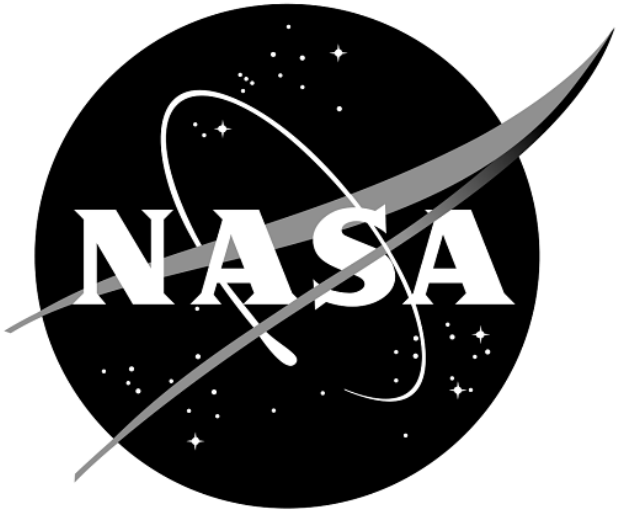
Plan Document

NASA Planetary Data System

PDS4 System

Build 4a Test Document



Change Log

Revision	Date	Description	Author
Draft		Initial draft release.	
1c	May 16, 2011	Modified many tests to work with build 1c of Harvest and Registry. Other minor revisions.	Richard Chen
1d	Oct 24, 2011	Updated for build 1d	Richard Chen
2a	Nov 11, 2011	Updated for build 2a	Richard Chen
2b	Feb 28, 2012	Updated for build 2b	Richard Chen
2b.1	Mar 7, 2012	Re-added HVT.T3, expanded SRCH.T5	Richard Chen
2c	Jul 17, 2012	Updated for build 2c	Richard Chen
3a	Oct 26, 2012	Added BNDL.T1 to .T4	Richard Chen
3b	Apr 09, 2013	Added AAFUNCTION.*	Richard Chen
3b.1	Aug 30, 2013	Incorporated JIRA resolutions	Richard Chen
3b.2	Sep 15, 2013	Cleaned up and removed not applicable test procedures	Richard Chen, Emily Law
4a	Dec. 05, 2013	Incorporated PDS4ORR-RFA1's recommendations by: • folding the test plan into this (test procedures and test results) document. • listing the requirements tested in each test case and their pass/fail status • adding version numbers in list of software components tested • indicating for each JIRA issue: the software build under which it was discovered, its severity, the test case demonstrating, and its description. • adding "pass", "fail", or "skip" to the requirements traceability matrix Added tests TPRT.1, SCMA.1 to test transport service and schema. Removed redundant tests AATESTME.*.	Richard Chen, Emily Law

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 1) defines specific tests that ensure that the new system and the new standards called "PDS4" comply with requirements and meet customers' needs, and 2) reports results of the tests to verify and validate that the PDS4 system deployed for Build 4a is free of critical defects. This document describes the integration and test activities and contains 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 below 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 4a, the following software will be deployed at the EN:

- Ingest: Harvest 1.5.0, Catalog 1.6.1
- Preparation: Core 1.4.1, Design (oXygen 14.1), Generate 0.6.0, Transform 0.2.1, Validate 1.4.1
- Registry 1.5.0
- Report (Sawmill 8.5)
- Search: Core 1.3.0, Service 1.3.0, Search-UI 1.3.0, Product-Search-UI 1.3.0
- Storage 0.5.0
- Security (OpenDS 2.2.0)
- Transport 1.1.0

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.

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 to ensure seamless transitions. The builds will ensure there is a coordinated testing and deployment of functionality coupled with upgrades of the data standards.

Build 4a Integration testing is the execution and management of tests by the Engineering Node to ensure that the release of Build 4a meets the intended functionality. The process of verification testing includes the selection of verification items, integration, and regression testing. Any functionality that is added to the system is treated as a new verification item.

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, 2013

2 Executive Summary

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

# of tests performed	# of tests passed	# of tests failed	# of high priority anomalies
36	36	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. The last test case AAFUNCTION.4 added a new test of the service product-search-ui, which allows searching for observational products rather than only context products. This sequence produced one new request for improvement: the search results should unclutter the output if there are many resultant resource products (see the comments of Test Case AAFUNCTION.4).

Section 3.3 has one sequence of tests per software module. These tests cover level 4 and 5 requirements for completeness. The sequences:

- CTLG.* tested the updated catalog tool successfully. One new request was generated for improvement (see CTLG.3): the tool should not reregister skipped catalog objects such as person.cat.
- GEN.* tested general functionality successfully.
- HVT.* tested the Ingest/Harvest tool successfully. One previous request for improvement (see HVT.5) is still open, which requests that harvest check if secondary members of a bundle match primary members.
- PRG.* tested the Preparation/Generate tool successfully. Two previous requests for improvement (see PRG.1) are still open, which request that the tool handle carets in PDS3 labels and add more looping constructs.
- PRT.* tested the Preparation/Transform tool successfully.
- PRV.* tested the updated Preparation/Validation tool and found one new major anomaly: validate should correctly utilize labels' tag directory_path_name. This has since been fixed and retested successfully. One previous request for improvement (see PRV.1) remains open which requests that Validate try the schematron rules listed in the input files in case the default schematron rules do not match the file's version.
- REG.* tested the Registry successfully.
- RPT.* tested the Report service successfully.
- SCMA.* tested the PDS4 schema (currently v1.1.0.1) rather than software. However, these tests used the Validate tool and uncovered a request for improvement (see document testScma.docx, test case SCMA.REL1101N2), that Validate treat 'role="warning"' in a schematron rule differently than the default, 'role="error"'. This has since been implemented/resolved.
- SEC.1 tested the Security service successfully.
- SRCH.* tested the Search service: besides the addition of product-search-ui (tested in Section 3.2's AAFUNCTION.4), successfully. One existing request for improvement (see

SRCH.5) remains open and requests that the search results display PRIMARY_BODY_NAME for targets when not equal to N/A.
- TPRT.* tested the updated transport service successfully.

Section 4 lists all issues and their info: status, JIRA tracking number, severity, relevant test case, and description. Testing of Build 4a created 1 major anomaly and 3 requests for improvements. The major anomaly and one of the improvements have already been resolved and verified successfully. Overall, 7 issues remain open, all requests for improvment, no anomalies.

Section 5 shows the traceability of the test cases to the level 5 requirements (and level 4 if no level 5 requirement applies). The table in this section shows that 8 test cases, each uniquely covering 1 level 5 requirement, have been skipped because appropriate PDS4 software has not yet been implemented.

3 Test Procedures

The following section defines the tests and their results. All tests below have been run for build 4a (except those written for future builds) and will be run as necessary to re-test the system after software changes.

Section 3.2 below contains one sequence of tests that demonstrates how a bundle of products passes through the PDS4 software, especially the tools and services to support PDS4 data validation, registration, and search.

Section 3.3 contains tests that demonstrate the broader functionality of the PDS4 software.

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/4.0.0/ingest/harvest
- **Registry**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/registry
- **Search**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/search
- **Validate**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/preparation/validate
- an **XML editor**, e.g. Oxygen. This can be skipped, though not recommended.
- an XML-friendly web **browser**, e.g. firefox

The tests in Section 3.3 require the installation of the software above as well as:

- **Generate**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/preparation/generate
- **Catalog**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/ingest/catalog
- **Storage**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/storage
- **Transform**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/preparation/transform
- **Transport**, http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/transport
- **curl**, a command-line utility to access a URL, used here to manipulate a registry. The Registry Service Guide has more information. This is native to most versions of unix.

Please follow the installation instructions carefully. For more help, the file NOTES.txt, created during SETUP below, details one tester's configuration experience. Note that the tests are written for Unix, but running on other platforms requires simple changes.

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, 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"
curl	If the registry is uncontrolled, do not replace. Else: curl -u*username:password* –k
http://localhost:8080 or https://potato.jpl.nasa.gov	Use the URL of the registry

The tests in Sections 3.2 and 3.3 require this:

Test Case ID	SETUP
Description	This is not a test. This sets up test data.
Test Steps	Get the latest "Test Data (.zip)" from http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=188, then • mkdir *testDir* • cd *testDir* • unzip PDS4test.build4a.zip

The registry is the central service. It can reside locally or remotely, controlled or uncontrolled. If remote, it need not be installed. If local, testing is easier, but installation and configuration of it and of the required Apache Tomcat server can be difficult.

Many test sequences in this document assume a local, uncontrolled 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 and the search indices clean. *dbDir* is the directory for the database, set during the initialization of Tomcat.
Test Steps	$CATALINA_HOME/bin/shutdown.sh rm *$binDir*/search-service/../logs/* rm $CATALINA_HOME/logs/* rm -r *binDir*/search-service/pds/*data* rm *binDir*/search-service/pds/index/search-tools.hierarchy.xml rm -r *binDir*/search-service/pds/solr-docs/* rm -r *binDir*/search-service/pds/solr-docs_old/* 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

3.2 Testing of Bundle Processing

The AAFUNCTION sequence tests the PDS4 software's ability to process a bundle of products. All expected product types should be able to pass through the sequence.

Test Case ID	AAFUNCTION.1
Description	Create a PDS4 Product Label using a design tool 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 Append D of the Data Providers' Handbook (DPH), Version 0.3.10
Test Results	Creation of a label-template (xml) from the master-schema (xsd).
Comments	Results met success criteria
Date of Testing	2013.10.28
Test Personnel	Richard Chen

