



Technical Session

PASADENA, CALIFORNIA

13-15 FEBRUARY 2018





Motivation

- Best Practices for PDS4 Bundle creation & consistency across PDS
- Validation & registration of PDS4 data in Central Registry vs. Local Registries
- Migration Plans & Best Practices for Migration
- Search – Best Practices, Metadata, Levels of Search
- Tools to support data providers and users build and use PDS4

- **Preparation for the move to V2.0.0.0**
 - TARGET : In 2 years to be ready for Mars 2020... Spring - Fall 2019 Build Cycle
 - We need to define issues and successes and how much more work needs to be complete before V2.0.0.0 can exist.

Registered Bundles

	Atmospheres	CIS	Geosciences	NAIF	PPI	RMS	SBN
SCPPS							BOPPS 2014 Observations
LADEE	LADEE Mission						LADEE IDEX
	LADEE NMS						
	LADEE LUVS						
MAVEN	MAVEN Accelerometer			MAVEN SPICE	MAVEN Ancillary		
	MAVEN NGIMS				MAVEN EUV		
	MAVEN ILUS Calibrated				MAVEN EUV Calibrated		
	MAVEN ILUS Derived				MAVEN EUV Modeled		
	MAVEN ILUS KP				MAVEN In situ KP		
	MAVEN ILUS Processed				MAVEN LPW		
	MAVEN ILUS Raw				MAVEN LPW Calibrated		
					MAVEN LPW Derived		
					MAVEN LPW Raw		
					MAVEN MAG Calibrated		
MER		Ruff PDART 2014 Mini-TES Mirror-dust-corrected Emissivity	MER Pancam Photometry				
			Izenberg PDART 2014 MESSENGER Advanced Products				
Messenger							
Mars Pathfinder	IMP Opacities Bundle						
MRO		Mars Global Cave Candidate Catalog					
NEAR							EROS MI IMAGES WITH GEOMETRY BACKPLANES
None							ASTERIOD LIGHTCURVE DERIVED DATA
							Asteroid Occultations
							BINARY MINOR PLANETS
							REDFI NEAR-EARTH AND MARS-CROSSING ASTEROIDS
Phoenix	Phoenix AD ISI	Phoenix RA					Groundbased Observations at KPNO
	Phoenix ASE						
	Phoenix MET						
	Phoenix Mission						
	Phoenix TT						

Registered Bundles

Atmospheres: 16

CIS: 3

Geosciences: 2

NAIF: 1

PPI: 14

RMS: 0

SBN: 8



Creation of a PDS4 Archive

- PDS4 is not just labels for data – Archiving is not just slapping labels on data.
- Interconnectivity of all products with LIDs
- Bundles: top-down approach
 - Logical order to produce bundles.
 - LID determination for INTERNAL References
 - Selection of CONTEXT references
 - Setup of Bundle member Collections
 - Determination of DOCUMENT references
 - Inclusion (optional) of LDDs
 - Determination of Product types for each Collection.
 - Generation of Bundle & Collection files
 - Product file label creation in conjunction with Bundle and Collections
 - Generation of Inventory Files (& Context/XML Schema Collections*)

Context and XML Schema Collections

Are these necessary or required? PROS and CONS

PROS

- Useful reference lists
- All secondary products listing can be auto-generated

CONS

- Not terribly useful for data users

Submission, Validation, Registration

- Completion of a PDS4 Bundle is when all parts are complete, submitted, validated AND registered in PDS Central Registry.
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Context Products

- Currently managed by EN and located at the <https://starbase.jpl.nasa.gov/> site
 - Is this going to remain here with this organization?
 - Is there consistency and enough metadata in each context product?
 - PDS3 cross-over products should be cleaned up? (as we use them in migrations/new data)
 - Facility products should be analogous to Instrument_Host – connectivity/ownership of instruments below those top level products.
- Automatic population and cut/paste. Dissemination to data providers.
- Content of the context products
 - Cleaning up PDS3-migrated catalog files as context products
 - Consistency and accuracy of the metadata
 - Do we need more information in these products?

Context Products

- Need to be scrubbed:

· <Telescope>

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<telescope_latitude unit="deg">19.825945</telescope_latitude>  
<telescope_altitude unit="m">4160</telescope_altitude>  
<coordinate_source>Aerial Survey - North American (1983) Datum</coordinate_source>
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– <External_Reference>

– <reference_text>

Tolson, R.H., G.M. Keating, R.W. Zurek, S.W. Bougher, C.G. Jus

</reference_text>

<description>reference.TOLSONETAL2007</description>

</External_Reference>

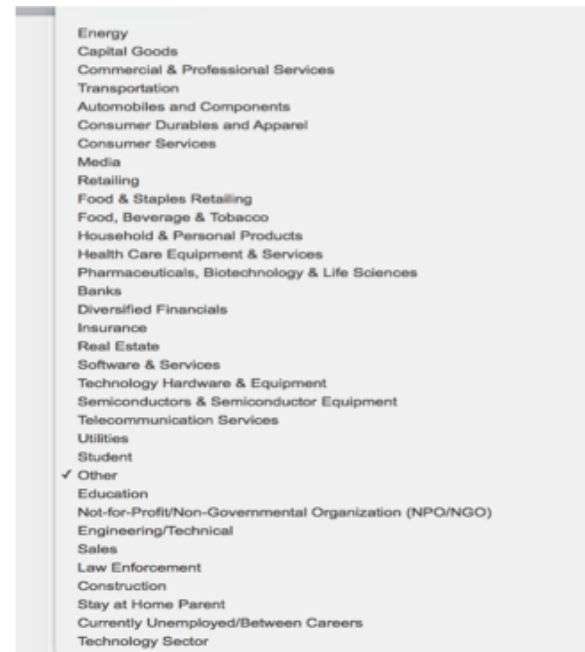
</Reference_List>

– <Instrument>

<name>ACCELEROMETER</name>

Search

- Local vs. Global
- Bundle/Collection vs. Product Level
- Large Enumerated Lists – When to use enumerated lists...



Migration

- PDS3 Volume Structure and PDS4 Bundle Structure can co-exist
 - Best to put PDS4 labels alongside the PDS3 labels and products
 - [option] to put File_Area_Observational_Supplemental connection in the PDS4 label to the PDS3 legacy label
 - Validation of both PDS3 and PDS4 archives are independent
 - PDS4 only uses what is described in the Bundle/Collection labels and Collection Inventory files
 - PDS3 ignores(?) the XML labels if these are co-located?

Fixes and Point Builds

- With increased usage, we will find other missing values, incomplete enumerations, missing context products, and may need other 'quick fixes'
- What is the preferred method of updating these fixes?
- How often are Point-Builds needed? How many are too many?

