

3rd IPDA Steering Committee Meeting NASA/PDS Report

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Topics for Discussion

Explanation of PDS structure and operations.

PDS developments

PDS interactions with Non-NASA missions

NASA Missions of interest

NASA PDS Operations

The PDS is composed of science discipline nodes and service nodes and is managed by a NASA Headquarters Program Manager and a group at Goddard Space Flight Center

Decisions concerning the system capabilities, architecture, data ingestion, etc are made by the Management Council (MC), consisting of a member from each node and co-chaired by Ed Grayzeck, PDS Program Manager, and Reta Beebe, PDS Program Scientist. The MC meets 3 times/yr + monthly formal telecons.

The last meeting was July 7-8 in Flagstaff, Arizona. Beebe presented IPDA & COSPAR status to the MC, which strongly supports our efforts .

PDS Development

The current version of the PDS is PDS3. The PDS was established before the web development when data sets were small. PDS3 is an evolved archiving model.

Extensive effort is being made to assess the strengths and weakness of PDS3 and plan for a new version.

This is being done within the constraints of the current budget and is using a “project” approach, similar to that of IPDA.

Dan Crichton, the Engineering Node Manager, is leading the effort designated PDS 2010, the character of which is still to be defined.

The PDS 2010 plan for the next generation PDS was presented to PDS MC. PDS MC approved the work scheduled through to the end of 2008. This includes an update to the PDS Archive Data Standards that will benefit the IPDA

PDS Development

PDS is developing a new central interface.

It is now ready for beta testing.

If you are interested in testing it send me an email at:

rbeebe@nmsu.edu with the title -- Testing of PDS site.

PDS Development - Coordinates

Divergence of coordinates used by NASA Mars instrument teams created a problem in the past.

In an effort to avoid that for International Lunar Missions, the Imaging Node has been working with the Exploration Division to assure that a unified planetary coordinate system is available for Lunar exploration.

The imaging node is managed by Lisa Gaddis, based at the U.S. Geological Society (USGS) in Flagstaff Arizona. At the PDS MC, she presented “the Unified Planetary Coordinates System: A Searchable Database Of Geodetic Information”.

This system is based on IAU coordinates. The IAU standards are maintained by the USGS.

PDS Interaction with International Missions

The PPI node is supporting the Kaguya (Selene) project in preparing their data for archive

The Small Bodies node is supporting Rosetta

GEO is interacting with Mars Express and Chandrian-1, supporting archiving of US instrument data

ATMOS is supporting development of Venus Express data and IPDA interoperability work.

Selected NASA PDS Mission Status

LRO - End-to-End Testing

New Horizons - PI Missions & Data Analysis Programs

Cassini & Juno - for fun

NASA PDS Mission Status - LRO

PDS has developed End-to-End Test Plans to assure missions are ready to archive. Lunar Reconnaissance Orbiter is undergoing this procedure with the GEO node leading it.

- Test Plan

- Describes purpose and procedure for each test
- Lists roles and responsibilities of PDS and LRO personnel
 - Test managers: one from PDS lead node, one from LRO management
 - Test leads: one from each team and PDS node
 - Data engineer at EN
- Includes test schedule over a period of about five months
- Includes sample test checklists for teams to modify

- Test Descriptions

- Test 1: Delivery path, handshaking, checksums
- Test 2: Skeleton archive volume, manifest
- Test 3: Typical archive volume, coordination with EN

NASA PDS Mission Status - New Horizons

The small bodies leads the New Horizons archiving. The Jupiter flyby data has been archived and released to the public.

New Horizons is a first New Frontiers mission, Juno is the second.

New Frontiers and Discovery Missions (ie. DAWN) are Principle Investigator missions selected through a competitive process.

A NASA requirement for a PI led mission is that the budget contain funds for a data analysis program (DAP), managed at NASA headquarters.

Proposals have been submitted and the review panel is being set up to allow non-mission scientists to receive funding to analyse the data.

Meanwhile the mission continues on to Pluto.

NASA PDS Mission Status - Cassini

The Cassini mission is in excellent shape with adequate expendables to last for years if sequences are carefully planned.

Equinox Mission (Extended Mission) approved - began July 1 - funded at previous level for 2 years

Cassini Solstice Mission (Extended-Extended Mission) is under development - guideline is 50% funding mission scenarios that require less labor

Bob Pappalardo is the new Project Scientist with Claudia Alexander as Project Staff Scientist. They are interested in increasing access to Cassini data. As lead node, the ATMOS node will be interacting with them.

NASA PDS Mission Status - Juno

The Juno mission will arrive at Jupiter in 2013 and enter an 11-day near polar orbit that is nearly atmospheric grazing. During the first 16 orbits it will place map the planet at equal latitudinal intervals - followed by a reset that will fill in between.

The inner magnetic field and detailed gravitational field will be characterized and a 6-channel microwave spectrometer will map H₂O and cloud distributions

The Juno mission Preliminary Design Review is nearly completed. It is in good shape and should move into Phase B soon.

Cassini mission planners tell us they can put the spacecraft into a similar configuration for end-of mission, passing inside the D-ring.