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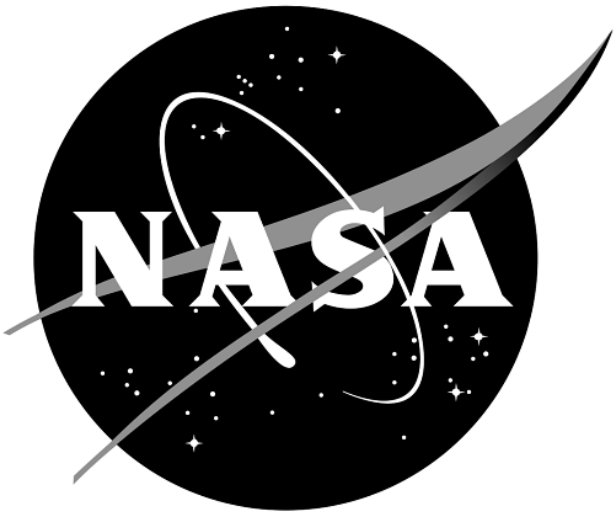
Plan Document

NASA Planetary Data System

PDS4 System

Build 4b Node Test Document



Change Log

Revision	Date	Description	Author
Draft		Initial draft release.	
1	Sep 15, 2013	Initial release	Richard Chen, Emily Law
4a	Dec 05, 2013	Addressed PDS4ORR-RFA1 and incorporated its recommendations partly by folding the test plan into the test procedures document	Richard Chen, Emily Law
4b	Apr 08, 2014	Updated for Schema 1.2.0.1	Richard Chen

Contents

1 Introduction

For over fifteen years, the Planetary Data System (PDS) has been NASA's official data system for archiving and distribution of data from planetary exploration missions. It has been a leader in defining data standards, working with missions and instrument teams, and developing data system technologies. The PDS has been instrumental in changing the scientific culture by working with the planetary science community to publicly release and peer review the data it captures. It has also been used as a model by other science data systems interested in establishing distributed scientific networks organized by independent discipline nodes at facilities that are doing leading-edge scientific research.

While PDS has been a leader in developing and exploiting new technologies and ideas, an increasing workload and substantial increases in the volume of delivered data are now threatening the system's ability to accomplish its primary missions of both archiving planetary science data and distributing it to working scientists. PDS identified these challenges in its Roadmap published in 2006. In addition to these challenges, the ten year Roadmap outlined several goals including improving the PDS data standards, increasing user services by leveraging newer technologies and technical standards, and re-architecting PDS to ensure efficient operations of the system while supporting the increasing demands on PDS by both the data providers and end users.

In response to these challenges and goals, PDS has developed a plan for the next generation. The vision, as defined by the PDS Management Council at its April 2008 meeting, includes:

- Simplified, but rigorous, archiving standards that are consistent, easy to learn, and easy to use
- Adaptable tools for designing archives, preparing data, and delivering the results efficiently to PDS
- On-line services allowing users to access and transform data quickly from anywhere in the system
- A highly reliable, scalable computing infrastructure that protects the integrity of data, links the nodes into an integrated data system, and provides the best service to both data providers and users

PDS previously maintained two separate documents:

- the Integration and Test Plan
- the Test Procedures and Report

Because the latter document grew to encompass most of the former, this document merges the two.

1.1 Purpose

This Test Document, together with the PDS4 System Build 4b Test Document (http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=194), describes the plan for verification and validation of Build 4b of the PDS4 system and standards. This document 1) defines specific tests to be performed by the PDS Discipline Nodes that demonstrate the PDS4 Build 4b system deployed at the Nodes by EN, and 2) reports results of the tests to verify that the PDS4 system deployed for Build 4b is free of critical defects. The integration and test activities described herein consist of test cases that demonstrate compliance to requirements. The test scenarios verify and validate the system components and data products in an integrated manner. A test traceability matrix in Section 5 traces these scenarios to the new PDS4 system design requirements, which in turn can be traced to high-level PDS requirements..

1.2 Scope

For PDS4 Build 4b, the following software will be deployed at the Discipline Nodes:

- Ingest: Harvest 1.6.0
- Preparation: Core 1.5.0, Design (oXygen 14.1), Validate 1.5.0
- Registry 1.6.0

Detailed release description documents will facilitate and detail the deployment activities.

The scope of this build is to support data providers and Discipline Nodes in developing and distributing PDS4 data products both for new missions and data migration. Previous releases of PDS4 have been scoped to support the LADEE and MAVEN missions as early adopters as well as internal testing by PDS and the IPDA. Future, incremental releases will target data users as PDS4 data is available within the PDS.

This document focuses on PDS4 end-to-end processing, from registration of a Node's data bundle/product to its discovery and access via a Node search interface. Test resources will include DN staff to perform the test cases.

1.3 Document Revision

Revisions of this document will be held in the PDS Engineering Node website through the use of its document history functionality. Previous versions of this document can be accessed through the use of that tool.

1.4 Test Approach

The PDS4 build structure is organized such that the system can be tested and verified early on and to ensure that transition will be seamless. The builds will ensure there is a coordinated testing and deployment of functionality coupled with upgrades of the data standards.

Build 4b testing includes two sets of testing:

1. Generic Testing
2. Node-specific Testing

The EN Integration and Test team performed the first set of generic tests, posted at http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=194 as "System Test Documentation". Those tests cover all PDS4 tools and services.

The Nodes perform the second set of Node specific tests. The tests described here cover testing of specific tools and services required to support PDS4 data products validation, registration, and search by the Nodes.

1.5 Applicable Documents

1.5.1 Controlling Documents

[1] Planetary Data System Strategic Roadmap 2006 - 2016, February 2006.

[2] Planetary Data System Level 1, 2 and 3 Requirements, March 26, 2010.

1.5.2 Referenced Documents

[3] PDS4 Project Plan, July 2013.

[4] PDS4 Operations Concept, September 2013.

[4] System Architecture Specification, September 2013.

[5] General System Requirements, September 2013.

[6] Software Requirements and Design, 2013

[7] PDS4 Standards Documents, 2014

2 Executive Summary

The testing documented herein substantiates that all tested tools and services meet Build 4b requirements as specified in their Software Requirements and Design documents.

# of tests performed	# of tests passed	# of tests failed	# of high priority anomalies
4	4	0	0

Section 3.2 has one sequence of four tests that represent the most likely operating scenario for PDS4 products: creation, validation, ingestion, search. This sequence tested the software successfully.

Section 4 lists all issues raised from the tests in this document. There were none.

Section 5 shows the traceability of the test cases to the level 5 requirements (and level 4 if no level 5 requirement applies). Note that many requirements will not be tested by the test cases specified in this test document. Those testing are covered by test cases specified in the Build 4b Test Document, which is performed by the EN Integration and Test team.