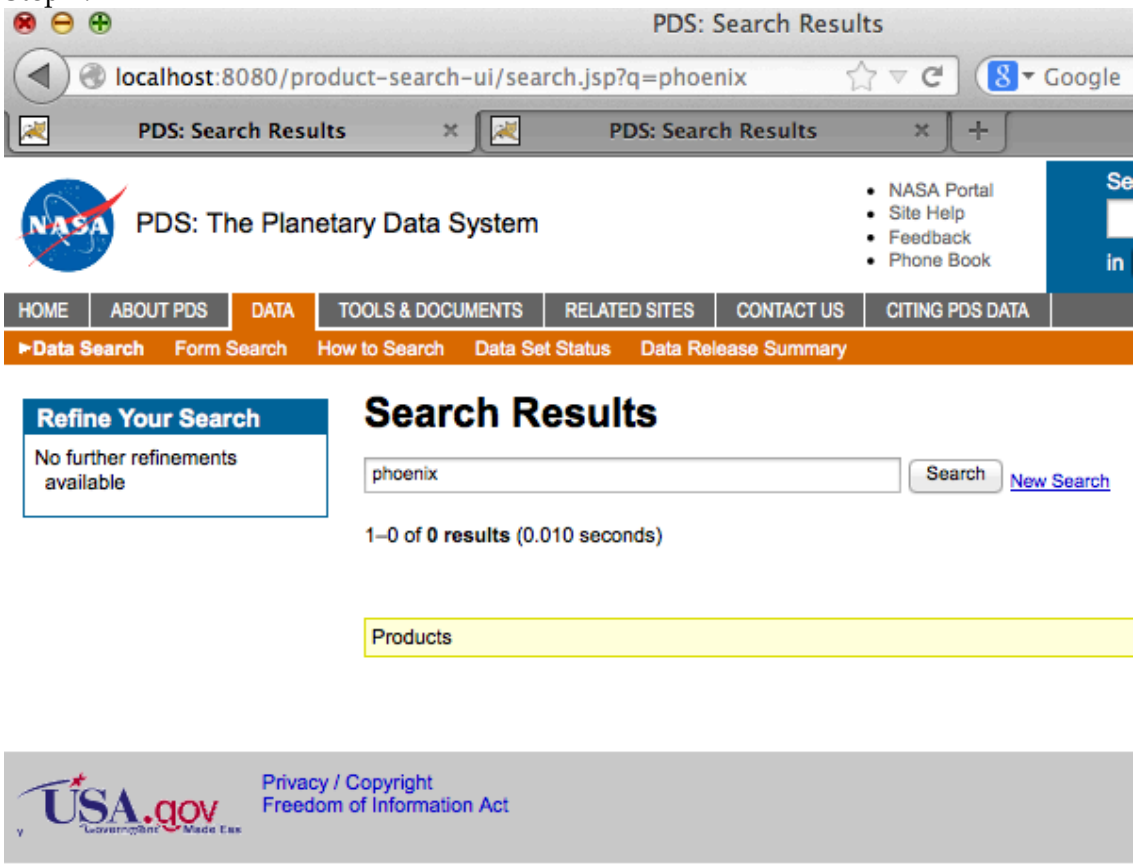
Test Case ID	AAFUNCTION.2
Description	Validate PDS4 label
Requirements	PASS L5.PRP.VA.1: The tool shall accept the following as input for specifying the product(s) to be validated… PASS L5.PRP.VA.2: The tool shall traverse a directory tree and validate products PASS L5.PRP.VA.3: The tool shall validate 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	1. cd *testDir* 2. validate -t bundle_geo_ra -x PDS4_PDS_1100.xsd -S PDS4_PDS_1100.sch -e "*.xml"
Test Results	PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-02T23:50:18Z Parameters: Targets [file: *testDir*/bundle_geo_ra/] User Specified Schemas [PDS4_PDS_1100.xsd] User Specified Schematrons [PDS4_PDS_1100.sch] Severity Level WARNING Recurse Directories true File Filters Used [*.xml] Validation Details: PASS: file:*testDir*/bundle_geo_ra/bundle_1.xml PASS: file:*testDir*/bundle_geo_ra/context/context_collection_1.xml PASS: file:*testDir*/bundle_geo_ra/context/mars_planet.xml PASS: file:*testDir*/bundle_geo_ra/context/phoenix.xml

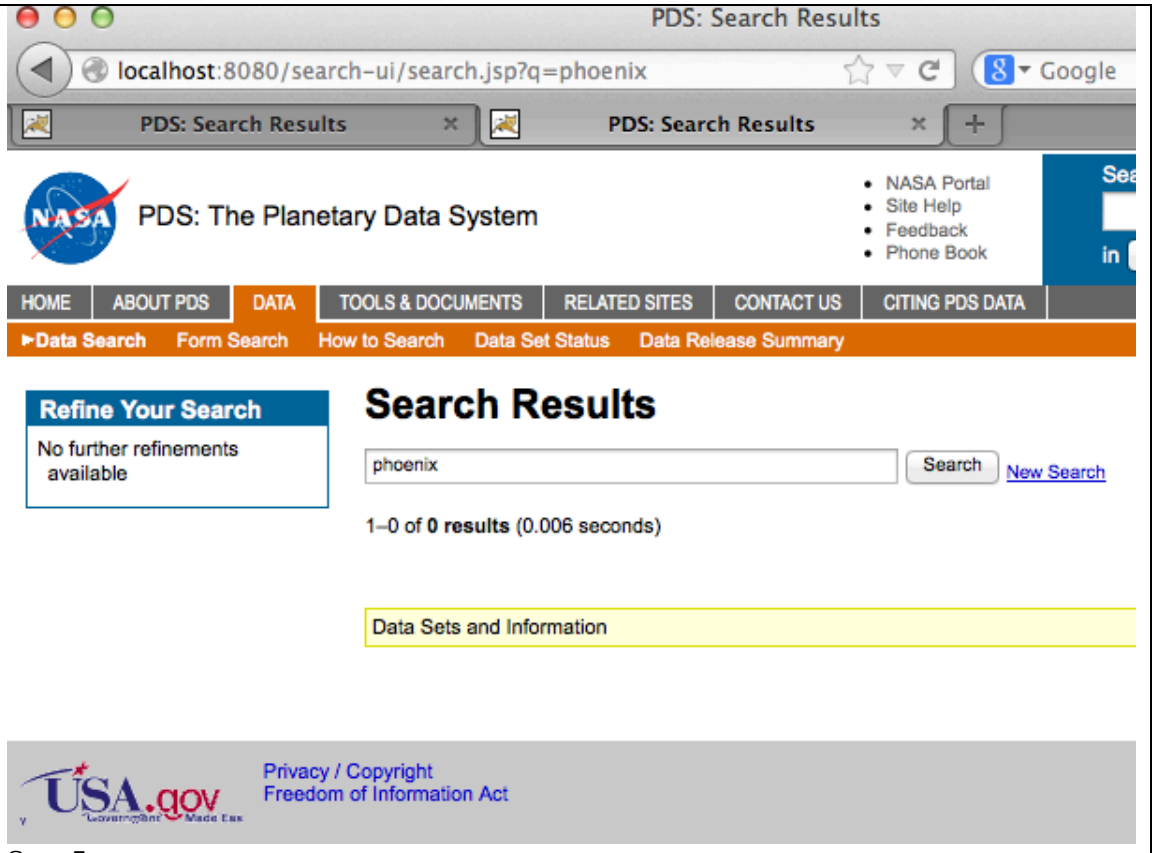
	PASS: file:*testDir*/bundle_geo_ra/context/phx.xml PASS: file:*testDir*/bundle_geo_ra/context/ra_phx.xml PASS: file:*testDir*/bundle_geo_ra/data_derived/data_derived_collection_1.xml PASS: file:*testDir*/bundle_geo_ra/data_derived/sol006.xml PASS: file:*testDir*/bundle_geo_ra/data_derived/sol007.xml [snip…] PASS: file:*testDir*/bundle_geo_ra/document/ra_instrument.xml PASS: file:*testDir*/bundle_geo_ra/document/readme.xml Summary: 171 of 171 file(s) processed, 0 skipped 171 of 171 file(s) passed validation End of Report
Comments	Results met success criteria
Date of Testing	2013.12.02
Test Personnel	Richard Chen

Test Case ID	AAFUNCTION.3
Description	Harvest PDS4 labels. Harvest provides a command-line interface, accepts a configuration file, determines candidates for registration, captures metadata, and submits metadata to the Registry Service. Registry accepts the artifacts, assigns global unique IDs to the products. Registry relates artifacts via (LID-based) association
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. PASS L5.SEC.1: The service shall authenticate a user given identifying credentials for that user.
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	1. cd *testDir* In the following commands, specify the absolute path, which must begin with harvest-policy-master.xml's policy/accessUrls/accessUrl/offset 2. harvest *testDir*/contextPDS4onlyPHX -c harvest-policy-master.xml -l h1.out -e "*.xml" 3. harvest *testDir*/bundle_geo_ra -c harvest-policy-master.xml -l h2.out -e "*.xml"
Test Results	Step 2: The output file is large, so filter with • grep -v "SUCCESS|INFO" h1.out | uniq PDS Harvest Tool Log Version Version 1.5.0 Time Sat, Nov 02 2013 at 12:07:27 AM Target(s) [*testDir*/contextPDS4onlyPHX] File Inclusions [*.xml] Registry Location http://localhost:8080/registry Registry Package Name Harvest-Package_20131102000727 Registration Package GUID urn:uuid:5b9ce127-fe21-47a6-93b8-a15bcc776114 Summary: 157 of 157 file(s) processed, 0 other file(s) skipped 0 error(s), 0 warning(s) 157 of 157 products registered. 163 of 163 ancillary products registered.

	Product Types Registered: 150 Product_Context 1 Product_Bundle 6 Product_Collection 163 Product_File_Repository 183 of 183 associations registered. End of Log Step 3: The output file is large, so filter with • grep -v "SUCCESS\ |INFO" h2.out | uniq PDS Harvest Tool Log Version Version 1.5.0 Time Sat, Nov 02 2013 at 12:22:03 AM Target(s) [*testDir*/bundle_geo_ra] File Inclusions [*.xml] Registry Location http://localhost:8080/registry Registry Package Name Harvest-Package_20131102002203 Registration Package GUID urn:uuid:c61ece3b-840b-49d2-9990-3854823bc7c5 SKIP: [*testDir*/bundle_geo_ra/context/mars_planet.xml] Not a primary member. SKIP: [*testDir*/bundle_geo_ra/context/phx.xml] Not a primary member. SKIP: [*testDir*/bundle_geo_ra/context/ra_phx.xml] Not a primary member. Summary: 168 of 168 file(s) processed, 3 other file(s) skipped 0 error(s), 0 warning(s) 168 of 168 products registered. 334 of 334 ancillary products registered. Product Types Registered: 4 Product_Document 38 Product_Browse 120 Product_Observational 1 Product_Context 1 Product_Bundle 4 Product_Collection 334 Product_File_Repository 496 of 496 associations registered. End of Log
Comments	Results met success criteria. In the product bundle, the 3 SKIPs are for files deemed secondary in their respective collections via their lidvids.
Date of Testing	2013.11.02
Test Personnel	Richard Chen

Test Case ID	AAFUNCTION.4
Description	Search for PDS4 data at the product level and the context level.
Requirements	PASS L5.SCH.1: The service shall provide a user interface for entering of queries and display of search results… PASS L5.SCH.5: The service shall provide the capability to retrieve metadata associated with registered artifacts for the purpose of generating search indexes. PASS L5.SCH.6: The service shall support searching by accepting criteria as a sequence of open text keywords. 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. PASS L5.SCH.12: The service shall support configuration on the kinds of indexes maintained on indexed data
Success Criteria	After configuration (e.g. regenerating search indices), Search returns the data harvested in the previous step.
Test Steps	Build the search index 1. In a browser, http://localhost:8080/product-search-ui 2. Beneath "Data Search" in the middle of the page, type "phoenix" 3. In a browser, http://localhost:8080/search-ui 4. Beneath "Data Search" in the middle of the page, type "phoenix"

	5. search-core -H *binDir*/search-service/pds -p *binDir*/search-core/conf/pds/pds4/core.properties 6. Repeat step 2 7. Repeat step 4
Test Results	Step 2:  Step 4:

