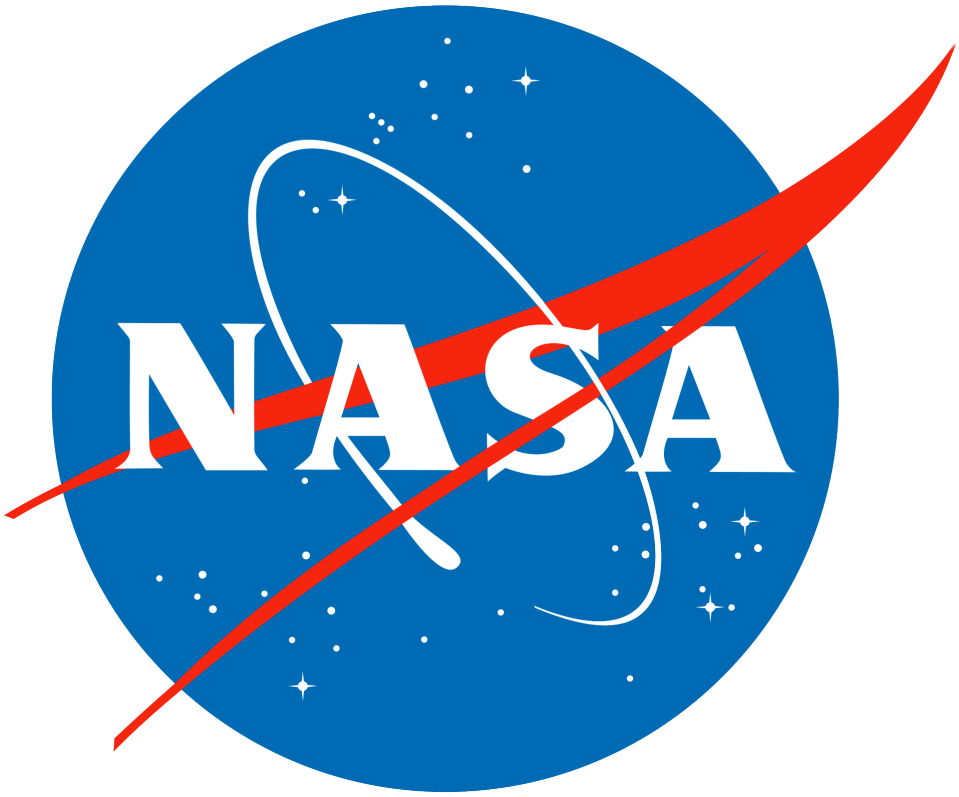
# NASA Planetary Data System
# PDS4 Test Summary
# For LADEE and MAVEN



## Change Log

| Revision | Date | Description | Author |
|---|---|---|---|
| Initial | Sept 15, 2013 | Initial draft release. | Emily Law |

# Contents

# 1 Executive Summary

This report summarizes results of PDS4 Build 3b tests demonstrating its readiness for data providers from LADEE and MAVEN in support of the Interface Control Agrement (ICD) between PDS and the missions. PDS4 LADEE and MAVEN analogous data products based on PDS4 Standards V1.0 were used as test data. Testing of this build included:

- Deisgn and Generation context products and bundles (PDS Requirement 1.5.1)
- Validation of product labels (PDS Requirement 1.5.2)
- Harvest and registration of products, bundles and web resources (PDS Requirement 2.6)
- Search and access bundles and web resources. (PDS Requirement 3.1)

Testing was performed by PDS staff from Atmosphere Node (ATMOS), Engineering Node (EN) and PPI Node (PPI).

No critical issues nor anomalies were detected. Build 3b software infrastructure has been used operationally since June 2013 at EN in support of all PDS data including new deliveries from existing PDS3 missions. The Validate Tool, Harvest Tool and Registry Service are in place at ATMOS and PPI for testing. Build 3b is ready for the data providers from LADEE and MAVEN. Additional capabilities will be included with build 4b, however, these are principally for additional information model support.

# 2 Test Summary

## 2.1 Testing completed by ATMOS Node

PDS4 build 3b software was installed at the Atmospheres Node including the validate, harvest and registration software.

LADEE-like and MAVEN-like products were generated and validated. LADEE and MAVEN Table_Character data products are very similar to Phoenix (PHX) data products. LADEE Table_Charater templates were validated with oXygen based off of the Phoenix test cases. Phoenix PDS4 data including Table_Character, Document, Context and XML_Schemas were validated and harvested in the ATMOS local registry and EN Central Registry. Upon registration, the PHX bundles and mission archive web page were searchable via the PDS portal and the products were downloadable.

