

### **PDS 2010 Project Update**

PDS Management Council

April 2, 2009

Dan Crichton

# What we want to communicate today

- Overview of progress in each of the groups
  - Data design and distributed infrastructure teams will present
  - Elizabeth will discuss the plans for the PDS4 standards reference
- Plans for upcoming tech session
- Project Timeline
- Specific discussion on plans for the PDS4 standards reference

#### What we said...

- Specific goals for PDS 2010 \*
  - Simplified, but rigorous, archiving standards (PDS4) that are consistent, easy to learn, and easy to use
  - Adaptable tools for designing archives, preparing data, and delivering the results efficiently to PDS
  - On-line services allowing users to access and transform data quickly from anywhere in the system
  - A highly reliable, scalable computing infrastructure that protects the integrity of data, links the nodes into an integrated data system, and provides the best service to both data providers and users

<sup>\*</sup> PDS 2010 Executive Summary, July 2008

# **Guiding Information for Design**

- Roadmap
  - http://pds-engineering.jpl.nasa.gov/projects/PDS4/Exchange/PDS Roadmap.pdf
- PDS Level 1, 2, 3 (System-Level)
  - <a href="http://pds-engineering.jpl.nasa.gov/index.cfm?pid=5&cid=72">http://pds-engineering.jpl.nasa.gov/index.cfm?pid=5&cid=72</a>
  - Really, not a PDS3 set of requirements
- PDS4 Concept Papers
  - <a href="http://pds-engineering.jpl.nasa.gov/index.cfm?pid=100&cid=119">http://pds-engineering.jpl.nasa.gov/index.cfm?pid=100&cid=119</a> (Architecture)
  - <a href="http://pds-engineering.jpl.nasa.gov/index.cfm?pid=100&cid=120">http://pds-engineering.jpl.nasa.gov/index.cfm?pid=100&cid=120</a> (Data Model)
  - http://pds-engineering.jpl.nasa.gov/index.cfm?pid=100&cid=121 (User Support)
- PDS Vision and Exec Summary
  - <a href="http://pds-engineering.jpl.nasa.gov/projects/PDS4/pds2010-execsummary20080701.pdf">http://pds-engineering.jpl.nasa.gov/projects/PDS4/pds2010-execsummary20080701.pdf</a>
- PDS 2010 Architecture
  - <a href="http://pds-engineering.jpl.nasa.gov/index.cfm?pid=100&cid=131">http://pds-engineering.jpl.nasa.gov/index.cfm?pid=100&cid=131</a> (System Architecture)
  - <a href="http://pds-engineering.jpl.nasa.gov/index.cfm?pid=5&cid=125">http://pds-engineering.jpl.nasa.gov/index.cfm?pid=5&cid=125</a> (Data Architecture)

#### PDS 2010 Plan

- Study Phase (August 2007 March 2008)
- Project Definition (January 2008 July 2008)
- High Level Architecture (July 2008 January 2009)
  - Includes trade studies and transition planning
- Implementation Sub-projects (2009 2011) [each follow lifecycle]
  - Sub-project I: PDS 2010 Data Standards
  - Sub-project II: Distributed Infrastructure
  - Sub-project III: Core Tools
  - Sub-project IV: Catalog System
  - Sub-project V: Portals
  - Sub-project VI: Data Movement
- Transition to PDS 2010 (2012+)

## **Summary of Progress**

- After discussing the high level architecture in November 2008 for the data and system architecture with the MC, two project teams were created to focus on
  - Design and Definition of Data Standards
  - Design and Implementation of Distributed Service Infrastructure
- Both groups established an implementation plan and timeline consistent with the overall PDS 2010 project schedule
- Both teams hold weekly teleconferences and are marching through their projects plans
- Both teams are planning for preliminary/early designs for the upcoming tech session
  - Purpose is to ensure PDS-wide visibility, input and alignment as we move forward
- Begin releasing capabilities for review and to seed the PDS 2010 investment