3 Test Procedures

The following section defines the tests and their results. These tests will be run as necessary to re-test the system after software changes.

Section 3.2 below contains a sequence of tests that demonstrates how a bundle of products passes through the PDS4 software. The tests were performed using analogous MAVEN and LADEE data products

3.1 Setup

The tests in section 3.2 require the installation of the following PDS4 software:

- **Harvest**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.1.0/ingest/harvest
- **Validate**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.1.0/preparation/validate
- an **XML editor**, e.g. Oxygen. This can be skipped, though not recommended.
- an XML-friendly web **browser**, e.g. firefox

The tester might install and configure a registry if 1) no registry is available for testing, or 2) the tester wants more control over the registry, e.g. after a test step fails, the tester may wish to reset the registry. However, installation and configuration of that software and of the required Apache Tomcat server might be difficult. If so desired, install:

- **Registry**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.1.0/registry/registry-service
- **Registry UI**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.1.0/registry/registry-ui

Please follow the installation instructions carefully. For more help, the file NOTES.txt, included in PDS4test.build4b.zip (see SETUP below), details one tester's configuration experience, particularly regarding the registry.

In the tests in the rest of this document, replace

testDir	directory where input files are extracted
binDir	directory where the PDS4 software are installed
Harvest	If the registry is uncontrolled (a choice made during installation), do not replace. Else: harvest –u*username* –p*password* Also add "-k *keystorePassword*" depending on the registry configuration, especially if Harvest gives error "Keystore password must be specified"
http://localhost:8080	the URL of the registry
http://pdsbeta.jpl.nasa.gov	the URL of the search service working off the EN's registry

Note that the tests are written for Unix, but running on other platforms requires simple changes.

The tests require this:

Test Case ID	SETUP
Description	This is not a test. This sets up test data.
Test Steps	From http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=194, get the latest "Test Data (.zip)", then • mkdir *testDir* • cd *testDir* • unzip PDS4test.build4b.zip The ATMOS node provides this sample bundle, with context products: • In browser: http://atmos.nmsu.edu/pub/PDS4/Version_1.1.0.0 • Download "MET_bundle_1100.tar.gz" • tar xzf MET_bundle_1100.tar.gz • mv MET_bundle_1100 *testDir*/bundle_atm_met In case the ATMOS node deletes or negatively (with respect to the tests in this document), MET_bundle_1100.tar.gz is included in the .zip downloaded earlier. The Data Provider's Handbook provides sample products that utilize the types needed for LADEE and MAVEN. The PDS4 Example Products, originally at http://pds.nasa.gov/repository/pds4/examples/dph_examples_1200/dph_example_products.zip, have been modified for PDS schema 1.2.0.1 and have been included in the .zip above in directory bundle_en_dph/.

Many test sequences in this document assume a local registry, which may get corrupted during testing. The following step resets the registry:

Test Case ID	RESETREGISTRY
Description	This is not a test. This wipes the database clean. *dbDir* is the directory for the database, set during the initialization of Tomcat.
Test Steps	$CATALINA_HOME/bin/shutdown.sh rm $CATALINA_HOME/logs/* rm -f -r *dbDir*/registry cd *binDir*/registry-service java -Djava.ext.dirs=lib/ org.apache.derby.tools.ij connect 'jdbc:derby:registry;create=true;user=registry'; run 'conf/derby-registry-schema.ddl'; exit; mv registry *dbDir*/registry rm derby.log $CATALINA_HOME/bin/startup.sh # usually a pause is needed here cd *binDir*/registry-service/bin; ./registry-config
Test Results	startup.sh: Using CATALINA_BASE: /Library/apache-tomcat-7.0.30 Using CATALINA_HOME: /Library/apache-tomcat-7.0.30 Using CATALINA_TMPDIR: /Library/apache-tomcat-7.0.30/temp Using JRE_HOME: /Library/Java/Home Using CLASSPATH: :/PDS4tools/search-service/lib/saxon-9.jar:/Library/apache-tomcat-

7.0.30/bin/bootstrap.jar:/Library/apache-tomcat-7.0.30/bin/tomcat-juli.jar

registry-config:

```
* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> POST
/registry/configure?name=Core+Objects&description=This+configures+the+core+set+of+registry+object
s HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8y zlib/1.2.5
> Host: localhost:8080
> Accept: */*
> Content-type:application/xml
> Content-Length: 6201
> Expect: 100-continue
* Done waiting for 100-continue
< HTTP/1.1 100 Continue
< HTTP/1.1 201 Created
< Server: Apache-Coyote/1.1
< Location: http://localhost:8080/registry/packages/urn:uuid:74f091f9-ce27-46a1-9b07-0c77bdb18e85
< Content-Type: text/plain
< Transfer-Encoding: chunked
< Date: Wed, 09 Apr 2014 06:56:21 GMT
* Connection #0 to host localhost left intact
urn:uuid:74f091f9-ce27-46a1-9b07-0c77bdb18e85* Closing connection #0
* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> POST /registry/configure?name=PDS+Objects&description=This+configures+PDS+object+types
HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8y zlib/1.2.5
> Host: localhost:8080
> Accept: */*
> Content-type:application/xml
> Content-Length: 13793
> Expect: 100-continue
< HTTP/1.1 100 Continue
< HTTP/1.1 201 Created
< Server: Apache-Coyote/1.1
< Location: http://localhost:8080/registry/packages/urn:uuid:1a0bfe59-f785-4b01-8531-667a362ca7fb
< Content-Type: text/plain
< Transfer-Encoding: chunked
< Date: Wed, 09 Apr 2014 06:56:21 GMT
* Connection #0 to host localhost left intact
urn:uuid:1a0bfe59-f785-4b01-8531-667a362ca7fb* Closing connection #0
* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> POST
/registry/configure?name=Core+Associations&description=This+configures+the+core+set+of+associatio
ns HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8y zlib/1.2.5
> Host: localhost:8080
> Accept: */*
> Content-type:application/xml
> Content-Length: 544
* upload completely sent off: 544 out of 544 bytes
< HTTP/1.1 201 Created
< Server: Apache-Coyote/1.1
< Location: http://localhost:8080/registry/packages/urn:uuid:badcf361-9e0d-41d2-a50c-61d4941ee5a9
< Content-Type: text/plain
< Transfer-Encoding: chunked
< Date: Wed, 09 Apr 2014 06:56:21 GMT
* Connection #0 to host localhost left intact
urn:uuid:badcf361-9e0d-41d2-a50c-61d4941ee5a9* Closing connection #0
* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
```

