

PDS4 Background Information for Assessors of Build 1d PDS4 Standards

September 2011

Intent

- PDS is seeking outside input and review regarding the design of the PDS4 data standards released as part of PDS4 build 1d
- The review will be conducted in two phases
 - Phase I: Review of the high level concepts and documents
 - Phase II: Review of the core standards reference, the data preparers handbook, and examples
- Please note that this is a work in progress and there are TBDs and some known issues in the documents
 - Your feedback will help us improve the design

Phase I: Materials

- Materials are posted at the following review site
<http://pds.jpl.nasa.gov/build1dreview/>
user: pds4, password : 1dReview
- Please send review materials and input to Reta Beebe (rbeebe@nmsu.edu) by **September 22, 2011**.
- If you have technical questions, please contact Steve Hughes (Steve.Hughes@jpl.nasa.gov) or Ron Joyner (Ron.Joyner@jpl.nasa.gov).
- If you have review questions, please contact Reta Beebe (rbeebe@nmsu.edu) or Dan Crichton (Dan.Crichton@jpl.nasa.gov).

Phase I: Assessment

- Phase I assessment involves the following steps
 - Read the Introduction document on the Build 1d review page
 - Review the documents listed under Phase I Review on the review page (Concept, Glossary, Jump Start, Data Dictionary Tutorial and Data Dictionary)
 - Answer a set of questions (on the Phase I assessment response sheet listed under Phase I Review on the review page)
 - Capture the issues (on the Phase I assessment response sheet)

Phase I: PDS4 Data Standards Documents

The following 'documents' will be reviewed as part of phase I:

1. Introduction – A guide to get you started.
2. Concepts Document – Introduction to PDS4 key concepts — the view from 10000 feet, avoiding gory details.
3. Glossary – A concise set of definitions for key PDS4 terms. Although primarily intended as a quick reference, the Glossary is organized functionally, presenting terms in the approximate order in which you are likely to encounter them.
4. Jumpstart Guide – A brief introduction to PDS4 in terms of analogous PDS3 vocabulary. Experienced PDS3 users should read it once, noting both the parallels and the differences; then set it aside. People not familiar with PDS3 should skip it; concentrate on the Concepts Document.
5. Data Dictionary Tutorial – A tutorial introduction to the PDS4 Data Dictionary.
6. Data Dictionary – The data dictionary defines the organization and components of PDS4 product labels.

Phase II: Materials

- Materials are posted at the following review site
<http://pds.jpl.nasa.gov/build1dreview/>
user: pds4, password : 1dReview
- Please send review materials and input to Reta Beebe (rbeebe@nmsu.edu) by **October 14, 2011**.
- If you have technical questions, please contact Steve Hughes (Steve.Hughes@jpl.nasa.gov) or Ron Joyner (Ron.Joyner@jpl.nasa.gov).
- If you have review questions, please contact Reta Beebe (rbeebe@nmsu.edu) or Dan Crichton (Dan.Crichton@jpl.nasa.gov).

Phase II: Assessment

- Phase II assessment involves the following steps
 - Review the documents listed for Phase II Review on the review page (Data Provider's Handbook and Standard Reference).
 - Review the example products on the review page.
 - Answer a set of questions (on the Phase II assessment response sheet under Phase II Review on the review page)
 - Capture the issues (on the assessment response sheet)

Phase II: PDS4 Data Standards Documents

The following 'documents' will be reviewed as part of phase II:

1. Examples – A set of products, collections, bundles, and packages that illustrates design concepts and goals.
2. Standards Reference – One of the two fundamental reference documents for PDS4. You will need this as you work your way through the Data Provider's Handbook and as you prepare an archive.
2. Data Provider's Handbook – A cookbook to guide data providers step-by-step through the process of developing an archive.

Key PDS4 Definitions*

- **digital object:** An object which is real data — for example, a binary image of a redwood tree or an ASCII table of atmospheric composition versus altitude.
- **physical object:** An object which is physical or tangible (and, therefore, does not itself fit into a digital archive). Examples of 'physical objects' include the planet Saturn and the Venus Express magnetometer. Note that an ASCII file describing Saturn is a digital object, not a physical object (nor a component of a physical object).
- **conceptual object:** An object which is intangible (and, because it is intangible, does not fit into a digital archive). Examples of 'conceptual objects' include the Cassini mission and NASA's strategic plan for solar system exploration. Note that a PDF describing the

* from "GLOSSARY OF PDS4 TERMS"

Key PDS4 Definitions (cont'd)

- **description object:** Something that describes an object. As appropriate, it will have structural and descriptive components. Technically speaking, a 'description object' in PDS4 is a 'digital object' — a string of bits; but we assume that we can read it and, on that basis, give it a special name.
- **tagged digital object:** A digital object paired with its companion description object. [Note: In the OAIS RM this is known as an 'information object']
- **tagged non-digital object:** A physical object or a conceptual object paired with its companion description object. [Note: In the OAIS RM this is known as an 'information object']
- **information object:** A data object paired with its description.

Key PDS4 Definitions (cont'd)

- **product:** One or more tagged objects (digital, non-digital, or both) grouped together and having a single PDS-unique identifier. In the PDS4 implementation, the descriptions are combined into a single XML label. Although it may be possible to locate individual objects within PDS (and to find specific bit strings within digital objects), PDS4 defines 'products' to be the smallest granular unit of addressable data within its complete holdings.
- **basic product:** The simplest product in PDS4; one or more data objects (and their description objects), which constitute (typically) a single observation, document, etc. The only PDS4 products that are not basic products are Product_Collection and Product_Bundle. Every basic product must be a primary member of one (and only one) collection. Basic products may be secondary members of any number of collections

Key PDS4 Definitions (cont'd)

collection: A list of basic products, all of which are closely related in some way. A collection is itself a product (because it is simply a list, with its label); but it is not a basic product.

bundle: A list of collections. For example, a bundle could list a collection of raw data obtained by one instrument during a mission lifetime, a collection of the calibration products associated with the instrument, and a collection of all documentation relevant to those collections.

THANK YOU FOR YOUR TIME!

PDS4 Documents and their Relationships