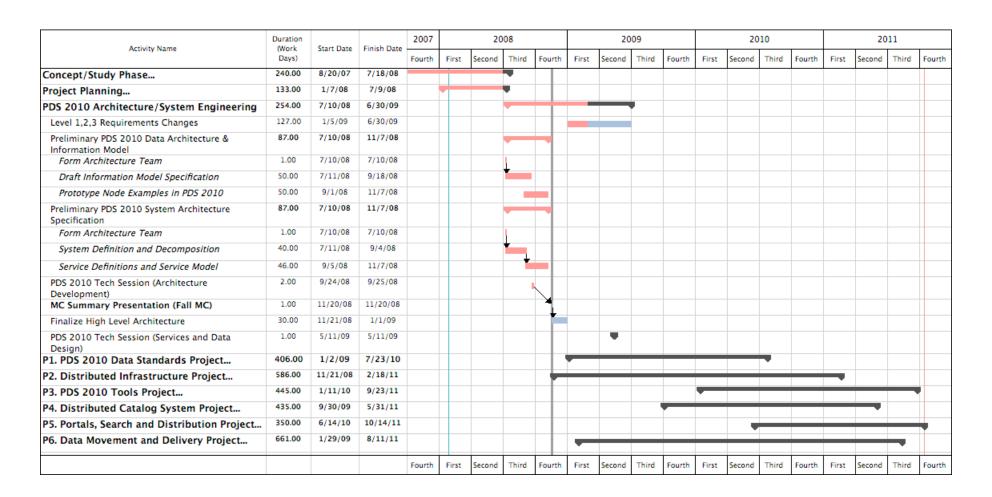
### **Data Design**

- Definition of standard information model and structure
  - New data dictionary
  - Standard data structure for products
  - New grammar (e.g., XML)
- Develop PDS 4 data standards
  - Release of PDS4 Standards Reference
- More on this from the data design presentation coming up...

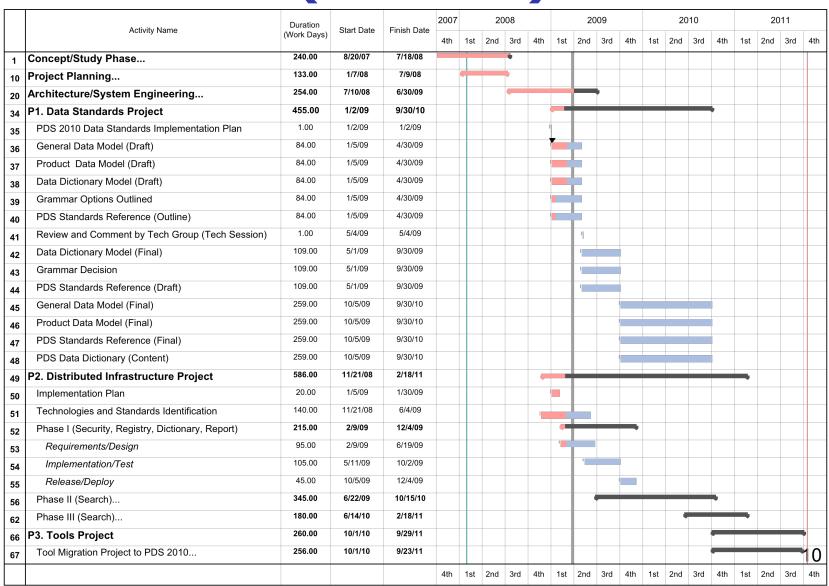
#### **Distributed Infrastructure**

- Technical standards for building services (e.g., RESTbased services)
- Design and development of core PDS services
  - Network-based
  - Allow for local and distributed access
  - Improve flow and sharing of data from ingestion to delivery to NSSDC
- Deployment of common services
- More to come in the upcoming systems presentation...

# PDS 2010 Schedule (from November)



# PDS 2010 Schedule (Current)



# **Tech Session (June 2009)**

- Originally targeted May, but June worked better for everyone's schedule
- 3-days (June 9-11, 2009)
  - Day 1
    - Splinter meetings
  - Day 2 & 3
    - Review and discussion of designs and deployment plans
    - Discussion of the PDS 4.0 Standards Reference
    - Review and discussion of migration/transition plan (and the critical dependencies)

### What the MC can expect

- Today is a work in progress discussion
- In August, after the tech session, we expect
  - there will be a comprehensive report for the MC
  - emerging draft documents and early software services
  - a critical discussion on transition and migration plans
- Sufficient time to engage community through the node processes
  - We want early deliverables so they can be used for concrete discussions and feedback

## **Transition Planning**

- Transition planning will be on-going throughout PDS 2010 development (e.g., multiple transition points)
- Dependent on new data standards (sub-project 1!)
  - Initial design meeting with PDS tech staff planned for May 2009
  - Multiple releases will be performed with a final 4.0 release planned for Sep 2010
- Migration plan will be in place for system components
  - Retire aging system components
  - Each component will have a transition plan. An initial plan is already being developed based on the architecture decomposition.
- The major transition will be accepting data in PDS 4.0 standard
  - Will ensure that access and use of PDS3 data will remain viable
    - Multiple options have been discussed; May tech session will review migration options and present tradeoffs to MC at August meeting
  - Target Acceptance of PDS 4 Data in 2012