	> POST /registry/configure?name=PDS+Associations&description=This+configures+PDS+association+types HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8y zlib/1.2.5 > Host: localhost:8080 > Accept: */* > Content-type:application/xml > Content-Length: 7876 > Expect: 100-continue < HTTP/1.1 100 Continue < HTTP/1.1 201 Created < Server: Apache-Coyote/1.1 < Location: http://localhost:8080/registry/packages/urn:uuid:5d699059-2573-467f-84aa-fe8602bc5c1d < Content-Type: text/plain < Transfer-Encoding: chunked < Date: Wed, 09 Apr 2014 06:56:21 GMT * Connection #0 to host localhost left intact urn:uuid:5d699059-2573-467f-84aa-fe8602bc5c1d* Closing connection #0

3.2 Testing of Bundle Processing

The NODESTEST sequence tests the PDS4 software's handling of products representative of LADEE's and MAVEN's products from creation to registration to retrieval. The two sets of data used for this testing, downloaded in the SETUP test above, are:

1. a PHX product bundle (Table_character) created by the ATMOS node as representative for LADEE , referred to as the PHX bundle from here on.
2. a MAVEN and LADEE analogous product bundle (Table_character, Table_Binary, Array_1D and Array_2D etc), created by EN, referred to as the EN bundle from here on.

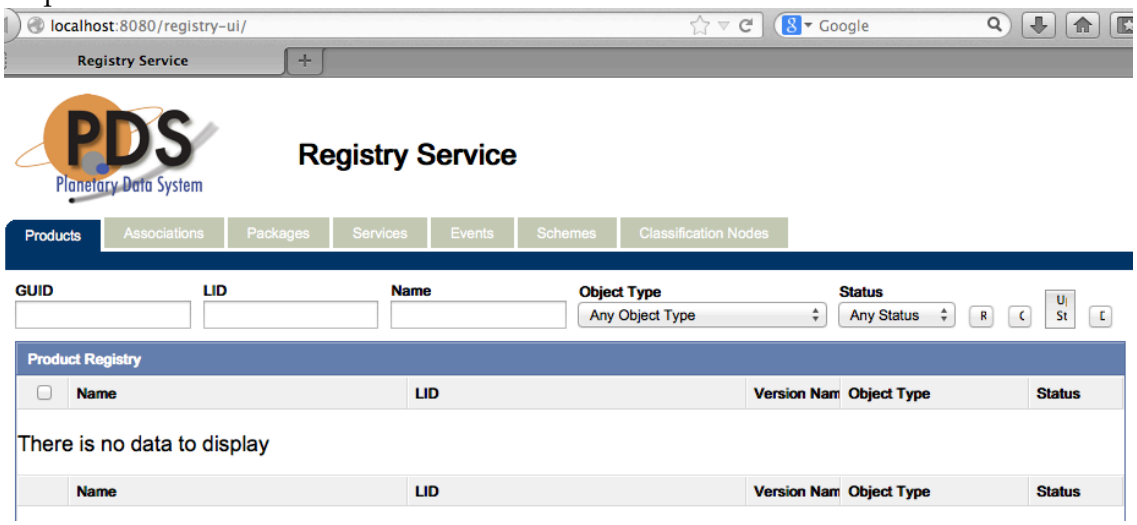
Test Case ID	NODESTEST.1
Description	Use a design tool to create PDS4 labels for products, and associated context (including bundle, collection, investigation archive webpage, investigations, resources) based on PDS's schema.
Requirements	PASS L5.PRP.DE.1: The tool shall initiate a design session as follows... PASS L5.PRP.DE.2: The tool shall accept the following as input for specifying a schema file... PASS L5.PRP.DE.3: The tool shall facilitate modification of a schema file as follows... PASS L5.PRP.DE.4: The tool shall provide standard editing features as follows... PASS L5.PRP.DE.5: The tool shall indicate when a schema is not valid. PASS L5.PRP.DE.6: The tool shall generate an XML instance file from a schema. PASS L5.PRP.DE.7: The tool shall export the schema for use outside the tool.
Success Criteria	Design tool produces a syntactically valid PDS Product Label else indicates where the label is invalid.
Test Steps	In general, consult Appendix D of the Data Providers' Handbook (DPH), Version 1.0.0
Test Results	Creation of one PDS4 label per product and delivery to EN test staff.
Comments	Results met test successful criteria
Date of Testing	2014.04.09
Test Personnel	Richard Chen

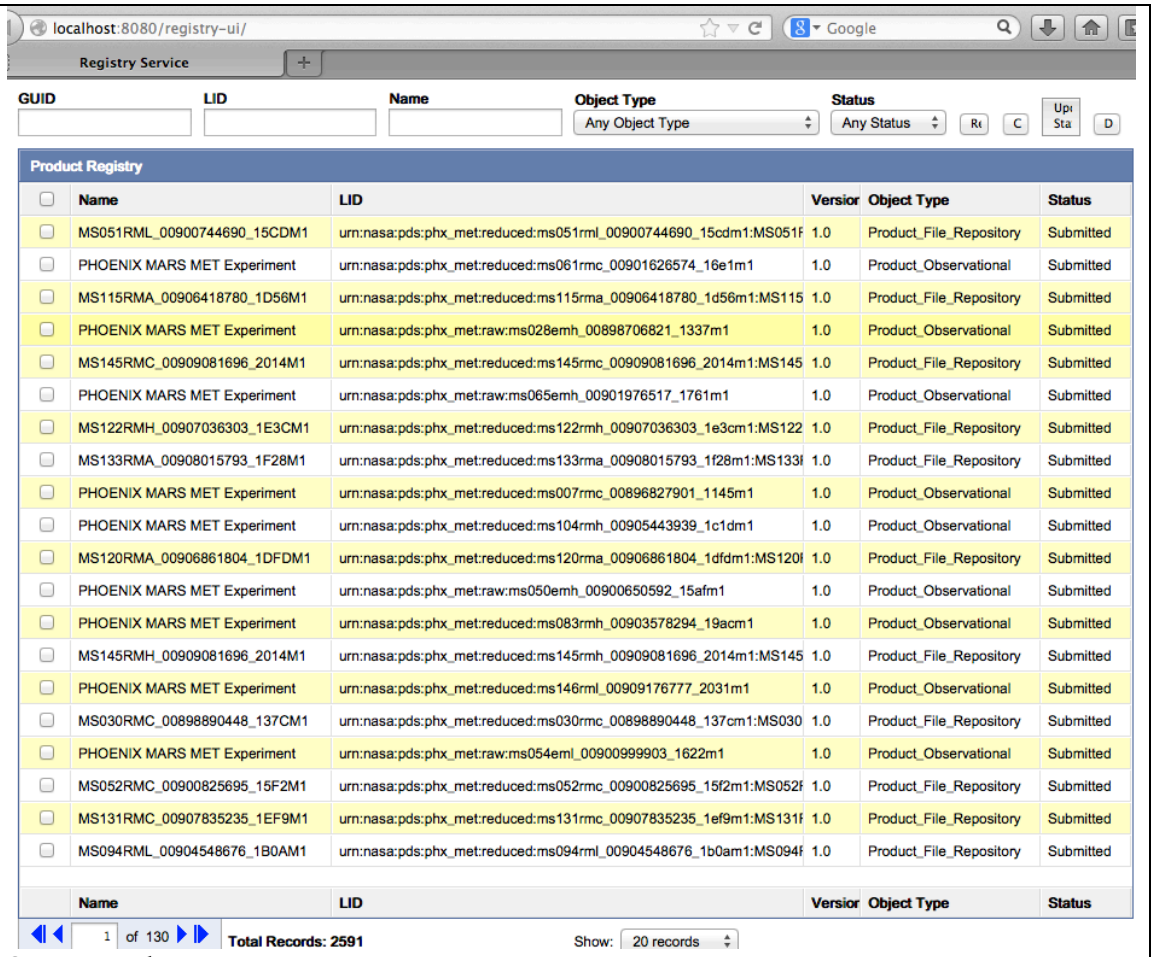
Test Case ID	NODESTEST.2
Description	Validate PDS4 product labels generated in NODESTEST.1 using the PDS4 Validate Tool.

