational archive</li> <li>• Support LADEE, MAVEN and Migration Planning</li> <li>• Allow user to search and access to both PDS3 and PDS4 data</li> </ul>	<ul style="list-style-type: none"> <li>• PDS4 beta info model, standards reference, data dictionary, schemas baseline</li> <li>• Production release of Harvest, Registry, Report and Security services</li> <li>• Validation and catalog ingest tools</li> <li>• Updated documentation</li> <li>• Transition from PDS3 catalog to PDS4 registry</li> </ul>	January 2012
III Operational Build 3 User Services Capabilities	<ul style="list-style-type: none"> <li>• Incremental release of operational PDS4 system</li> <li>• Support data transformation</li> <li>• Support science services</li> <li>• PDS-wide deployment of PDS4 software</li> </ul>	<ul style="list-style-type: none"> <li>• Registry, Harvest deployed at nodes</li> <li>• Initial PDS4 library software and transformation support</li> <li>• Search protocol deployed</li> </ul>	August 2012
IV Web/ Application Integration	<ul style="list-style-type: none"> <li>• Integrated PDS-wide Web Applications with PDS4</li> <li>• Updated look-n-feel for PDS4</li> </ul>	<ul style="list-style-type: none"> <li>• Search protocol integrated into web applications</li> <li>• New PDS4 web infrastructure deployed</li> <li>• Sharing of data/services among nodes and IPDA</li> </ul>	April 2013

# Summary

- Good progress on PDS4
- Need to now work on preparing PDS4 for wider use
  - Testing of the standards is a major need now...
- Need to plan development activities to build on top of PDS4
- Need to ensuring we map PDS4 schedule to key drivers (e.g., missions, migration, etc)



# Backup

# Schedule

	Activity Name	Duration (Work Days)	Start Date	Finish Date	2008			2009			2010			2011			2012				
					3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd
1	Concept/Study Phase...	240.00	8/20/07	7/18/08	█																
10	Project Planning...	133.00	1/7/08	7/9/08	█																
20	Architecture/System Engineering...	254.00	7/10/08	6/30/09	█	█															
34	Projects	1,006.00	11/21/08	9/28/12			█	█	█	█	█	█	█	█	█	█	█	█	█		
35	P1. Data Standards Project...	976.00	1/2/09	9/28/12			█	█	█	█	█	█	█	█	█	█	█	█	█		
84	P2. Distributed Infrastructure Project...	911.00	11/21/08	5/18/12		█	█	█	█	█	█	█	█	█	█	█	█	█	█		
107	P3. Tools Project...	595.00	11/16/09	2/24/12					█	█	█	█	█	█	█	█	█	█	█		
114	P4. Distributed Catalog System Project...	688.00	9/30/09	5/18/12					█	█	█	█	█	█	█	█	█	█	█		
127	P5. Portals, Search and Distribution Project...	425.00	10/4/10	5/18/12							█	█	█	█	█	█	█	█	█		
138	P6. Data Movement and Delivery Project...	171.00	10/1/10	5/27/11							█	█	█	█	█	█	█	█	█		
144	Builds	690.00	11/9/09	6/29/12					█	█	█	█	█	█	█	█	█	█	█		
145	B0. Infrastructure Build...	20.00	11/9/09	12/4/09							█	█	█	█	█	█	█	█	█		
148	B1. Ingestion Build...	160.00	3/22/10	10/29/10							█	█	█	█	█	█	█	█	█		
152	B2. Distribution Build...	102.00	6/21/11	11/9/11																	
156	B3. User Capabilities Build...	30.00	5/21/12	6/29/12																	
					3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd