Planetary Data System
Planetary Plasma Interactions Node

PPI Node Report FY12

PDS MC, College Park, MD

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Mission Support: Dawn

- A compromise to the coordinate system problem has been reached which allows the Dawn Project to submit data to SBN for peer review.
- The agreed upon modifications have been performed by the Dawn Science Center (DSC) and deliveries made to SBN.
- While the project is still behind schedule, all of the data which should be public (with the exception of Radio Science) have now been delivered to SBN for peer review.
- Vesta deliveries will now undergo peer review.
- Next delivery (LAMO, Low Altitude Mapping Orbit) due late July 2012.

Mission Support: Cassini

- Routine data deliveries of EDR products continue.
- In peer review:
  - MIMI EDR data sets: file formats, labels updated
  - MAG RDR data sets: liens resolved, reviewers verifying resolutions
- Delivery of many Cassini high order products is delayed.
  - Problem: The Cassini Data Analysis Program AO allows proposals to use data to be delivered later in the funding period.
- Development of Users' Guides continues.

Mission Support: Cassini

Cassini High Order Products			
Inst	Product	Proposed Delivery	Status
CAPS	• electron density • electron temperature • ion flow velocity • separate density and temperature values for different ion species	FY2011	delayed; delivery promised: April 2012
INMS	• Titan neutral density profiles	FY2011	delayed; delivery promised: March 2012
MAG	• Orbit plots • satellite flyby plots • magnetic-field intersect plots	FY2011	Orbit and satellite flyby plots delivered (no labels) Magnetic-field intersects delayed; delivery promised April 2012

Mission Support: Cassini

Cassini High Order Products			
Inst	Product	Proposed Delivery	Status
MIMI	• LEMMS/CHEMS spectrograms • LEMMS particle pressures • INCA browse plots	FY2011	Various sample plots and labels delivered to PPI; under review
	• INCA movies • Time averaged data products (LEMMS, CHEMS, and INCA)	FY2012	
RPWS	None	-	-

Mission Support: Cassini

User Guides		
Inst	Expected delivery	Status
CAPS	End of February 2012	Delayed
INMS	Delivered	Neutrals Guide: delivered to PPI Ions Guide: under internal review
MAG	Delivered	Under review
MIMI	Early March 2012	
RPWS	n/a	Current archive documentation sufficient

Mission Support: Active Missions

MAVEN

- Will be reported separately.

Juno

- JEDI and Waves SIS' have been reviewed, and revised versions delivered.
- JADE and MAG have not delivered SIS's.

MSL

- RAD EDR peer review comments have been submitted; working on scheduling telecon.

Mission Support: Active Missions

MESSENGER

- Routine delivery of MAG and EPPS Mercury orbital data continues.
- MAG has begun designing CDR products. CDR SIS has been delivered, reviewed, and is under revision.

Mars Express

- ASPERA continues routine data deliveries.
- PPI continues acquiring and distributing MARSIS data.

LRO

- CRaTER routine data deliveries continue.

Mission Support: Active Missions

MGS

- MAG high resolution data delivered through August 2005.

Kaguya (Selene)

- Awaiting delivery of data products.

Mission Support: Restorations

Voyager 1 and 2

- PLS solar wind data updated.
- LECP data in preparation by FTEC sub-node.

Galileo

- Magnetometer high field data was recalibrated and pending delivery.
- PLS magnetospheric moment data received.

Venera 15/16

- Ionospheric electron density profiles received.

Baseline Activities: Data Reorganization

- PPI has been reorganizing all data holdings in order to facilitate PDS4 migration.
  - Volumes have been reorganized as datasets.
  - Metadata have been updated to PDS 3.8.
- Reorganization is nearly complete. Anticipated completion: May 2012.

Baseline Activities: PDS4 Migration

- PPI plans to begin migrating its holdings to PDS4 beginning summer 2012 (using PDS4 version 2c). Initial emphasis will be on:
  - MC approved data sets
    - CO-V/E/J/S/SS-RPWS-3-RDR-LRFULL-V1.0
    - CO-E/J/S/SW-MIMI-2-CHEMS-UNCALIB-V1.0
  - Data sets similar to those anticipated for MAVEN
  - Closed (complete missions)

Baseline Activities: PDS4 Support

- Support for PDS4 development will continue through the June 2012 release and beyond.
- PPI participated in the DDWG, SDWG, and MIWG.
- PPI developed an Apache Velocity tool to transform PDS3 to PDS4 (Imaging Nodes tool was the inspiration).
- PPI wrote tutorials and demonstrated the used of XML schema for structure validation and ISO Schematron for content validation.
- Delivery of a stable standard is critical as it now begins to impact mission support.

Baseline Activities

Hardware

- PPI's data delivery storage has been upgraded.
- Portable RAID containing PPI holdings readied for delivery to the Iowa sub-node.
- Data engineering workstations upgraded.

Software

- PPI has continued to improve the inventory and search capabilities of its webpages.
- PPI website and software tools have been brought under configuration control.

NSSDC Rightsizing – The Role of PDS

State of analog data in the NSSDC archive

- Many NSSDC data collections consist of analog data (microfilm, fiche, prints, etc.).
- Many collections are within the scope of the PDS mission.
- Data in the NSSDC Master Catalog can be difficult to survey:
  - Descriptions are terse – unclear about nature of data, or even whether data are analog or digital.
  - No keyword search for terms like “digital,” “microfilm,” etc.
  - Some searches return inaccurate results (data from wrong spacecraft).
  - Searches might overlook duplications among collections.
- Deciding the scientific usefulness of data is a time-intensive task.

NSSDC Rightsizing – The Role of PDS

Actions necessary for analog data preservation

1. Determine whether each data collection is digital or if it has been digitized (at NSSDC, PDS, or elsewhere).
   - If analog data also exist in digital form, no need to keep hardcopy.
2. Assess scientific usefulness of analog collections.
   - If analog data are scientifically useful, then preserve them.
3. Assess effort required to digitize the data.
   - Digitization can be as simple as scanning to a PDF file.
   - Some digitizations may require converting an analog table to text.
   - Other digitizations may be more challenging.
4. If data cannot be digitized with a reasonable amount of effort, retain the analog version.

NSSDC Rightsizing – The Role of PDS

Role of PDS in NSSDC data preservation

- Consider PDS as possible partner in digitization efforts.
- Consider PDS as possible archive for analog data (at least until digitization is completed).