

Planetary Data Archiving at ESA Report

IPDA Steering Committee Meeting
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PSA User Interface (Services)

<http://www.rssd.esa.int/psa>

- Data Query – Single entry point
 - One concept for all missions and instruments
 - Mission specific queries
 - Instrument specific queries
 - Geometrical and positional related queries
 - 'query save' for end user
- Data Retrieval
 - Direct data product retrieval
 - 'delivery basket' functionality for
 - Full data set retrieval
 - Multiple data product retrieval
 - Retrieve the results of multiple queries
- Browse data / thumbnails whenever applicable

End Users, Services and Functionalities Offered

- PSA Scientific Advisory Group
- Helpdesk, Notification
- Data Query and Retrieval
- PDS Standard Support (currently only for Version 3!!)
- Coordination and chair for Peer Reviews
- Design, Production and Delivery of auxiliary data
 - SPICE conversion
 - Software consultancy and support
 - ESOC data long-term archive preparation
 - Science planning information, long-term archive preparation

Data Producers, Services and Functionality Offered

- Data Archive Workshops on request (internal and external)
- SPICE Workshops (on request) ~yearly
- Individual Archive Consultancy from early phase
- Coordination of Mission Data Archive Working Groups (DAWG)
- Coordination and support of Mission geometrical parameter information
 - *GEO indexes* produced by PSA or using a software library developed and supported by PSA.
- Dataset Support/Development Tools
 - *Product generation from telemetry to L2 (GDP)* – used for C1
 - Dataset validation
 - Dataset ingestion

PSA Data Producer Services

- ❑ **We offer a PSA Volume Verification Tool (PVV)**
 - Data producer
 - Can verify the structure of the whole data set
 - Can verify the content of the ODL language
 - Can verify the references, catalogue structure, etc
 - Database
 - Can easily ingest data sets (standard delivery within one week)
- ❑ **PVV includes**
 - Semi-automatic update of the tool
 - Direct connection to the PSA database (network based)
 - Always the latest dictionary
 - Support of former dictionary versions
- ❑ **PVV does not include**
 - A guarantee of PDS compliance! [Depending on the Node, neither does vtool!]
- ❑ **PVS: qualitative validation *now operational!!***

Current Status, Available Datasets

- **GIOTTO:** data from comet Halley and Gripp-Skellerup
 - Comet Halley ground-based observations (Halley-Watch)
- Comet Wirtanen ground-based observations
- **Mars Express:** instrument and auxiliary data available (~8Tb)
 - HRSC Radiometric, Map-Projected and DTM data now available. Data up to December 2008. Re-delivery last year [disk space issue].
 - ASPERA NPI and ELS data up to June 2008 available.
 - OMEGA, SPICAM, MARSIS and MaRS data all available and deliveries continue.
 - PFS data only on FTP.
 - Calibrated data from several instruments now coming in.
 - Working group on Mars upper atmosphere... more data.

Current Status, Available Datasets

- **Huygens:** instrument and housekeeping data available for all instruments
 - New GCMS data has just been sent
 - DISR re-ingestion planned with improved 'processing'
- **Venus Express:** first data sets released Spring 2009
 - VMC, SPICAV-SOIR available and more deliveries being ingested.
 - MAG now being ingested and calibrated data on the way.
 - VIRTIS and SPICAV still closing out review, but available via ftp.
- **Rosetta:** first data release still in preparation, pending PDS acceptance
 - PDS collaborations ongoing and slowly improving...
 - Validation is a major issue.
 - Steins fly-by review will be October this year.

Current Status, Available Datasets

- **SPICE:** Rosetta and MEX data sets released - VEX SPICE Review recently closed and will be available very soon.
- **Chandrayaan-1:** data pipeline running at ESAC for CIXS and SIR2.
- **SMART-1:** AMIE data review underway
- **BepiColombo:** data handling and archive support now taking shape
- Updated PSA WWW area – continuous improvements:
 - Tools
 - Documentation
 - FTP Access
 - <http://www.rssd.esa.int/PSA>

PSA and the PDS collaboration

❑ **It was decided at an early stage that PSA data would comply with PDS Standards:**

- To maximise the cross-compatibility of ESA and NASA data
- Existing and well established standard in the community

❑ **We have good contact and excellent support from several of the PDS Nodes:**

- MEX: Geosciences. MOU between ESA and NASA
- Rosetta: Small Bodies Node. International mission.
- VEX: Atmospheres Node. *Interoperability*. Review support.

Rosetta issues

❑ **Rosetta review took place Feb 2007 but data are still not available.**

- Full ingestion (and hence compliance) required at PDS
- How does one ensure full compliance?
 - VTOOL? LVTOOL? TBTOOL?
 - REVIEW?
 - FULL PDS INVOLVEMENT IN ARCHIVE DEVELOPMENT CYCLE?
 - ALL OF THE ABOVE...
 - MORE!?

General Issues

- Incomplete deliveries to the scientific community as calibrated data deliveries are not available in time by some experimenter teams on the on-going planetary missions
- Mars Express Independent Review clearly indicated
 - the need to distribute calibrated data
 - the need to distribute basic visualizing software
- Insufficient resources within some of the experimenter teams
- Limited knowledge of required space (also manpower) for deliveries
- Parallel activities in member states