

A horizontal banner image featuring a sequence of celestial bodies from left to right: a blue planet (Earth), a brown planet (Mars), a brown planet (Mars), a white planet (Jupiter), and a brown planet (Mars). The text "Planetary Data System" is overlaid in white on the right side of the banner.

Planetary Data System

# **PDS4 Discipline Node Perspectives**

PDS 2010 System Review

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# Overview

- Anticipated benefits
- Discipline Node Exercise, November 2009

# Anticipated Benefits (1a) For Data Providers

- Limited number of unambiguous structures
  - Requirements can be described clearly and succinctly
- Providers will have control of their dictionary namespace
- Modern W3C standard language (XML)
  - Stable third party tools (e.g., parsers, context sensitive editors)
  - PDS will be able to develop better tools for providers
  - Will streamline provider's pipeline development

# **Anticipated Benefits (1b) For Data Providers**

- Much more stable and efficient archiving pipelines for major providers
- Archive preparation should be more clear and less frustrating

## Anticipated Benefits (2) For Data Users

- Improved product oriented, data access
  - Search and retrieval at the product level.
  - Easy to find supporting and relevant ancillary products.
  - Support for transformations to contemporary formats.
- PDS will be able to shift its emphasis from archive generation and maintenance to user support

## **Anticipated Benefits (3) For PDS Nodes**

- Streamlines archive generation
  - Lower frustration for providers and receiving nodes
- Simpler data system maintenance
  - Designed in capabilities for archive monitoring, data integrity, data security, and system security
- Improved efficiency across the board
- Cross-node consistency

# Node Exercise

## Primary Goals

1. Make a qualitative assessment of whether the approach will support science requirements.
3. Identify issues
  - with the model – shortfalls, excess details, ...
  - regarding the proposed xml implementation of the model
  - with the primary documents – standards ref, data dictionary
  - with the tutorial documentation
  - identify essential tools for first release

# **Node Exercise**

## **Secondary Objectives**

Get experienced node personnel to use the new data architecture:

- Become familiar with the structural elements
- Determine if the base structures are sufficient
- Prototype selected discipline data products in the PDS4 structures
- Begin identification of discipline descriptive metadata.



# **Node Exercise**

## **Typical Approach**

- Involve members of the node staff who routinely work with data preparers.
- Pick a representative data set or data sets
- Attempt to use the provided information to prototype one or more PDS4 product labels.

# **Node Exercise**

## **Results Summary (1)**

Goal 1: Make a qualitative assessment of whether the approach will support science requirements.

Result: Yes.

- Not an exhaustive sampling.
- Unidentified requirements.
- System is robust and flexible.

# **Node Exercise Results Summary (2)**

Goal 2: Identify issues.

Result: No show stoppers.

- Steep XML learning curve.
- Identified several areas that need work – not a surprise.
- Produced recommendations and priorities for a wide range of activities.

# Backups

**Questions?**

# Node Review Details (1)

Goal: Identify issues with the model – shortfalls, excess details, etc.

- Mechanism to associate multiple products
- Mechanism to preserve original structure
- Mechanism for separating dynamic metadata from the label
- Insure preservation of processing history
- Complete portions of model which are still skeletal.
  - Formation rules (e.g., IDs)
  - Packaging

## **Node Review Details (2)**

Goal: Identify issues regarding the proposed xml implementation of the model.

- Need to formalize the implementation
  - Define the subset of XSD (schema)
  - Identify PDS XML best practices
- Improve XML expertise within PDS

## Node Review Details (3)

Goal: Identify issues with the primary documents – standards ref, data dictionary.

- Standards Ref – need more complete model and implementation first.
- Data Dictionary – available for this exercise more a mockup than a prototype.
  - Firm up the structure
  - Develop detailed contents (definitions, etc.)
  - Style sheet based on common dictionary
  - Develop node dictionaries



## Node Review Details (4)

Goal: Identify issues with the tutorial documentation.

- Determine the forms of tutorial information
- Identify tutorial topics
  - How to do archiving
  - XML for PDS, XML editors and PDS
  - Meaning of schemas and acceptable ways that they can be modified
  - Local dictionary development
  - PDS tools

## Node Review Details (5)

Goal: Identify tools that will improve the process.

- Build-a-schema tool
  - GUID lookup tool
  - Updated PDS validation tools
- \* These relate to the exercise. Tools for end user support are not addressed here.