Requirements	PASS L5.PRP.VA.1: The tool shall accept the following as input for specifying the product(s) to be validated… PASS L5.PRP.VA.2: The tool shall traverse a directory tree and validate products PASS L5.PRP.VA.3: The tool shall validate aggregate products and all products referenced by such products. PASS L5.PRP.VA.5: The tool shall verify that a product label is well-formed XML. PASS L5.PRP.VA.6: The tool shall verify that a product label conforms to its associated schema file(s). PASS L5.PRP.VA.7: The tool shall accept the following as input for specifying the associated schema file(s)… PASS L5.PRP.VA.9: The tool shall indicate the schema(s) utilized during validation.
Success Criteria	Validation tool validates a file or all eligible products in a directory tree, indicates the schemas utilized during the validation, and ensures that a product label is well formed XML and conforms to its schemas. Also validate for content as well as syntax.
Test Steps	In general: • validate *directoryOrFile* –e "*.xml" To test the PHX bundle (see step SETUP above) 1. cd *testDir* 2. curl http://pds.nasa.gov/pds4/schema/released/pds/v1/PDS4_PDS_1100.xsd > PDS4_PDS_1100.xsd 3. curl http://pds.nasa.gov/pds4/schema/released/pds/v1/PDS4_PDS_1100.sch > PDS4_PDS_1100.sch 4. validate bundle_atm_met -x PDS4_PDS_1100.xsd -S PDS4_PDS_1100.sch -x bundle_atm_met/xml_schema/PHXMD_1100.xsd -e "*.xml" > v.out 5. grep -v PASS v.out | uniq To test the EN bundle (see step SETUP above) 6. validate -e "*.xml" -t bundle_en_dph -x PDS4_PDS_1201.xsd bundle_en_dph/xml_schema/dph_example_dict_1200.xsd bundle_en_dph/product_array_3d_image/PDS4_SP_1001.xsd -S PDS4_PDS_1201.sch bundle_en_dph/product_array_3d_image/PDS4_SP_1001.sch > v.out 7. grep -v PASS v.out | uniq
Test Results	Step 4: v.out has 1734 lines, mostly "PASS: file:…" followed by a blank line. Step 5: PDS Validate Tool Report Configuration: Version 1.5.0 Date 2014-04-09T06:52:52Z Parameters: Targets [file:*testDir*/bundle_atm_met/] User Specified Schemas [PDS4_PDS_1100.xsd, bundle_atm_met/xml_schema/PHXMD_1100.xsd] User Specified Schematrons [PDS4_PDS_1100.sch] Severity Level WARNING Recurse Directories true File Filters Used [*.xml] Validation Details: Summary: 856 of 856 file(s) processed, 0 skipped 856 of 856 file(s) passed validation End of Report Step 7: PDS Validate Tool Report Configuration: Version 1.5.0 Date 2014-04-09T06:40:19Z Parameters: Targets [file: *testDir*/bundle_en_dph/] User Specified Schemas [PDS4_PDS_1201.xsd, bundle_en_dph/xml_schema/dph_example_dict_1200.xsd, bundle_en_dph/product_array_3d_image/PDS4_SP_1001.xsd] User Specified Schematrons [PDS4_PDS_1201.sch, bundle_en_dph/product_array_3d_image/PDS4_SP_1001.sch] Severity Level WARNING Recurse Directories true

	File Filters Used [*.xml] Validation Details: Summary: 184 of 184 file(s) processed, 0 skipped 184 of 184 file(s) passed validation End of Report
Comments	Results met test successful criteria.
Date of Testing	2014.04.08
Test Personnel	Richard Chen

Test Case ID	NODESTEST.3
Description	Use Harvest Tool to register PDS4 product labels, bundles, and collections generated in NODESTEST.1. Context products will be registered by EN.
Requirements	PASS L5.HVT.1: The tool shall accept a configuration file specifying policy for tool behavior. PASS L5.HVT.2: The tool shall provide a command-line interface for execution. PASS L5.HVT.4: The tool shall recursively traverse the specified directory or directories… PASS L5.HVT.5: The tool shall determine candidate products for registration through a combination of the following… PASS L5.HVT.6: The tool shall capture metadata for a candidate product specified by the product type. PASS L5.HVT.7: The tool shall submit the associated metadata for a candidate product to the [Registry]. PASS L5.HVT.8: The tool shall track each product registration. PASS L5.REG.1: The service shall accept artifact registrations. PASS L5.REG.2: The service shall provide a means for relating artifact registrations. PASS L5.REG.4: The service shall accept metadata for a registered artifact in a defined format. PASS L5.REG.6: The service shall assign a global unique identifier to a registered artifact. PASS L5.REG.8: The service shall store metadata for a registered artifact in an underlying metadata store.
Success Criteria	Harvest tool, based on criteria given in a user-edited configuration file, executed from the command line, discovers all matching artifacts and for each submits metadata to the Registry service. Tools to view the registry show the metadata of the matching artifacts, with appropriate metadata, including the guid, which is assigned by the Registry. Tools to view the registry show the associations.
Test Steps	In general: • In browser, http://localhost:8080/registry-ui/to see no registrations • harvest *directoryOrFile* -e "*.xml" -c *testDir*/harvest-policy-master.xml • In browser, http://localhost:8080/registry-ui/. You may enter one product's LID (wildcards accepted) to verify the registration and hit "Refresh" To test the PHX bundle: 1. Clean database as described in RESETREGISTRY 2. cd *testDir* 3. In browser, http://localhost:8080/registry-ui/to see no registrations The MET bundle, downloaded in SETUP, lists LIDVIDs of context products that are not part of its bundle, which is reasonable. To avoid WARNINGSs from harvest 4. harvest *testDir*/patch_bundle_atm -e "*.xml" -c harvest-policy-master.xml 5. harvest *testDir*/bundle_atm_met -e "*.xml" -c harvest-policy-master.xml -l h.out 6. grep -v "SUCCESS:\ |INFO:" h.out 7. In browser, http://localhost:8080/registry-ui/ To test the EN products: 8. Clean database as described in RESETREGISTRY 9. cd *testDir* 10. In browser, http://localhost:8080/registry-ui/to see no registrations 11. harvest *testDir*/bundle_en_dph -e "*.xml" -c harvest-policy-master.xml -l h.out 12. grep -v "SUCCESS:\ |INFO:" h.out 13. In browser, http://localhost:8080/registry-ui/