A couple of minor issues were uncovered and are not considered as show stoppers. They will be addressed in Build 4a as bug fixes.

## 2.2 Testing completed by PPI Node

PDS4 build 3b software was installed at the PPI Node including the validate, harvest and registration software.

MAVEN-like products were generated and validated . MAVEN data products will be very similar to MGS, PHX and ATEMIS data products. MAVEN-like PDS4 data including Table_Character, Array_1D, Array_2D, Encoded_Image, and Conext were generated and validated and then harvested successfully in the PPI local registry

No anomalies were detected. More detailed can be found at:

http://pds.nasa.gov/pds4/orr0913/PPItestSheet.xlsx

## 2.3 Testing completed by Engineering Node

The full suites of build 3b software was installed at the Engineering Node including the validate tool, the harvest tools, the registry service, and the search service.

Three test sets were performed by EN:

1. Testing of Build 3b infrastructure prior to deployment to Operations in June 2013.
2. Using a PHX bundle created by ATMOS to test validate, harvest, registration, and search functions.
3. Testing of design/generate, validate, harvest, registry and search functions of a bundle including LADEE-like and MAVEN-like products (Table_Character, Array_1D, Array_2D, Context)

No anomalies were detected. The detailed test plan, procedures and report, and test data used for the first test set can found at:

http://pds.nasa.gov/pds4/orr0913/build3bTestPlanEN.pdf

http://pds.nasa.gov/pds4/orr0913/build3bProceduresReportEN.pdf

http://pds.nasa.gov/pds4/orr0913/PDS4test.build3b.tgz

Detailed test plan, procedures and report , and data used for the second and third test sets can be accessed at:

http://pds.nasa.gov/pds4/orr0913/build3bTestPlanNodes.pdf

http://pds.nasa.gov/pds4/orr0913/build3bProceduresReportNodes.pdf

http://pds.nasa.gov/pds4/orr0913/nodeTestData.tgz

# 3 Appendix – LADEE and MAVEN Traceability Matrix

| Deliverable | PDS Requirements | PDS Components | Review & Test Cases |
|---|---|---|---|
| LADEE LDEX & UVS products - tab delimited ASCII tables | Req 1.4 Archiving Standards | Information Model, Schemas, Standards Reference | Standards Review, Build 3b NODEFUNCTION.1** |
| LADEE NMS products - comma delimited ASCII tables | Req 1.4 Archiving Standards | Information Model, Schemas, Standards Reference | Standards Review, Build 3b NODEFUNCTION.1 |
| MAVEN IUVS products - FITS files | Req 1.4 Archiving Standards | Information Model, Schemas, Standards Reference | Standards Review, Build 3b NODEFUNCTION.1 |
| MAVEN NGIMS, MAG, ACC products - ASCII tables | Req 1.4 Archiving Standards | Information Model, Schemas, Standards Reference | Standards Review, Build 3b NODEFUNCTION.1 |
| MAVEN STATIC,SEP,SWEA,SWIA,LPW,LPW-EUV products - PDS4 compliant CDF files | Req 1.4 Archiving Standards | Information Model, Schemas, Standards Reference | Standards Review, Build 3b NODEFUNCTION.1 |
| Templates for data and documents | Req 1.2.1 PDS will provide examples and suggestions | Samples, Data Provider Handbook, Archive Preparation Guide | Standards Review, Build 3b NODEFUNCTION.1 |
| Assistance & review of SIS and sample data files | Req 2.4 Peer Review | Peer Review Guideline | Follow the PDS review process |
| Validation tools for PDS4 standards compliance | Req 1.5.2 PDS will provide tools to validate products against PDS standards | Validate Tools | Build 3b, NODEFUNCTION.2 |
| Final products review and acceptance | Req 2.4 Peer Review, Req 2.5.2 PDS will implement procedures for accepting archival data | Peer Review Guideline, Archive Preparation Guide | Follow the PDS review process |
| Data distribution to science community | Req 3.1 Search, Req 3.2 Retrieval | Search service (discovery and download) | Build 3b, NODEFUNCTION.4 |

NODEFUNCTION.n are test cases defined and exercised to verify design, validation, harvest, registration and search functions needed to support data providers from LADEE and MAVEN. They can be found in the following test plan and procedures/report:

http://pds.nasa.gov/pds4/orr0913/build3bTestPlanNodes.pdf

http://pds.nasa.gov/pds4/orr0913/build3bProceduresReportNodes.pdf