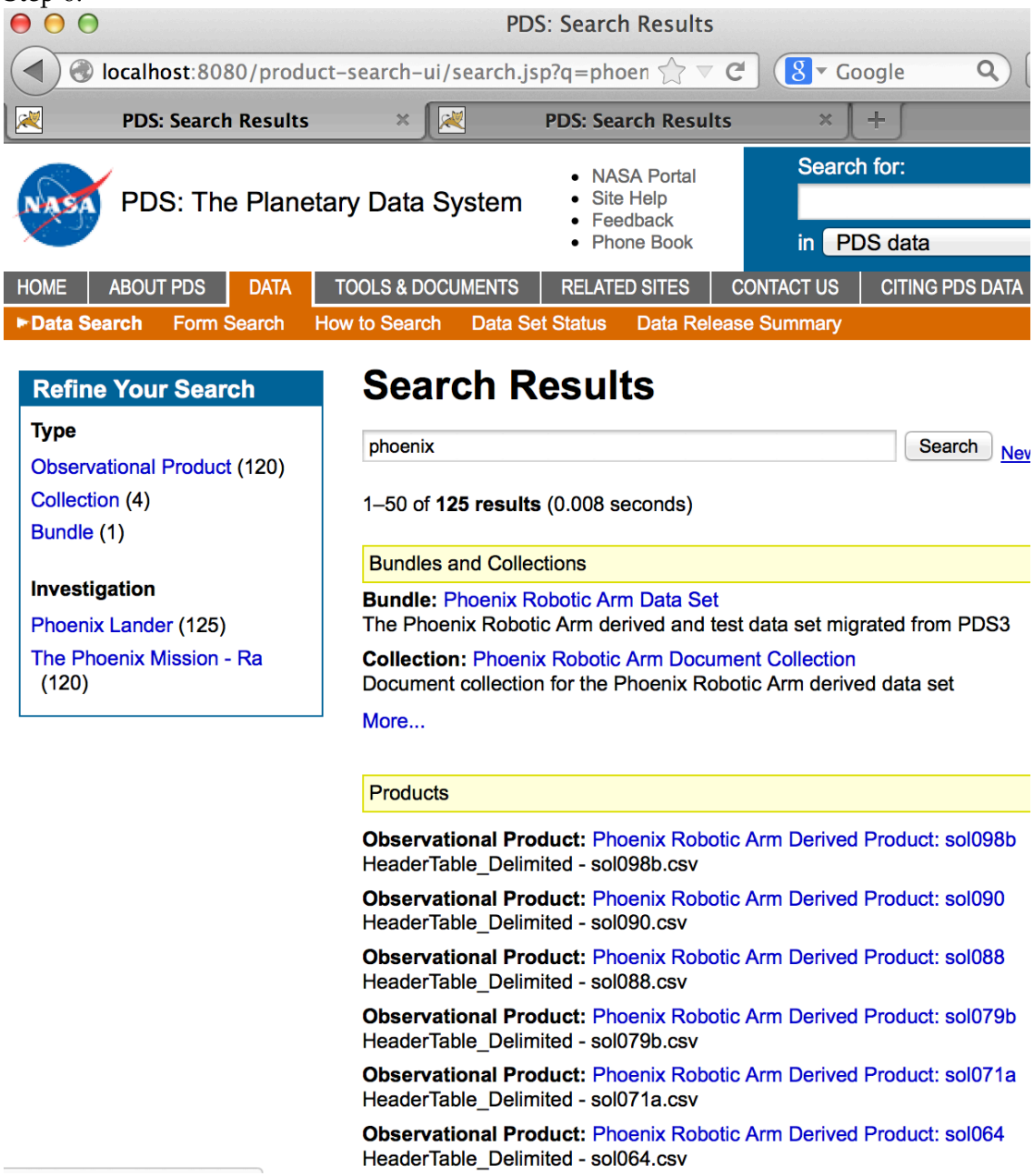


Step 5:

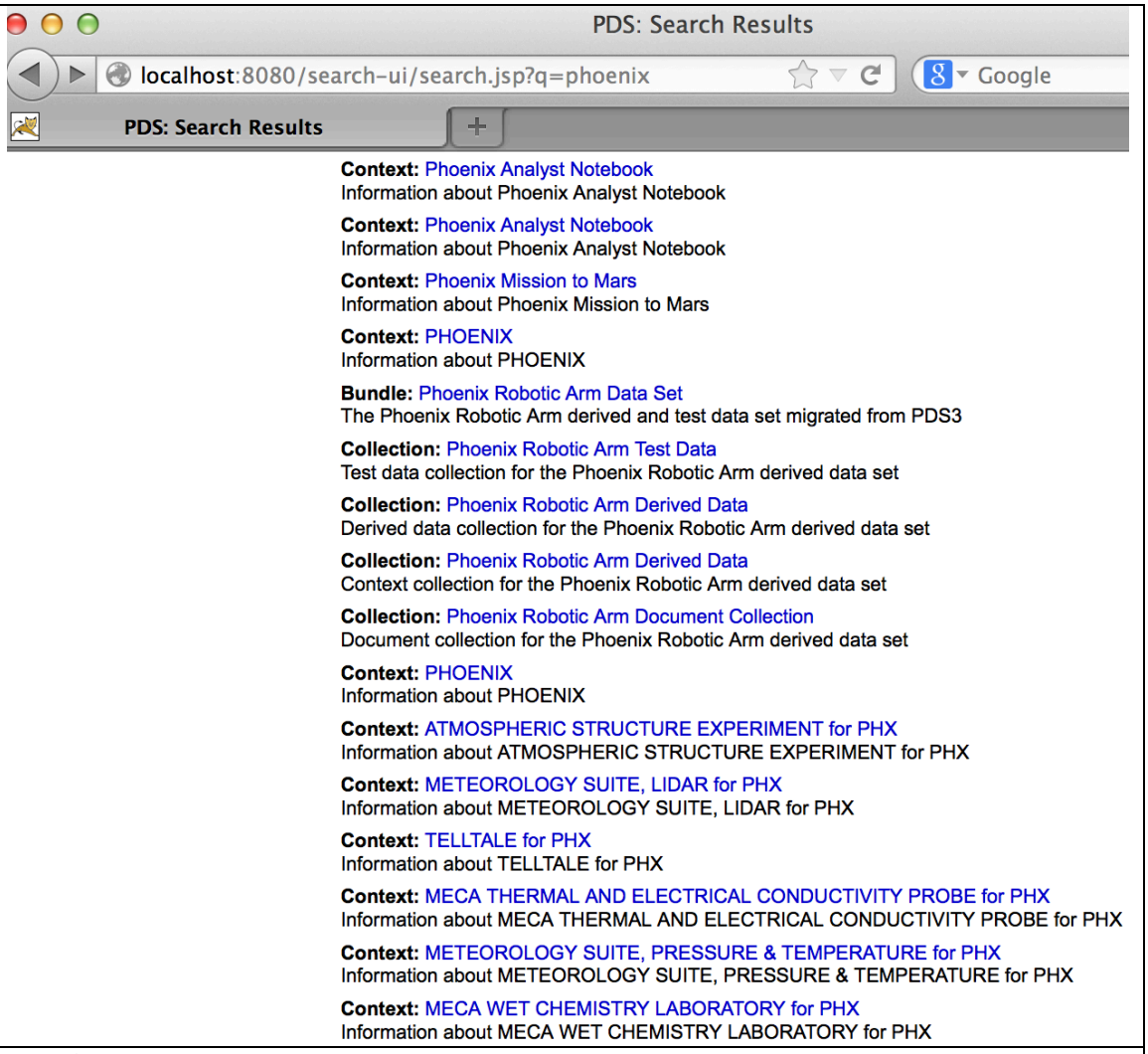
```
Processing config: bundle.xml
Processing config: bundle.xml
Processing config: collection.xml
Processing config: context.xml
Processing config: observational.xml
PDS Search Core Run Log
Version                 Version 1.3.0
Time                    Sat, Nov 02 2013 at 12:40:48 AM
Severity Level          INFO
Search Home             /PDS4tools/search-service/pds
Search Service URL      http://localhost:8080/search-service
Search Core Properties  /PDS4tools/search-core/conf/pds/pds4/core.properties
SUCCESS:  Completed extraction:  bundle.xml
SUCCESS:  Completed extraction:  collection.xml
SUCCESS:  Completed extraction:  context.xml
SUCCESS:  Completed extraction:  observational.xml
SUCCESS:  Completed extracting data from data source.
INFO:  Running Solr Indexer to create new solr documents for indexing ...
SUCCESS:  Completed transforming data into Solr Lucene index
INFO:  Running Solr Post to Post Data To Search Service ...
SUCCESS:  Completed posting data to the Search Service
Summary:
================================================
The Numbers:
-- Number of Warnings: 0
-- Number of Errors: 0
-- Bad Registries: []
-- Number of Missing Associations: 0
-- Association Cache Hits: 0
-- Number of products: 283
================================================
Processing Time:
-- bundle.xml: 0 h, 0 m, 4 s
-- context.xml: 0 h, 0 m, 3 s
-- collection.xml: 0 h, 0 m, 1 s
-- observational.xml: 0 h, 1 m, 22 s
================================================
Total Processing Time: 0 h, 1 m, 32 s
```

End of Log

Step 6:



Step 7:

	
Comments	Results met success criteria. https://oodt.jpl.nasa.gov/jira/browse/PDS-220, created during testing of build 4a, requests an improvement: do not return multiple, cluttering "Context: Phoenix Analyst Notebook".
Date of Testing	2013.11.02
Test Personnel	Richard Chen

3.3 Testing for Complete Coverage of PDS4 Level 5 Requirements

The following test cases test all Build 4a functions, including those not covered above. These tests ensure complete verification and validation of Build 4a level 5 requirements.

Test Case ID	CTLG.1
Description	Compare PDS3 data against other PDS3 data, both file to file and directory to directory
Requirements	PASS 4.2.4: PDS will provide a mechanism to upgrade products or data sets which do not meet usability requirements (e.g., data sets from old missions)
Success Criteria	Tool generates report with differences.

Test Steps	1. cd *testDir* 2. catalog -mcompare testCatalog/CORPWS_0164 testCatalog/CORPWS_0180 Compare two files with one difference. Note: catalog used to crash with the –c option 3. catalog -c testCatalog/config
Test Results	Step 2: PDS Catalog Ingest Tool Report Version Version 1.6.1 Date Wed, Dec 04 2013 at 01:59:43 PM Parameters: Mode compare Target(s) Source = file: *testDir*/testCatalog/CORPWS_0164/ Target = file: *testDir*/testCatalog/CORPWS_0180/ Directory Recursion true Severity Level WARNING Compare Details: SAME: file: *testDir*/testCatalog/CORPWS_0180/INSTHOST.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/KEYDS.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/LRFULLDS.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/MISSION.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/PERSON.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/PROJREF.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/RAWDS.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/REF.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/RPWSINST.CAT DIFFERENT: file: *testDir*/testCatalog/CORPWS_0180/VOLDESC.CAT line 23: Element "DATA_SET_ID" has different value than source. Source: line 23 of file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT 23c23 < CO-V/E/J/S/SS-RPWS-4-SUMM-KEY60S-V1.0 --- > {CO-V/E/J/S/SS-RPWS-4-SUMM-KEY60S-V1.0, CO-V/E/J/S/SS-RPWS-2-REFDR-ALL-V1.0, CO-V/E/J/S/SS-RPWS-3-RDR-LRFULL-V1.0, CO-V/E/J/S/SS-RPWS-2-REFDR-WBRFULL-V1.0, CO-V/E/J/S/SS-RPWS-2-REFDR-WFRFULL-V1.0} line 16: Element "DESCRIPTION" has different value than source. Source: line 16 of file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT 19c19 < (SCET) dates 2011-05-27 (147) through 2011-06-12 (163). --- > (SCET) dates 2012-11-26 (331) through 2012-12-23 (358). line 9: Element "VOLUME_NAME" has different value than source. Source: line 9 of file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT 10c10 < VOLUME 164: CASSINI RADIO AND PLASMA WAVE STANDARD PRODUCTS --- > VOLUME 180: CASSINI RADIO AND PLASMA WAVE STANDARD PRODUCTS line 15: Element "PUBLICATION_DATE" has different value than source. Source: line 15 of file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT 15c15 < 2011-12-22 --- > 2013-03-28 line 11: Element "VOLUME_ID" has different value than source. Source: line 11 of file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT 11c11 < CORPWS_0164 --- > CORPWS_0180 line 74: Element "DATA_SET_ID" has different value than source. Source: line 70 of file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT 70c74 < CO-V/E/J/S/SS-RPWS-4-SUMM-KEY60S-V1.0 --- > {CO-V/E/J/S/SS-RPWS-4-SUMM-KEY60S-V1.0, CO-V/E/J/S/SS-RPWS-2-REFDR-ALL-V1.0, CO-V/E/J/S/SS-RPWS-3-RDR-LRFULL-V1.0, CO-V/E/J/S/SS-RPWS-2-REFDR-WBRFULL-V1.0, CO-V/E/J/S/SS-RPWS-2-REFDR-WFRFULL-V1.0} line 80: Pointer "DATA_SET_CATALOG" has different value than source. Source: line 71 of file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT 71c80 < KEYDS.CAT