Test Results	Step 3:  Step 5: h.out has 30876 lines, mostly "SUCCESS:…" or "INFO:…" Step 6: PDS Harvest Tool Log Version Version 1.6.0 Time Wed, Apr 09 2014 at 10:09:44 AM Target(s) [*testDir*/bundle_atm_met] File Inclusions [*.xml] Severity Level INFO Registry Location http://localhost:8080/registry Registry Package Name Harvest-Package_20140409100944 Registration Package GUID urn:uuid:b9e17a68-a650-443e-bf8b-42600ec1d077 Summary: 856 of 856 file(s) processed, 0 other file(s) skipped 0 error(s), 0 warning(s) 856 of 856 products registered. 1735 of 1735 ancillary products registered. Product Types Registered: 6 Product_Document 843 Product_Observational 1 Product_XML_Schema 1 Product_Bundle 5 Product_Collection 1735 Product_File_Repository 2590 of 2590 associations registered. End of Log Step 7:

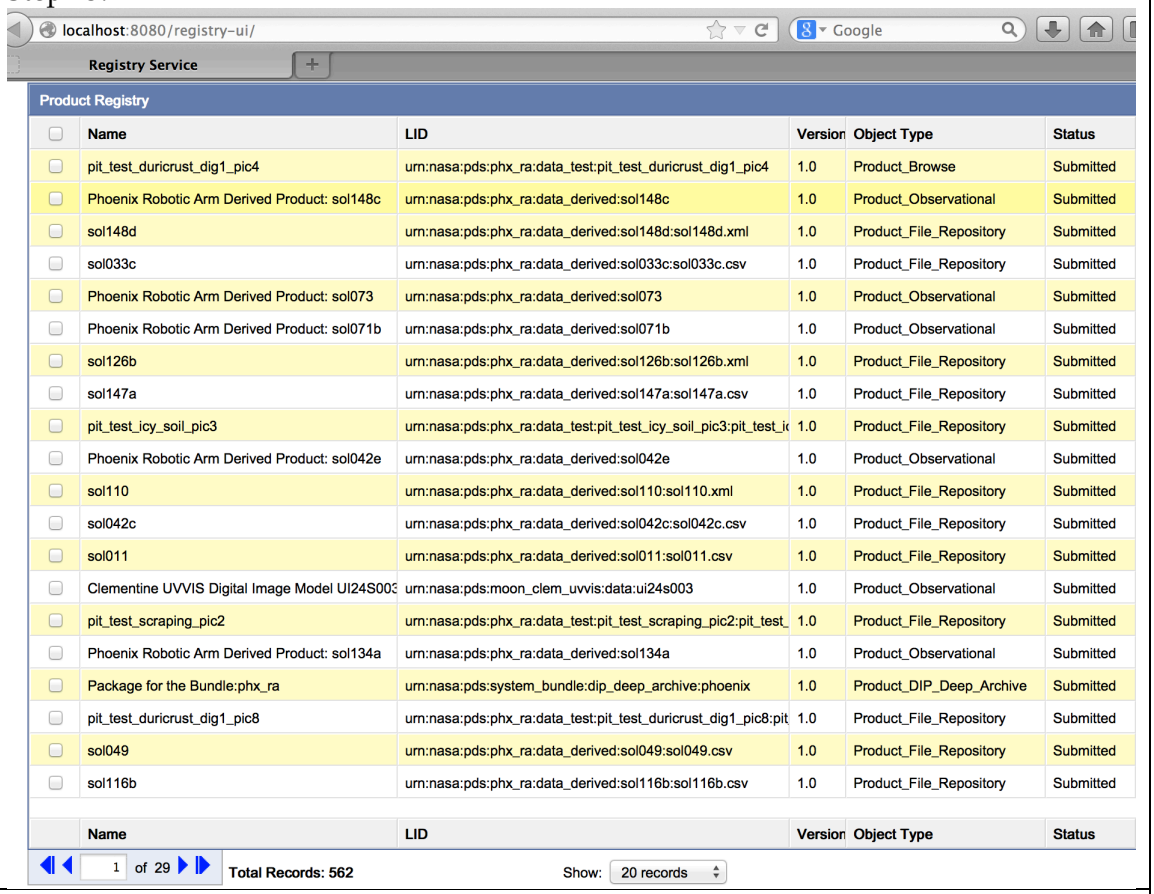


Step 10 is the same as step 3.

Step 11: h.out has 5272 lines, mostly "SUCCESS:…" or "INFO:…"

Step 12:

PDS Harvest Tool Log
Version Version 1.6.0
Time Wed, Apr 09 2014 at 12:45:42 AM
Target(s) [*testDir*/bundle_en_dph]
File Inclusions [*.xml]
Severity Level INFO
Registry Location http://localhost:8080/registry
Registry Package Name Harvest-Package_20140409004542
Registration Package GUID urn:uuid:9c269801-3321-4c77-ad9a-ac472ac7f858
SKIP:
[*testDir*/bundle_en_dph/product_DIP_deep_archive/PHX_20140106/phx_ra/context/mars_planet.xml] Not a primary member.
SKIP:
[*testDir*/bundle_en_dph/product_DIP_deep_archive/PHX_20140106/phx_ra/context/phoenix.xml] Not a primary member.
SKIP: [*testDir*/bundle_en_dph/product_DIP_deep_archive/PHX_20140106/phx_ra/context/phx.xml] Not a primary member.
SKIP:
[*testDir*/bundle_en_dph/product_DIP_deep_archive/PHX_20140106/phx_ra/context/ra_phx.xml] Not a primary member.
SKIP: [*testDir*/bundle_en_dph/ingest_dd/Ingest_LDD_telemetry.xml] No product_class element found.
Summary:
179 of 179 file(s) processed, 5 other file(s) skipped
0 error(s), 0 warning(s)
179 of 179 products registered.
383 of 383 ancillary products registered.
Product Types Registered:
5 Product_Document
38 Product_Browse
1 Product_DIP_Deep_Archive
128 Product_Observational