	---- > {KEYDS.CAT, RAWDS.CAT, LRFULLDS.CAT, WBFULLDS.CAT, WFFULLDS.CAT} line 86: Pointer "REFERENCE_CATALOG" has different value than source. Source: line 72 of file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT 72c86 < {REF.CAT} ---- > {REF.CAT, PROJREF.CAT} SAME: file: *testDir*/testCatalog/CORPWS_0180/WBFULLDS.CAT SAME: file: *testDir*/testCatalog/CORPWS_0180/WFFULLDS.CAT Summary: 12 of 12 validated, 0 skipped 11 of 12 passed End of Report Step 3: PDS Catalog Ingest Tool Report Configuration: Version Version 1.6.1 Date Wed, Dec 04 2013 at 02:18:05 PM Parameters: Mode compare Target(s) Source = file: *testDir*/testCatalog/CORPWS_0164/RAWDS.CAT Target = file: *testDir*/testCatalog/CORPWSrawX.CAT Directory Recursion true Severity Level WARNING Compare Details: DIFFERENT: file: *testDir*/testCatalog/CORPWSrawX.CAT line 56: Element "DATA_SET_DESC" has different value than source. Source: line 56 of file: *testDir*/testCatalog/CORPWS_0164/RAWDS.CAT 126,130c126,130 < kernels can be used with the SPICE toolkit to convert from the < spacecraft frame to virtually any frame which may be of use in < analyzing these data. However, for many purposes, the wave < amplitudes are extremely useful and may be entirely adequate with no < coordinate transformations at all. ---- > kernels EXTRAWORDHERE can be used with the SPICE toolkit to convert > from the spacecraft frame to virtually any frame which may be of > use in analyzing these data. However, for many purposes, the > wave amplitudes are extremely useful and may be entirely adequate > with no coordinate transformations at all. Summary: 1 of 1 validated, 0 skipped 0 of 1 passed End of Report
Comments	Results met success criteria.
Date of Testing	2013.12.04
Test Personnel	Richard Chen

Test Case ID	CTLG.2
Description	Validate a submission of PDS3 data.
Requirements	PASS 4.2.4: PDS will provide a mechanism to upgrade products or data sets which do not meet usability requirements (e.g., data sets from old missions)
Success Criteria	Tool flags invalid language constructs.
Test Steps	1. catalog -mvalidate -d testCatalog/pdsdd.full -t testCatalog/LRO_diviner
Test Results	Step 1: PDS Catalog Ingest Tool Report Configuration: Version Version 1.6.1 Date Wed, Dec 04 2013 at 02:03:20 PM

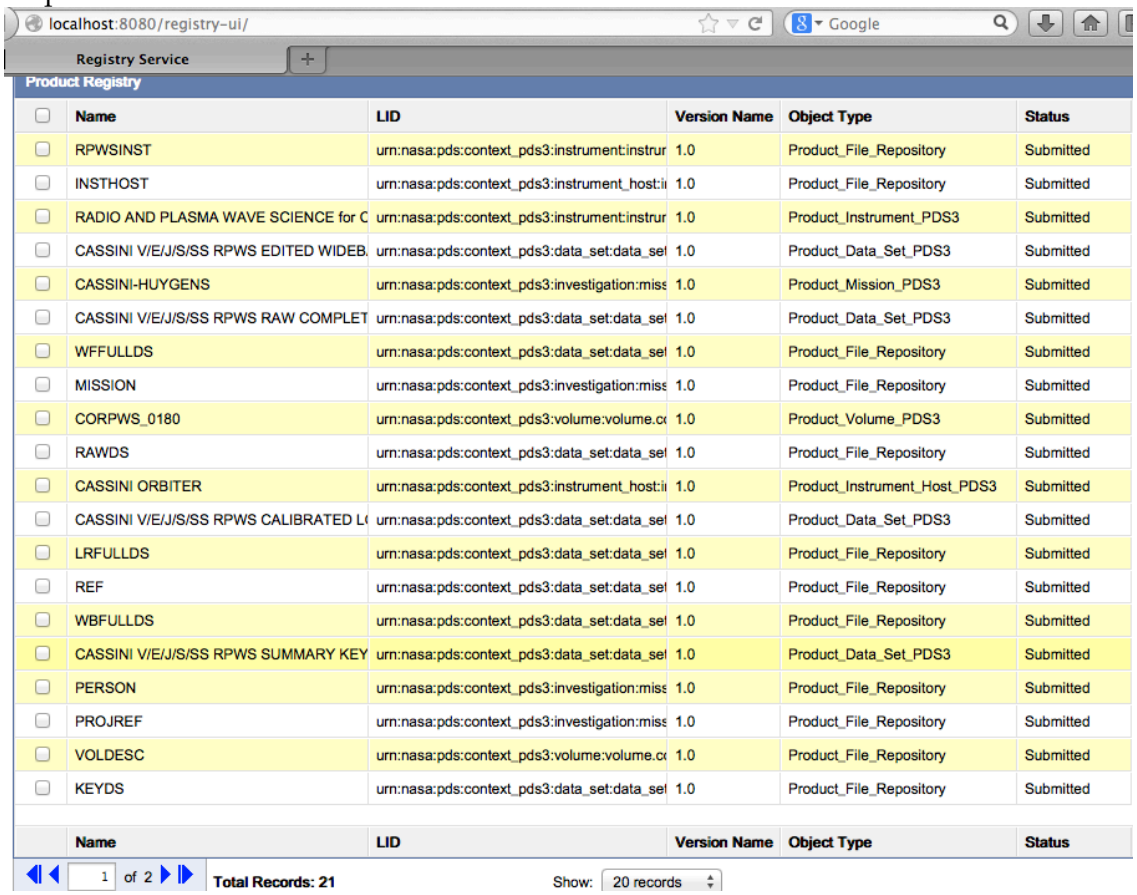
```
Parameters:
Mode                validate
Target              file: testDir/testCatalog/LRO_diviner/
Directory Recursion    true
Dictionary File(s)     [testCatalog/pdsdd.full]
Severity Level         WARNING
Aliasing Enabled       false
Validation Details:
  PASS: file: testDir/testCatalog/LRO_diviner/dsmap.cat
  PASS: file: testDir/testCatalog/LRO_diviner/dsmap_polar.cat
  PASS: file: testDir/testCatalog/LRO_diviner/gdrds.cat
  PASS: file: testDir/testCatalog/LRO_diviner/inst.cat
  PASS: file: testDir/testCatalog/LRO_diviner/insthost.cat
  PASS: file: testDir/testCatalog/LRO_diviner/mission.cat
  PASS: file: testDir/testCatalog/LRO_diviner/person.cat
  PASS: file: testDir/testCatalog/LRO_diviner/prpds.cat
  PASS: file: testDir/testCatalog/LRO_diviner/rdrds.cat
  PASS: file: testDir/testCatalog/LRO_diviner/ref.cat
  FAIL: file: testDir/testCatalog/LRO_diviner/voldesc.cat
    Begin Fragment: file: testDir/testCatalog/LRO_diviner/REF.CAT
      WARNING  The label fragment, "REF.CAT", should not contain a PDS_VERSION_ID.
    End Fragment: file: testDir/testCatalog/LRO_diviner/REF.CAT
    Begin Fragment: file: testDir/testCatalog/LRO_diviner/INST.CAT
      WARNING  The label fragment, "INST.CAT", should not contain a PDS_VERSION_ID.
    End Fragment: file: testDir/testCatalog/LRO_diviner/INST.CAT
    Begin Fragment: file: testDir/testCatalog/LRO_diviner/PERSON.CAT
      WARNING  The label fragment, "PERSON.CAT", should not contain a PDS_VERSION_ID.
    End Fragment: file: testDir/testCatalog/LRO_diviner/PERSON.CAT
    Begin Fragment: file: testDir/testCatalog/LRO_diviner/GDRDS.CAT
      WARNING  The label fragment, "GDRDS.CAT", should not contain a PDS_VERSION_ID.
    End Fragment: file: testDir/testCatalog/LRO_diviner/GDRDS.CAT
    Begin Fragment: file: testDir/testCatalog/LRO_diviner/INSTHOST.CAT
      WARNING  The label fragment, "INSTHOST.CAT", should not contain a PDS_VERSION_ID.
    End Fragment: file: testDir/testCatalog/LRO_diviner/INSTHOST.CAT
    Begin Fragment: file: testDir/testCatalog/LRO_diviner/MISSION.CAT
      WARNING  The label fragment, "MISSION.CAT", should not contain a PDS_VERSION_ID.
      ERROR  line 40: Found a reference, "SAYLOR2006A", which is not defined in a REFERENCE_KEY_ID
within the label.
      ERROR  line 40: Found a reference, "SAYLOR2006B", which is not defined in a REFERENCE_KEY_ID
within the label.
    End Fragment: file: testDir/testCatalog/LRO_diviner/MISSION.CAT
Referential Integrity Details:
  PASS: Instrument
    Parent File(s): [inst.cat]
    Begin checking children
    End checking children
  FAIL: Reference
    Parent File(s): [ref.cat]
    Begin checking children
      dsmap.cat: "REFERENCE_KEY_ID = SEIDELMANNETAL2002" is not found in a(n) "ref.cat".
      dsmap.cat: "REFERENCE_KEY_ID = SNYDER1987" is not found in a(n) "ref.cat".
      dsmap_polar.cat: "REFERENCE_KEY_ID = SEIDELMANNETAL2002" is not found in a(n) "ref.cat".
      dsmap_polar.cat: "REFERENCE_KEY_ID = SNYDER1987" is not found in a(n) "ref.cat".
    End checking children
  PASS: Personnel
    Parent File(s): [person.cat]
    Begin checking children
    End checking children
  PASS: Mission
    Parent File(s): [mission.cat]
    Begin checking children
    End checking children
  PASS: Data Set
    Parent File(s): [gdrds.cat, prpds.cat, rdrds.cat]
    Begin checking children
    End checking children
  PASS: Instrument Host
    Parent File(s): [insthost.cat]
    Begin checking children
    End checking children
New Standard Values:
Referential Integrity Summary:
```

	6 of 6 referential integrity check(s) made, 0 skipped 5 of 6 passed New Standard Values Summary: 0 new standard value(s) found Summary: 11 of 11 validated, 0 skipped 10 of 11 passed End of Report Step 2: Exception: No mode specified. 'm' flag must be specified.
Comments	Results met success criteria. All warnings and errors are either expected or carried over from PDS3, they do not affect meeting success criteria.
Date of Testing	2013.12.04
Test Personnel	Richard Chen

Test Case ID	CTLG.3
Description	Ingest valid PDS3 files into the PDS4 registry service
Requirements	PASS 4.2.4: PDS will provide a mechanism to upgrade products or data sets which do not meet usability requirements (e.g., data sets from old missions)
Success Criteria	Catalog successfully ingests the PDS3 files into the registry else indicates where the input is invalid. Tools to view the registry show the metadata of the PDS3 files
Test Steps	The catalog ingest requires access to a storage service (as of build 4a, only the URL of a transport service is needed). In its own terminal window: • storage-service stop # warning message if storage-service was not running • cd *binDir*/storage-service • \rm -r archive/ catalog/ logs/ run/ • storage-service start Also clean database as described in RESETREGISTRY in Section 3.1 Nominal case, including multiple REF.CATs: 1. catalog testCatalog/CORPWS_0180 -m ingest -s http://localhost:9000 -T http://localhost:9999 -r c1.out 2. In a browser: http://localhost:8080/registry-ui to see registrations When >1 voldesc lists the same catalog files (e.g. mission.cat), do not re-register them. 3. catalog testCatalog/CORPWS_0164 -m ingest -s http://localhost:9000 -T http://localhost:9999 -r c3.out 4. See registration of only voldesc: http://localhost:8080/registry-ui Give good error messages if file listed in voldesc is missing 5. catalog testCatalog/MPC_review -m ingest -s http://localhost:9000 -T http://localhost:9999 Nicely ignore dsmap catalog files. 6. catalog testCatalog/LRO_diviner -m ingest -s http://localhost:9000 -T http://localhost:9999 -r c6.out Quit and give a nice error message when the mode is not specified. 7. catalog testCatalog/CORPWS_0180
Test Results	Step 1: multiple REF.CATs no longer kill ingest. The contents of c1.out: PDS Catalog Ingest Tool Report Configuration: Version Version 1.6.1 Date Wed, Dec 04 2013 at 10:20:35 PM Parameters: Mode ingest Target file: *testDir*/testCatalog/CORPWS_0180/ Directory Recursion true

Severity Level WARNING
Report File c1.out
Ingest Details:
PASS: file: *testDir*/testCatalog/CORPWS_0180/INSTHOST.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0180/KEYDS.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0180/LRFULLDS.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0180/MISSION.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0180/PERSON.CAT
WARNING: This file is not required to ingest into the registry.
PASS: file: *testDir*/testCatalog/CORPWS_0180/PROJREF.CAT
WARNING: This file is not required to ingest into the registry.
PASS: file: *testDir*/testCatalog/CORPWS_0180/RAWDS.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0180/REF.CAT
WARNING: This file is not required to ingest into the registry.
PASS: file: *testDir*/testCatalog/CORPWS_0180/RPWSINST.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0180/VOLDESC.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0180/WBFULLDS.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0180/WFFULLDS.CAT
Summary:
12 of 12 file(s) ingested, 0 skipped
Number of successful file object ingestion: 12
Number of successful storage service ingestion: 12
Number of successful registry ingestion: 9
Name of the registry package: Catalog-Package_CORPWS_0180_20131204222036
End of Report

Step 2:



Name	LID	Version Name	Object Type	Status
RPWSINST	urn:nasa:pds:context_pds3:instrument:instrur	1.0	Product_File_Repository	Submitted
INSTHOST	urn:nasa:pds:context_pds3:instrument_host:i	1.0	Product_File_Repository	Submitted
RADIO AND PLASMA WAVE SCIENCE for C	urn:nasa:pds:context_pds3:instrument:instrur	1.0	Product_Instrument_PDS3	Submitted
CASSINI V/E/J/S/SS RPWS EDITED WIDEB	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_Data_Set_PDS3	Submitted
CASSINI-HUYGENS	urn:nasa:pds:context_pds3:investigation:miss	1.0	Product_Mission_PDS3	Submitted
CASSINI V/E/J/S/SS RPWS RAW COMPLET	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_Data_Set_PDS3	Submitted
WFFULLDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
MISSION	urn:nasa:pds:context_pds3:investigation:miss	1.0	Product_File_Repository	Submitted
CORPWS_0180	urn:nasa:pds:context_pds3:volume:volume.c	1.0	Product_Volume_PDS3	Submitted
RAWDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
CASSINI ORBITER	urn:nasa:pds:context_pds3:instrument_host:i	1.0	Product_Instrument_Host_PDS3	Submitted
CASSINI V/E/J/S/SS RPWS CALIBRATED L	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_Data_Set_PDS3	Submitted
LRFULLDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
REF	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
WBFULLDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
CASSINI V/E/J/S/SS RPWS SUMMARY KEY	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_Data_Set_PDS3	Submitted
PERSON	urn:nasa:pds:context_pds3:investigation:miss	1.0	Product_File_Repository	Submitted
PROJREF	urn:nasa:pds:context_pds3:investigation:miss	1.0	Product_File_Repository	Submitted
VOLDESC	urn:nasa:pds:context_pds3:volume:volume.c	1.0	Product_File_Repository	Submitted
KEYDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
Name	LID	Version Name	Object Type	Status

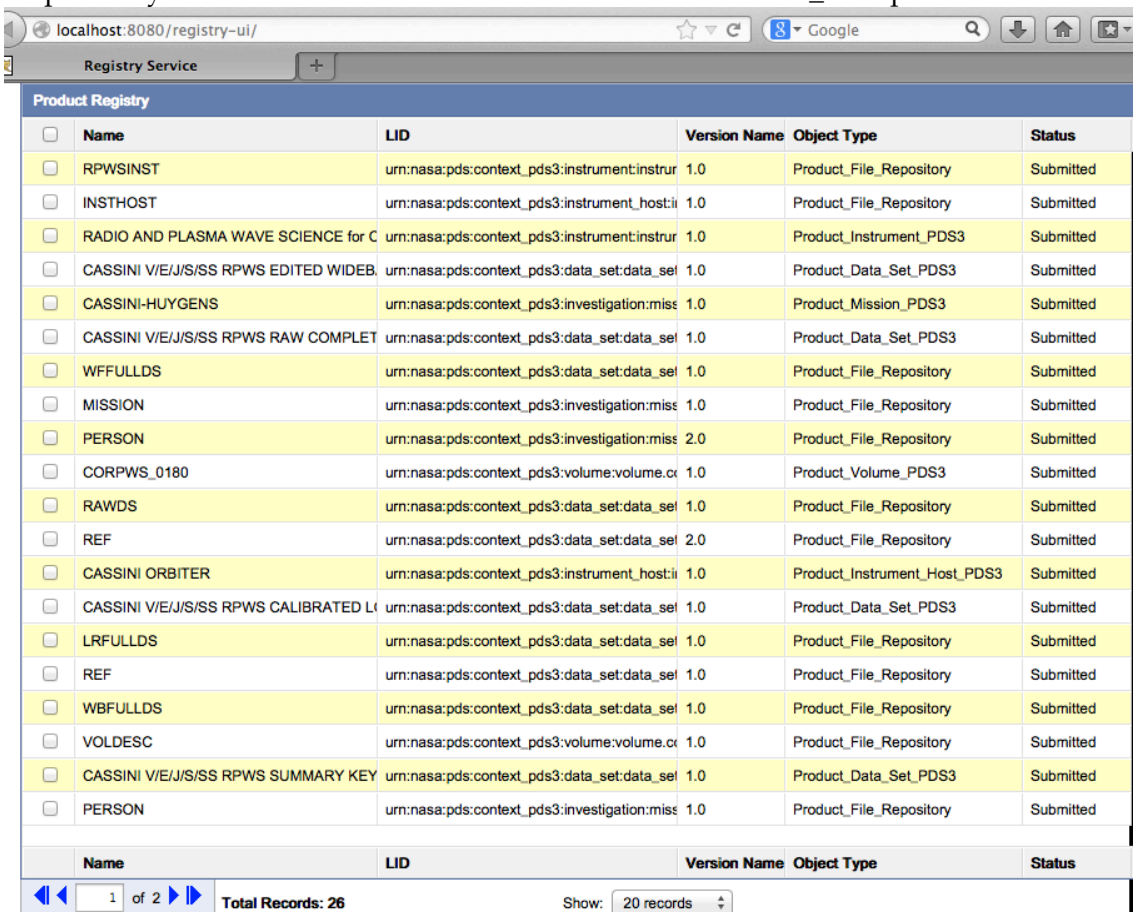
1 of 2 Total Records: 21 Show: 20 records

Step 3:

PDS Catalog Ingest Tool Report
Configuration:
Version Version 1.6.1
Date Thu, Dec 05 2013 at 12:56:28 AM
Parameters:
Mode ingest
Target file: *testDir*/testCatalog/CORPWS_0164/
Directory Recursion true
Severity Level WARNING

Report File c3.out
Ingest Details:
PASS: file: *testDir*/testCatalog/CORPWS_0164/INSTHOST.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0164/KEYDS.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0164/LRFULLDS.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0164/MISSION.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0164/PERSON.CAT
WARNING: This file is not required to ingest into the registry.
PASS: file: *testDir*/testCatalog/CORPWS_0164/PROJREF.CAT
WARNING: This file is not required to ingest into the registry.
PASS: file: *testDir*/testCatalog/CORPWS_0164/RAWDS.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0164/REF.CAT
WARNING: This file is not required to ingest into the registry.
PASS: file: *testDir*/testCatalog/CORPWS_0164/RPWSINST.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0164/VOLDESC.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0164/WBFULLDS.CAT
PASS: file: *testDir*/testCatalog/CORPWS_0164/WFFULLDS.CAT
Summary:
4 of 12 file(s) ingested, 0 skipped
Number of successful file object ingestion: 4
Number of successful storage service ingestion: 4
Number of successful registry ingestion: 1
Name of the registry package: Catalog-Package_CORPWS_0164_20131205005629
End of Report