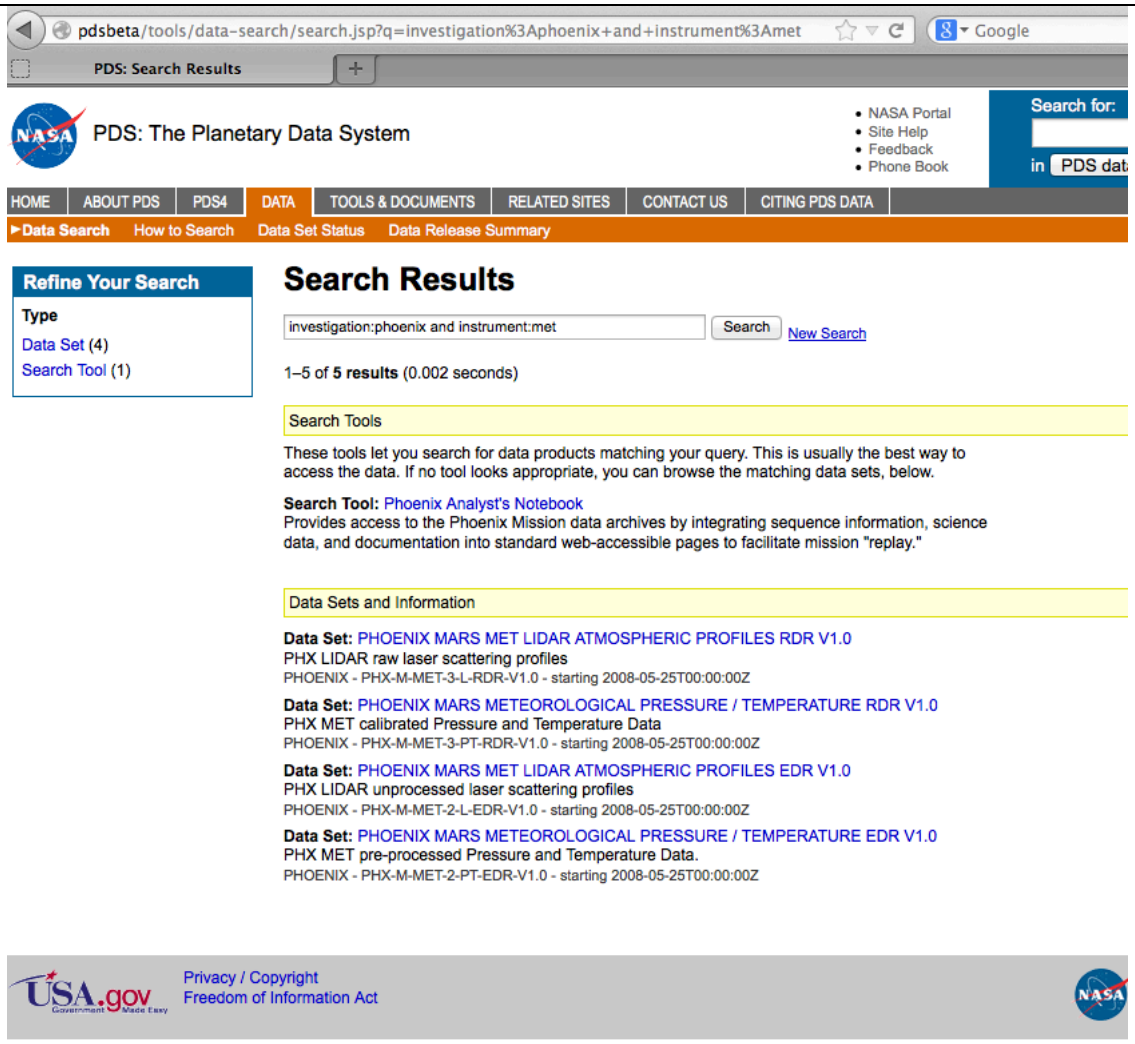
	2 Product_XML_Schema 1 Product_Bundle 4 Product_Collection 383 Product_File_Repository 545 of 545 associations registered. 44 of 44 associations registered. End of Log Step 13: 
Comments	Results met test successful criteria. Step 12: the first 4 skipped files indicate that the collections have secondary members not yet registered as primary members. That is correct, for those products (the target Mars, the mission phoenix, the instrument host phx, the instrument phoenix/ra) would be primary elsewhere. The 5th skipped .xml file is a local data dictionary file, not a label for a product. Harvest skips it as it should. Therefore none are issues.
Date of Testing	2014.04.09
Test Personnel	Richard Chen

Upon completition of NODETEST.3 above, wait for EN to register context products (including investigation archive webpage), synchronize registries, and rebuild search indices before proceeding to next Node test step below.