Step 4: Only 2 extra records: the voldesc file and the CORPWS_0164 product



Name	LID	Version Name	Object Type	Status
RPWSINST	urn:nasa:pds:context_pds3:instrument:instrur	1.0	Product_File_Repository	Submitted
INSTHOST	urn:nasa:pds:context_pds3:instrument_host:i	1.0	Product_File_Repository	Submitted
RADIO AND PLASMA WAVE SCIENCE for C	urn:nasa:pds:context_pds3:instrument:instrur	1.0	Product_Instrument_PDS3	Submitted
CASSINI V/E/J/S/SS RPWS EDITED WIDEB	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_Data_Set_PDS3	Submitted
CASSINI-HUYGENS	urn:nasa:pds:context_pds3:investigation:miss	1.0	Product_Mission_PDS3	Submitted
CASSINI V/E/J/S/SS RPWS RAW COMPLET	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_Data_Set_PDS3	Submitted
WFFULLDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
MISSION	urn:nasa:pds:context_pds3:investigation:miss	1.0	Product_File_Repository	Submitted
PERSON	urn:nasa:pds:context_pds3:investigation:miss	2.0	Product_File_Repository	Submitted
CORPWS_0180	urn:nasa:pds:context_pds3:volume:volume.c	1.0	Product_Volume_PDS3	Submitted
RAWDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
REF	urn:nasa:pds:context_pds3:data_set:data_set	2.0	Product_File_Repository	Submitted
CASSINI ORBITER	urn:nasa:pds:context_pds3:instrument_host:i	1.0	Product_Instrument_Host_PDS3	Submitted
CASSINI V/E/J/S/SS RPWS CALIBRATED L	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_Data_Set_PDS3	Submitted
LRFULLDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
REF	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
WBFULLDS	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_File_Repository	Submitted
VOLDESC	urn:nasa:pds:context_pds3:volume:volume.c	1.0	Product_File_Repository	Submitted
CASSINI V/E/J/S/SS RPWS SUMMARY KEY	urn:nasa:pds:context_pds3:data_set:data_set	1.0	Product_Data_Set_PDS3	Submitted
PERSON	urn:nasa:pds:context_pds3:investigation:miss	1.0	Product_File_Repository	Submitted
Name	LID	Version Name	Object Type	Status

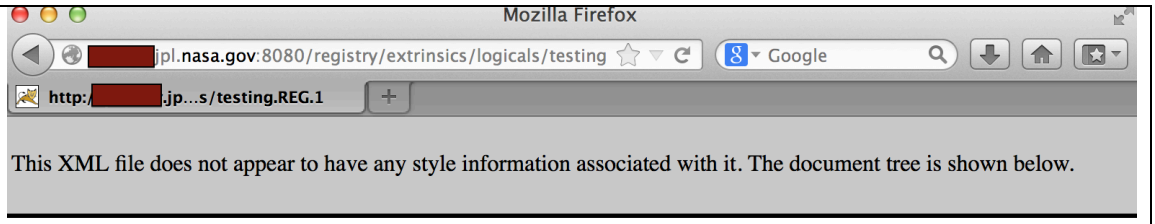
Step 5: Poor error message fixed

WARNING: *testDir*/testCatalog/MPC_review/asteroid.cat is missing.
WARNING: *testDir*/testCatalog/MPC_review/comet.cat is missing.
WARNING: *testDir*/testCatalog/MPC_review/satellite.cat is missing.
Dec 4, 2013 10:32:50 PM org.apache.oodt.cas.filemgr.datatransfer.RemoteDataTransferFactory <init>
INFO: RemoteDataTransfer enabled: using chunk size: [1024]
Dec 4, 2013 10:32:50 PM org.apache.oodt.cas.filemgr.datatransfer.RemoteDataTransferer setFileManagerUrl
INFO: Remote Data Transfer to: [http://localhost:9000] enabled
Error: Failed to get a product by name. productName = SBN_0178:asteroid.cat
Error: Catalog file (asteroid.cat) is missing in the archive volume and can't get it from the storage service.

	Step 6: similar to step 1's output. Used to die upon hitting dsmap.cat. c6.out:: PDS Catalog Ingest Tool Report Configuration: Version Version 1.6.1 Date Wed, Dec 04 2013 at 10:34:28 PM Parameters: Mode ingest Target file:*testDir*/testCatalog/LRO_diviner/ Directory Recursion true Severity Level WARNING Report File c4.out Ingest Details: SKIP: file:*testDir*/testCatalog/LRO_diviner/dsmap.cat WARNING: This file is not required to ingest into the registry service. ERROR: Failed to execute ingestFileObject method. SKIP: file:*testDir*/testCatalog/LRO_diviner/dsmap_polar.cat WARNING: This file is not required to ingest into the registry service. ERROR: Failed to execute ingestFileObject method. PASS: file:*testDir*/testCatalog/LRO_diviner/gdrds.cat PASS: file:*testDir*/testCatalog/LRO_diviner/inst.cat PASS: file:*testDir*/testCatalog/LRO_diviner/insthost.cat PASS: file:*testDir*/testCatalog/LRO_diviner/mission.cat PASS: file:*testDir*/testCatalog/LRO_diviner/person.cat WARNING: This file is not required to ingest into the registry. PASS: file:*testDir*/testCatalog/LRO_diviner/prpds.cat PASS: file:*testDir*/testCatalog/LRO_diviner/rdrds.cat PASS: file:*testDir*/testCatalog/LRO_diviner/ref.cat WARNING: This file is not required to ingest into the registry. PASS: file:*testDir*/testCatalog/LRO_diviner/voldesc.cat Summary: 9 of 11 file(s) ingested, 2 skipped Number of successful file object ingestion: 9 Number of successful storage service ingestion: 9 Number of successful registry ingestion: 7 Name of the registry package: Catalog-Package_LRODLR_1001_20131204223429 End of Report Step 7: Exception: No mode specified. 'm' flag must be specified.
Comments	Results met success criteria. https://oodt.jpl.nasa.gov/jira/browse/PDS-227, created during testing of build 4a, requests an improvement to not reregister skipped catalog objects (e.g. person.cat). The output image in Step 4 actually shows multiple copies of REF and PERSON, which this improvement would avoid.
Date of Testing	2013.12.04
Test Personnel	Richard Chen

Test Case ID	GEN.1
Description	Run components distributed over multiple machines on any PDS-supported platforms.
Requirements	PASS L5.GEN.1: The system shall operate in a distributed environment. PASS L5.GEN.2: Components shall run on any PDS-supported platform.
Success Criteria	Services produce identical results independent of machine and platform.
Test Steps	This is from test REG.1 below but posts to a different machine 1. http://xxxx.jpl.nasa.gov:8080/registry/extrinsics/logicals/testing.REG.1 in a browser shows no current product has lid "testing.REG.1", 2. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1b.xml http://xxxx.jpl.nasa.gov:8080/registry/extrinsics

	3. Repeat step 1 to see the lid 4. curl -X DELETE --verbose http://xxxx.jpl.nasa.gov:8080/registry/extrinsics/testing.REG.1.v1.0 5. Repeat step 1 to ensure lid no longer exist
Test Results	Step 1:  Step 2: * About to connect() to xxxx.jpl.nasa.gov port 8080 (#0) * Trying 128.149.xx.xx... * connected * Connected to xxxx.jpl.nasa.gov (128.149.xx.xx) port 8080 (#0) > POST /registry/extrinsics HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8r zlib/1.2.5 > Host: xxxx.jpl.nasa.gov:8080 > Accept: */* > Content-type:application/xml > Content-Length: 629 * upload completely sent off: 629 out of 629 bytes < HTTP/1.1 201 Created < Server: Apache-Coyote/1.1 < Location: http://xxxx.jpl.nasa.gov:8080/registry/extrinsics/testing.REG.1.v1.0 < Content-Type: application/xml < Transfer-Encoding: chunked < Date: Sun, 03 Nov 2013 06:59:06 GMT * Connection #0 to host xxxx.jpl.nasa.gov left intact testing.REG.1.v1.0* Closing connection #0 Step 3:

	 – <ns2:response> – <ns2:results> – <ns2:extrinsicObject versionName="1.0" description="Stolen from http://pdscm/2010/registry/registry-service /operate/index.html with attribute lid above changed for uniqueness" status="Submitted" objectType="Product" name="Product 1234 v1" lid="testing.REG.1" home="http://localhost:8080/registry" guid="testing.REG.1.v1.0"> – <ns2:slot name="last-name" id="195"> <ns2:value>Doe</ns2:value> </ns2:slot> – <ns2:slot name="first-name" id="196"> <ns2:value>John</ns2:value> </ns2:slot> – <ns2:slot name="phone" id="197"> <ns2:value>(818)777-7777</ns2:value> <ns2:value>(818)888-8888</ns2:value> </ns2:slot> </ns2:extrinsicObject> </ns2:results> </ns2:response> Step 4: * About to connect() to xxxx.jpl.nasa.gov port 8080 (#0) * Trying 128.149.xx.xx... * connected * Connected to xxxx.jpl.nasa.gov (128.149.xx.xx) port 8080 (#0) > DELETE /registry/extrinsics/testing.REG.1.v1.0 HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8r zlib/1.2.5 > Host: xxxx.jpl.nasa.gov:8080 > Accept: */* < HTTP/1.1 200 OK < Server: Apache-Coyote/1.1 < Content-Type: application/xml < Content-Length: 0 < Date: Sun, 03 Nov 2013 07:00:45 GMT * Connection #0 to host xxxx.jpl.nasa.gov left intact * Closing connection #0 Step 5 same as step 1
Comments	Results met success criteria.
Date of Testing	2013.11.02
Test Personnel	Richard Chen

Test Case ID	GEN.4 *not ready for build 4a. This is reserved for future testing
Description	Services provide an interface to enable monitoring of health.
Requirements	SKIP L5.GEN.8: Services shall provide an interface to enable monitoring of the service's health.
Success Criteria	The interface correctly reflects the services' health.
Test Steps	
Test Results	
Comments	
Date of Testing	

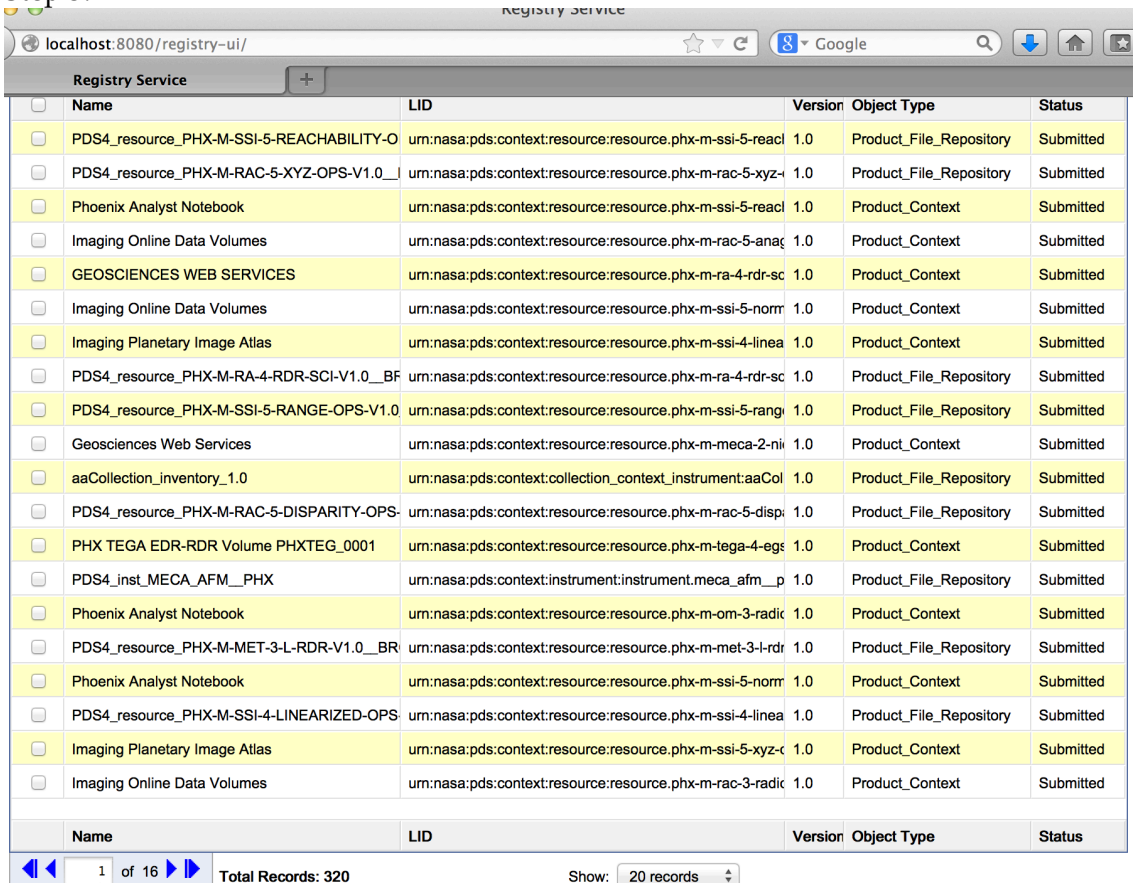
Test Personnel	

Test Case ID	GEN.7
Description	Document components' capabilities, dependencies, interfaces, installation, operation
Requirements	PASS L5.GEN.11: Components shall provide documentation detailing their capabilities, dependencies, interfaces, installation and operation
Success Criteria	Documentation of components show capabilities, dependencies, interfaces, installation and operation.
Test Steps	Examine such documentation, currently accessible from http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0
Test Results	Documents were available and examined.
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

Test Case ID	HVT.1
Description	Provide a command-line interface, accept a configuration file, recursively traverse directories, determine candidates for registration, capture metadata, submit metadata to the Registry Service, track each artifact registration.
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.GEN.7: Tools shall generate a report detailing results from a single execution of the tool.
Success Criteria	Harvest tool, executed from the command line, discovers all matching artifacts and for each submits metadata, based on both identifying and artifact-specific metadata, to the Registry service. A matching artifact resides in the directory tree of the target directory or is listed in a manifest file in the target directory, and it matches the criteria given in the user-edited configuration file and if previously registered, has been since modified. Tools to view the registry should show the matching artifacts, with appropriate metadata, and not show the non-matching artifacts.
Test Steps	The harvesting in this test is redundant to tests AAFUNCTION.*. The deleting (not a core function) is different, so if desired: 1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd *testDir*; harvest *testDir*/contextPDS4onlyPHX -c harvest-policy-master.xml -l h.out -e "*.xml" 3. In browser, check for harvested files. http://localhost:8080/registry-ui/ 4. grep "Registration Package GUID" h.out 5. Replace *guid* with the GUID from the previous line: curl -X DELETE -v http://localhost:8080/registry/packages/*guid*/members 6. In browser, http://localhost:8080/registry-ui/
Test Results	Step 2: The output file is large, so filter with • grep -v "SUCCESS|INFO" h.out | uniq

PDS Harvest Tool Log
Version Version 1.5.0
Time Sun, Nov 03 2013 at 12:12:49 AM
Target(s) [*testDir*/contextPDS4onlyPHX]
File Inclusions [*.xml]
Registry Location http://localhost:8080/registry
Registry Package Name Harvest-Package_20131103001249
Registration Package GUID urn:uuid:f5d585db-d13b-41d6-aef4-1c70786b8764
Summary:
157 of 157 file(s) processed, 0 other file(s) skipped
0 error(s), 0 warning(s)
157 of 157 products registered.
163 of 163 ancillary products registered.
Product Types Registered:
150 Product_Context
1 Product_Bundle
6 Product_Collection
163 Product_File_Repository
183 of 183 associations registered.
End of Log

Step 3:



Name	LID	Version	Object Type	Status
PDS4_resource_PHX-M-SSI-5-REACHABILITY-O	urn:nasa:pds:context:resource:resource.phx-m-ssi-5-reacl	1.0	Product_File_Repository	Submitted
PDS4_resource_PHX-M-RAC-5-XYZ-OPS-V1.0__I	urn:nasa:pds:context:resource:resource.phx-m-rac-5-xyz-(	1.0	Product_File_Repository	Submitted
Phoenix Analyst Notebook	urn:nasa:pds:context:resource:resource.phx-m-ssi-5-reacl	1.0	Product_Context	Submitted
Imaging Online Data Volumes	urn:nasa:pds:context:resource:resource.phx-m-rac-5-anag	1.0	Product_Context	Submitted
GEOSCIENCES WEB SERVICES	urn:nasa:pds:context:resource:resource.phx-m-ra-4-rdr-sc	1.0	Product_Context	Submitted
Imaging Online Data Volumes	urn:nasa:pds:context:resource:resource.phx-m-ssi-5-norm	1.0	Product_Context	Submitted
Imaging Planetary Image Atlas	urn:nasa:pds:context:resource:resource.phx-m-ssi-4-linea	1.0	Product_Context	Submitted
PDS4_resource_PHX-M-RA-4-RDR-SCI-V1.0__BF	urn:nasa:pds:context:resource:resource.phx-m-ra-4-rdr-sc	1.0	Product_File_Repository	Submitted
PDS4_resource_PHX-M-SSI-5-RANGE-OPS-V1.0	urn:nasa:pds:context:resource:resource.phx-m-ssi-5-rang	1.0	Product_File_Repository	Submitted
Geosciences Web Services	urn:nasa:pds:context:resource:resource.phx-m-meca-2-ni	1.0	Product_Context	Submitted
aaCollection_inventory_1.0	urn:nasa:pds:context:collection_context_instrument:aaCol	1.0	Product_File_Repository	Submitted
PDS4_resource_PHX-M-RAC-5-DISPARITY-OPS-	urn:nasa:pds:context:resource:resource.phx-m-rac-5-disp	1.0	Product_File_Repository	Submitted
PHX TEGA EDR-RDR Volume PHXTEG_0001	urn:nasa:pds:context:resource:resource.phx-m-tega-4-egs	1.0	Product_Context	Submitted
PDS4_inst_MECA_AFM__PHX	urn:nasa:pds:context:instrument:instrument.meca_afm__p	1.0	Product_File_Repository	Submitted
Phoenix Analyst Notebook	urn:nasa:pds:context:resource:resource.phx-m-om-3-radi	1.0	Product_Context	Submitted
PDS4_resource_PHX-M-MET-3-L-RDR-V1.0__BR	urn:nasa:pds:context:resource:resource.phx-m-met-3-l-rdr	1.0	Product_File_Repository	Submitted
Phoenix Analyst Notebook	urn:nasa:pds:context:resource:resource.phx-m-ssi-5-norm	1.0	Product_Context	Submitted
PDS4_resource_PHX-M-SSI-4-LINEARIZED-OPS	urn:nasa:pds:context:resource:resource.phx-m-ssi-4-linea	1.0	Product_File_Repository	Submitted
Imaging Planetary Image Atlas	urn:nasa:pds:context:resource:resource.phx-m-ssi-5-xyz-(	1.0	Product_Context	Submitted
Imaging Online Data Volumes	urn:nasa:pds:context:resource:resource.phx-m-rac-3-radi	1.0	Product_Context	Submitted
Name	LID	Version	Object Type	Status

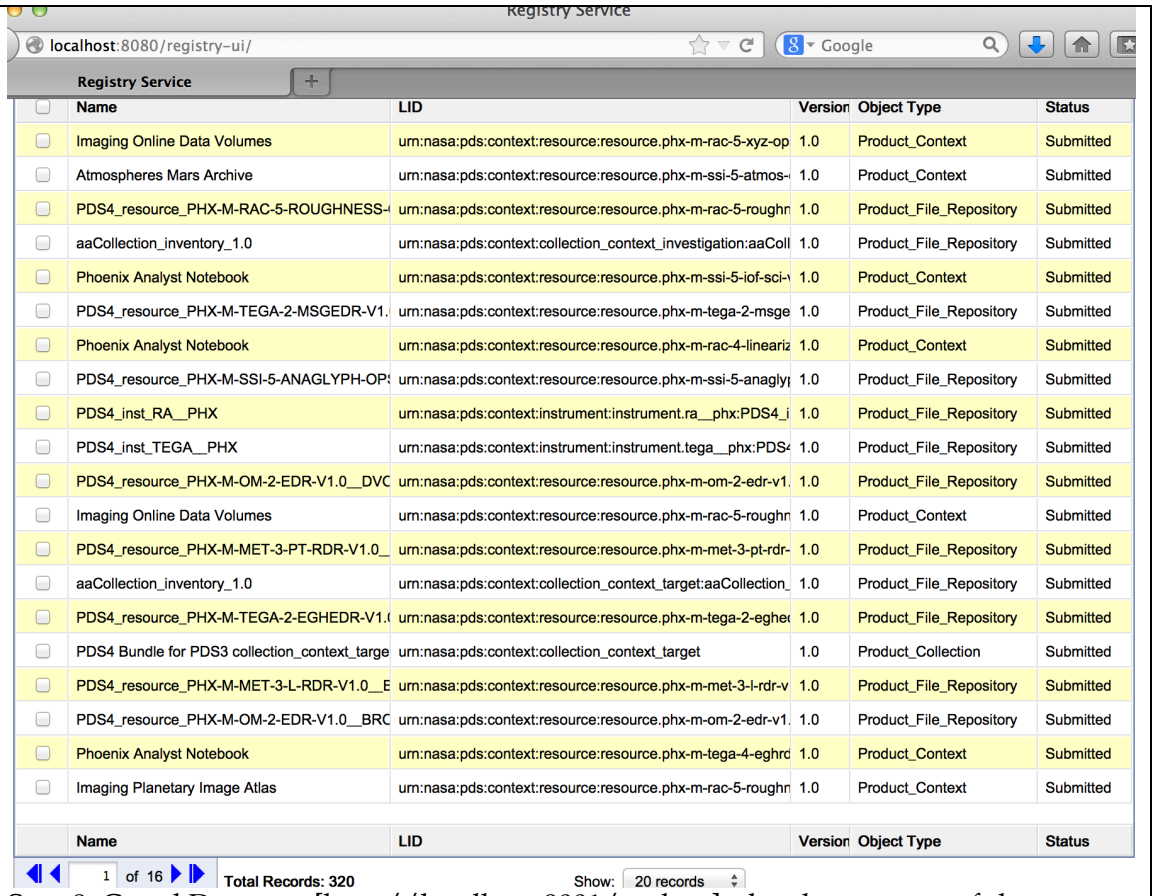
1 of 16 Total Records: 320 Show: 20 records

Step 5:

* About to connect() to localhost port 8080 (#0)
* Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> DELETE /registry/packages/urn:uuid:f5d585db-d13b-41d6-aef4-1c70786b8764/members HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5
> Host: localhost:8080
> Accept: */*
>< HTTP/1.1 200 OK
< Server: Apache-Coyote/1.1
< Content-Length: 0
< Date: Sun, 03 Nov 2013 07:17:46 GMT
* Connection #0 to host localhost left intact
* Closing connection #0