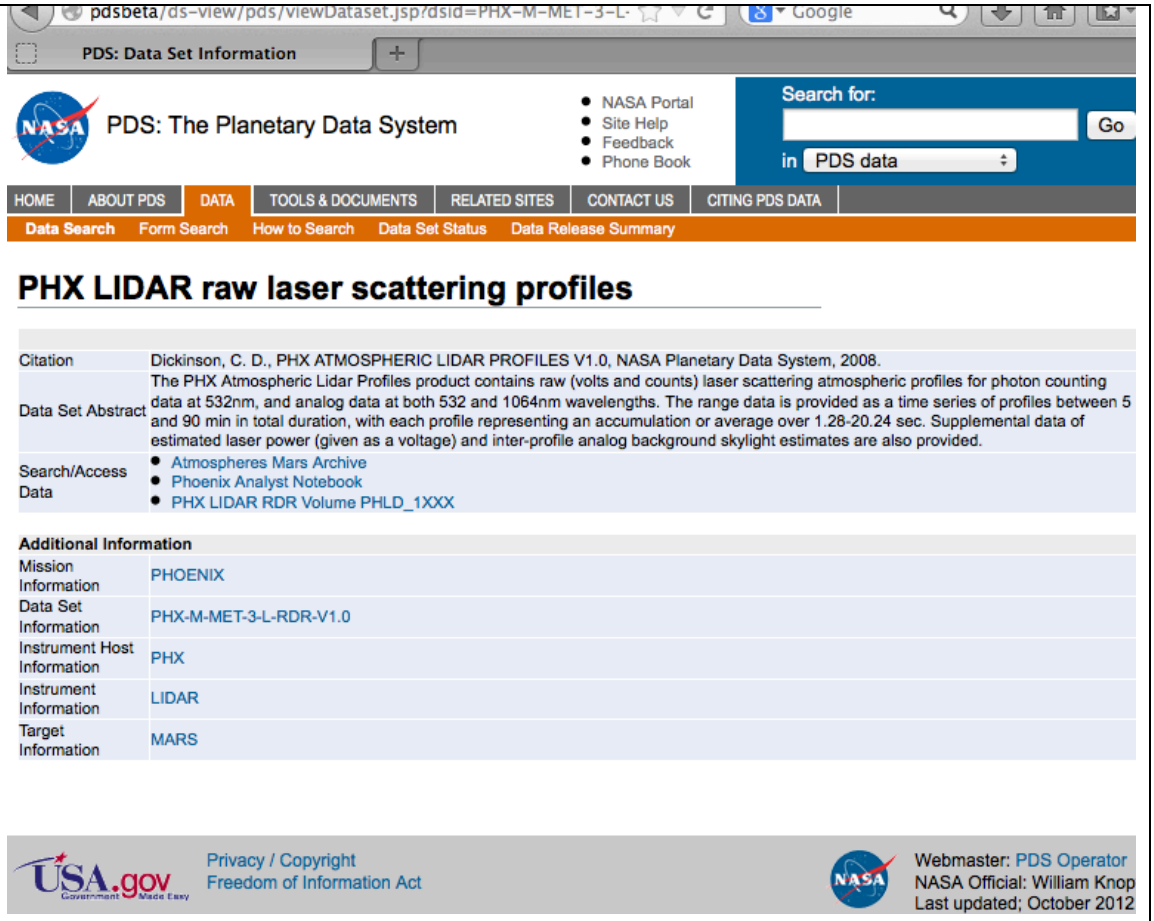
Separate testing of these EN activites is documented in the PDS4 Build 4b Test Document, available at http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=194 as “System Test Documentation (.pdf)”.

Test Case ID	NODESTEST.4

Description	Find registered products using PDS Home Page Data Search and download products from the Node.
Requirements	PASS L5.SCH.1: The service shall provide a user interface for entering of queries and display of search results… PASS L5.SCH.6: The service shall support searching by accepting criteria as a sequence of open text keywords. PASS L5.SCH.7: The service shall accept criteria as a series of values for constraints on specified indexes. PASS L5.SCH.8: The service shall support narrowing of additional index results based on specifications of terms and/or values on indexes. PASS L5.SCH.10: The service shall provide results to a search as a sequence of matching URIs to resources that contain search desiderata. PASS L5.SCH.11: The service shall annotate each URI of a result with metadata describing the URI.
Success Criteria	After configuration (e.g. regenerating search indices), Search returns the data harvested in the previous step.
Test Steps	In general: • In browser, http://pdsbeta.jpl.nasa.gov • Click "DATA" tab. • In the main text box, search for archive pages for investigations, other information (including instrument, instrument_host, target, investigation), and/or any bundles or collections registered in NODESTEST.3 • Click a search result to get more information. To test the PHX bundle: 1. same as above 2. same as above 3. In the main text box: investigation:phoenix and instrument:met 4. Click the first Data Set, PHOENIX MARS MET LIDAR ATMOSPHERIC PROFILES RDR V1.0
Test Results	Step 3:


pdsbeta/tools/data-search/search.jsp?q=investigation%3Aphoenix+and+instrument%3Amet
Google
PDS: Search Results
PDS: The Planetary Data System
NASA Portal
Site Help
Feedback
Phone Book
Search for:
in PDS dat
HOME
ABOUT PDS
PDS4
DATA
TOOLS & DOCUMENTS
RELATED SITES
CONTACT US
CITING PDS DATA
Data Search
How to Search
Data Set Status
Data Release Summary
Refine Your Search
Type
Data Set (4)
Search Tool (1)
Search Results
investigation:phoenix and instrument:met
Search
New Search
1–5 of 5 results (0.002 seconds)
Search Tools
These tools let you search for data products matching your query. This is usually the best way to access the data. If no tool looks appropriate, you can browse the matching data sets, below.
Search Tool: Phoenix Analyst's Notebook
Provides access to the Phoenix Mission data archives by integrating sequence information, science data, and documentation into standard web-accessible pages to facilitate mission "replay."
Data Sets and Information
Data Set: PHOENIX MARS MET LIDAR ATMOSPHERIC PROFILES RDR V1.0
PHX LIDAR raw laser scattering profiles
PHOENIX - PHX-M-MET-3-L-RDR-V1.0 - starting 2008-05-25T00:00:00Z
Data Set: PHOENIX MARS METEOROLOGICAL PRESSURE / TEMPERATURE RDR V1.0
PHX MET calibrated Pressure and Temperature Data
PHOENIX - PHX-M-MET-3-PT-RDR-V1.0 - starting 2008-05-25T00:00:00Z
Data Set: PHOENIX MARS MET LIDAR ATMOSPHERIC PROFILES EDR V1.0
PHX LIDAR unprocessed laser scattering profiles
PHOENIX - PHX-M-MET-2-L-EDR-V1.0 - starting 2008-05-25T00:00:00Z
Data Set: PHOENIX MARS METEOROLOGICAL PRESSURE / TEMPERATURE EDR V1.0
PHX MET pre-processed Pressure and Temperature Data.
PHOENIX - PHX-M-MET-2-PT-EDR-V1.0 - starting 2008-05-25T00:00:00Z
USA.gov
Privacy / Copyright
Freedom of Information Act

Step 4:



Comments	Results met test successful criteria
Date of Testing	2014.04.09
Test Personnel	Richard Chen

4 Anomalies

PDS uses the JIRA tracking system (http://www.atlassian.com/software/jira) to capture issues such as those found during testing. The full list of issues, including those raised by sources other than testing, is located at:

http://oodt.jpl.nasa.gov/jira/browse/PDS

4.1 Major Issues

None

4.2 Open anomalies

None

5 Requirements Traceability

This following lists the requirement ID, the system component of the requirement, the ID of the test case in Section 3 that tests the requirement, and the status of the test. Note that many requirements will not be tested by the test cases specified in this test document. Those testing are covered by test cases specified in the Build 4b Test Document, which is performed by the EN Integration and Test team.

Requirement #	System Component	Test case ID	Test Status
L5.GEN.1	General System	Applicable to System Test only	
L5.GEN.2	General System	Applicable to System Test only	
L5.GEN.3	General System	Applicable to System Test only	
L5.GEN.4	General System	Applicable to System Test only	
L5.GEN.5	General System	Applicable to System Test only	
L5.GEN.6	General System	Applicable to System Test only	
L5.GEN.7	General System	Applicable to System Test only	
L5.GEN.8	General System	Applicable to System Test only	
L5.GEN.9	General System	Applicable to System Test only	
L5.GEN.10	General System	Applicable to System Test only	
L5.GEN.11	General System	Applicable to System Test only	
L5.HVT.1	Harvest Tool	NODESTEST.3	pass
L5.HVT.2	Harvest Tool	NODESTEST.3	pass
L5.HVT.3	Harvest Tool	Applicable to System Test only	
L5.HVT.4	Harvest Tool	NODESTEST.3	pass
L5.HVT.5	Harvest Tool	NODESTEST.3	pass
L5.HVT.6	Harvest Tool	NODESTEST.3	pass
L5.HVT.7	Harvest Tool	NODESTEST.3	pass
L5.HVT.8	Harvest Tool	NODESTEST.3	pass
L5.PRP.DE.1	Prep: Design Tool	NODESTEST.1	pass
L5.PRP.DE.2	Prep: Design Tool	NODESTEST.1	pass
L5.PRP.DE.3	Prep: Design Tool	NODESTEST.1	pass
L5.PRP.DE.4	Prep: Design Tool	NODESTEST.1	pass
L5.PRP.DE.5	Prep: Design Tool	NODESTEST.1	pass
L5.PRP.DE.6	Prep: Design Tool	NODESTEST.1	pass
L5.PRP.DE.7	Prep: Design Tool	NODESTEST.1	pass
L5.PRP.VA.1	Prep: Validation Tool	NODESTEST.2	pass
L5.PRP.VA.2	Prep: Validation Tool	NODESTEST.2	pass
L5.PRP.VA.3	Prep: Validation Tool	NODESTEST.2	pass
L5.PRP.VA.4	Prep: Validation Tool	Applicable to System Test only	
L5.PRP.VA.5	Prep: Validation Tool	NODESTEST.2	pass
L5.PRP.VA.6	Prep: Validation Tool	NODESTEST.2	pass
L5.PRP.VA.7	Prep: Validation Tool	NODESTEST.2	pass
L5.PRP.VA.8	Prep: Validation Tool	Applicable to System Test only	
L5.PRP.VA.9	Prep: Validation Tool	NODESTEST.2	pass
L5.PRP.VA.10	Prep: Validation Tool	Applicable to System Test only	
L5.REG.1	Registry Service	NODESTEST.3	pass
L5.REG.2	Registry Service	NODESTEST.3	pass
L5.REG.3	Registry Service	Applicable to System Test only	

L5.REG.4	Registry Service	NODESTEST.3	pass
L5.REG.5	Registry Service	Applicable to System Test only	
L5.REG.6	Registry Service	NODESTEST.3	pass
L5.REG.7	Registry Service	Applicable to System Test only	
L5.REG.8	Registry Service	NODESTEST.3	pass
L5.REG.9	Registry Service	Applicable to System Test only	
L5.REG.10	Registry Service	Applicable to System Test only	
L5.REG.11	Registry Service	Applicable to System Test only	
L5.REG.12	Registry Service	Applicable to System Test only	
L5.REG.13	Registry Service	Applicable to System Test only	
L5.REG.14	Registry Service	Applicable to System Test only	
L5.REG.15	Registry Service	Applicable to System Test only	
L5.REG.16	Registry Service	Applicable to System Test only	
L5.RPT.1	Report Service	Applicable to System Test only	
L5.RPT.2	Report Service	Applicable to System Test only	
L5.RPT.3	Report Service	Applicable to System Test only	
L5.RPT.4	Report Service	Applicable to System Test only	
L5.RPT.5	Report Service	Applicable to System Test only	
L5.RPT.6	Report Service	Applicable to System Test only	
L5.RPT.7	Report Service	Applicable to System Test only	
L5.RPT.8	Report Service	Applicable to System Test only	
L5.RPT.9	Report Service	Applicable to System Test only	
L5.RPT.10	Report Service	Applicable to System Test only	
L5.RPT.11	Report Service	Applicable to System Test only	
L5.SCH.1	Search Service	NODESTEST.4	pass
L5.SCH.2	Search Service	Applicable to System Test only	
L5.SCH.3	Search Service	Applicable to System Test only	
L5.SCH.4	Search Service	Applicable to System Test only	
L5.SCH.5	Search Service	Applicable to System Test only	
L5.SCH.6	Search Service	NODESTEST.4	pass
L5.SCH.7	Search Service	NODESTEST.4	pass
L5.SCH.8	Search Service	NODESTEST.4	pass
L5.SCH.9	Search Service	Applicable to System Test only	
L5.SCH.10	Search Service	NODESTEST.4	pass
L5.SCH.11	Search Service	NODESTEST.4	pass
L5.SCH.12	Search Service	Applicable to System Test only	
L5.SCH.13	Search Service	Applicable to System Test only	
L5.SEC.1	Security Service	Applicable to System Test only	
L5.SEC.2	Security Service	Applicable to System Test only	
L5.SEC.3	Security Service	Applicable to System Test only	
L5.SEC.4	Security Service	Applicable to System Test only	
L5.SEC.5	Security Service	Applicable to System Test only	
L5.SEC.6	Security Service	Applicable to System Test only	
L5.SEC.7	Security Service	Applicable to System Test only	
L5.TRS.1	Transport Service	Applicable to System Test only	
L5.TRS.2	Transport Service	Applicable to System Test only	
L5.TRS.3	Transport Service	Applicable to System Test only	
L5.TRS.4	Transport Service	Applicable to System Test only	
L5.TRS.5	Transport Service	Applicable to System Test only	
L5.TRS.6	Transport Service	Applicable to System Test only	
4.2.4	Catalog Tool	Applicable to System Test only	

4.2.4	Catalog Tool	Applicable to System Test only	
4.2.4	Catalog Tool	Applicable to System Test only	
4.2.4	Harvest Tool	Applicable to System Test only	
L4.PRP.2	Prep: Generate Tool	Applicable to System Test only	
L4.PRP.4	Prep: Transform Tool	Applicable to System Test only	
1.3.3	PDS Requirements	Applicable to System Test only	

6 Test Data

Test data has been posted onto http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=194 as “PDS4 Example Products (.zip)”

Appendix A: Acronyms

CM – Configuration Management
DN – PDS Discipline or Data Node
GUI – Graphical User Interface
EN – PDS Engineering Node
I&T – Integration and Test
NASA – National Aeronautics and Space Administration
OS – Operating System
PDS – Planetary Data System
PDS3 – Version 3.8 of the PDS Data Standards
PDS4 – Version 4.0 of the PDS Data Standards
PDS4 – PDS4 Project
PDS MC – PDS Management Council
SDD – Software Design Document
SRD – Software Requirements Document