	Step 6: "There is no data to display"
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

Test Case ID	HVT.2
Description	Execute from a scheduler, accept a configuration file, recursively traverse directories, determine candidates for registration, capture metadata, submit metadata to the Registry Service.
Requirements	PASS L5.HVT.1: The tool shall accept a configuration file specifying policy for tool behavior. PASS L5.HVT.2: The tool shall execute from a scheduler… 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.
Success Criteria	Harvest tool, executed from a scheduler, discovers all matching artifacts and for each submits metadata, based on both identifying and artifact-specific metadata, to the Registry service. A matching artifact resides in the directory tree of the target directory or is listed in a manifest file in the target directory, and it matches the criteria given in the user-edited configuration file and if previously registered, has been since modified. Tools to view the registry should show the matching artifacts, with appropriate metadata, and not show the non-matching artifacts.
Test Steps	1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd *testDir/*; mkdir x; mv contextPDS4onlyPHX/* x 3. harvest *testDir*/contextPDS4onlyPHX -c harvest-policy-master.xml -l log.txt -P 9001 -w 120 4. In browser, http://localhost:8080/registry-ui/ shows no data In a different terminal window 5. harvest-ctrl --url http://localhost:9001/xmlrpc --operation --isRunning 6. cd *testDir*; mv x/* contextPDS4onlyPHX; rmdir x 7. In browser, after at most 120 seconds note changing Num Records. http://localhost:8080/registry-ui/ After Num Records stops increasing 8. harvest-ctrl --url http://localhost:9001/xmlrpc --operation --stop 9. grep "products registered" log.txt 10. grep Registration log.txt 11. Replace *guid* with the GUID from the previous line: curl -X DELETE -v http://localhost:8080/registry/packages/*guid*/members 12. Check Num Records is original value: http://localhost:8080/registry-ui
Test Results	Step 5: Yes Step 7: Same Num Records as in HVT.1, assuming both started with 0 records



Step 8: Crawl Daemon: [http://localhost:9001/xmlrpc]: shutdown successful

Step 9:

0 of 0 new products registered.
0 of 0 new ancillary products registered.
157 of 157 new products registered.
163 of 163 new ancillary products registered.
157 of 157 products registered.
163 of 163 ancillary products registered.

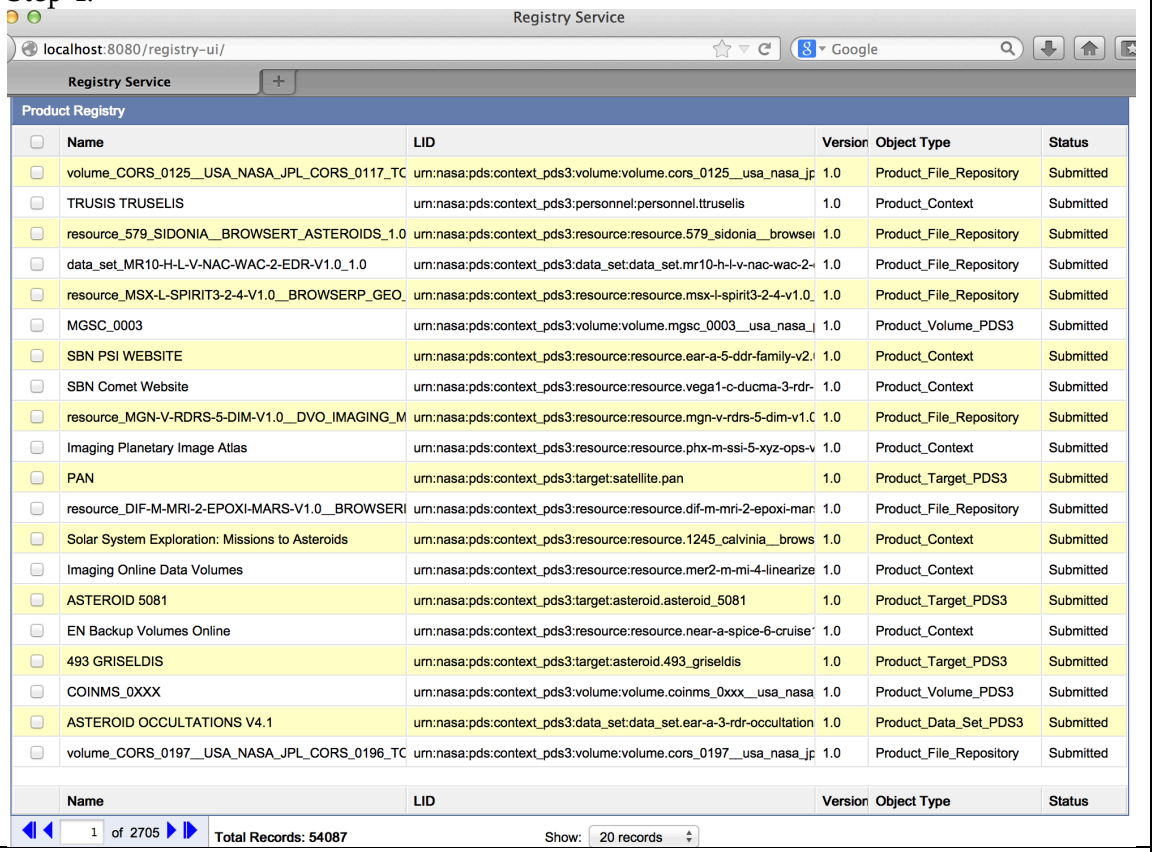
Step 11: Same as HVT.1's step 5:

```
* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> DELETE /registry/packages/urn:uuid:b3530136-c771-4352-8271-5ead5e609332/members HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5
> Host: localhost:8080
> Accept: */*
< HTTP/1.1 200 OK
< Server: Apache-Coyote/1.1
< Content-Length: 0
< Date: Sun, 03 Nov 2013 07:33:25 GMT
* Connection #0 to host localhost left intact
* Closing connection #0
```

Step 12: "There is no data to display" (same as HVT.1's step 6)

Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

Test Case ID	HVT.3
Description	Harvest a large number of files.

Requirements	PASS. No specific functional requirement. This is a performance test case.
Success Criteria	Harvest completes in a reasonable amount of time per product.
Test Steps	1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd *testDir* 3. harvest *testDir*/contextPDS3 -c harvest-policy-master.xml -l h.out -e "*.xml" 4. Check for harvested files. http://localhost:8080/registry-ui/
Test Results	Step 3: The bottom of h.out should have: Summary: 27037 of 27037 file(s) processed, 0 other file(s) skipped 0 error(s), 0 warning(s) 27037 of 27037 products registered. 27050 of 27050 ancillary products registered. Product Types Registered: 4195 Product_Target_PDS3 2103 Product_Data_Set_PDS3 1993 Product_Attribute_Definition 593 Product_Instrument_PDS3 69 Product_Mission_PDS3 1472 Product_Subscription_PDS3 79 Product_Class_Definition 8260 Product_Context 191 Product_Instrument_Host_PDS3 13 Product_Collection 5380 Product_Volume_PDS3 2688 Product_Volume_Set_PDS3 1 Product_Bundle 27050 Product_File_Repository 54073 of 54073 associations registered. End of Log Step 4: 
Comments	Results met success criteria.
Date of Testing	2013.11.02

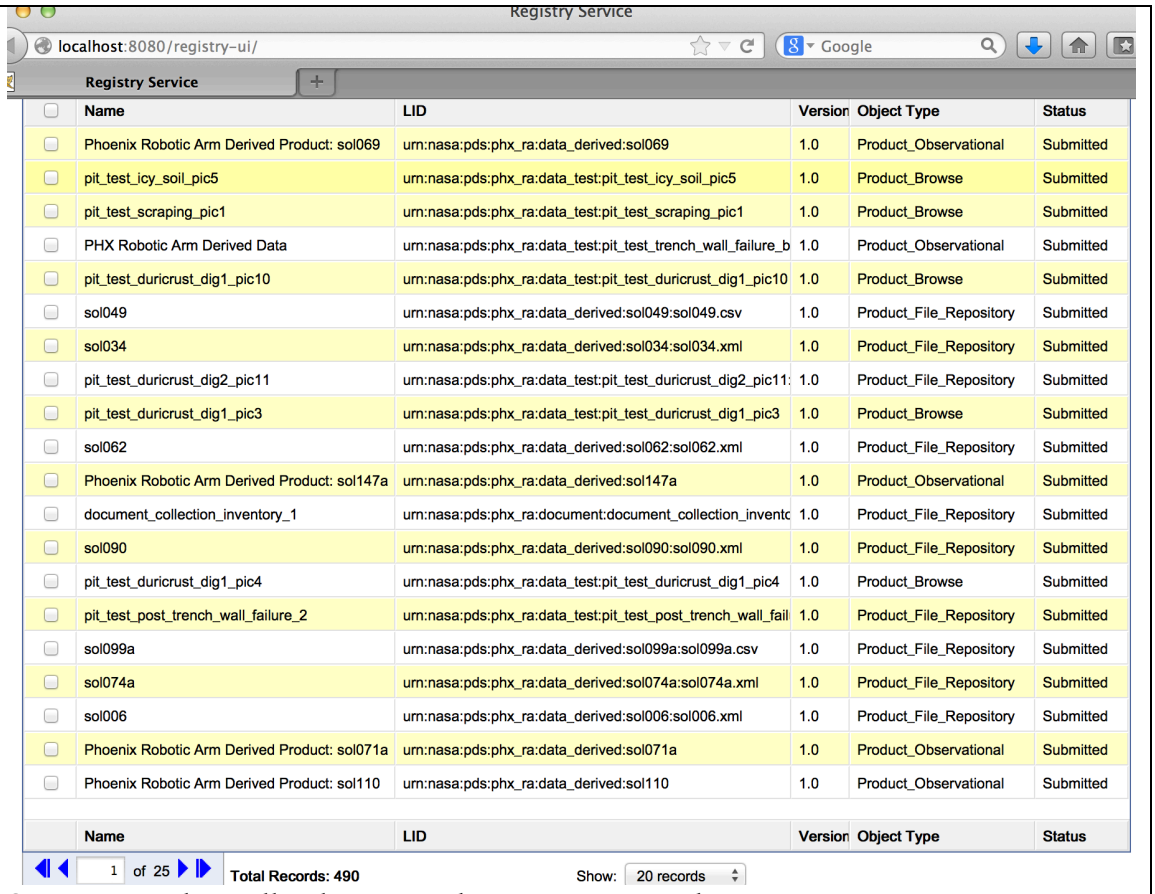
Name	LID	Version	Object Type	Status
volume_CORS_0125__USA_NASA_JPL_CORS_0117_TC	urn:nasa:pds:context_pds3:volume:volume.cors_0125__usa_nasa_jp	1.0	Product_File_Repository	Submitted
TRUSIS TRUSELIS	urn:nasa:pds:context_pds3:personnel:personnel.ttruselis	1.0	Product_Context	Submitted
resource_579_SIDONIA__BROWSERT_ASTEROIDS_1.0	urn:nasa:pds:context_pds3:resource:resource.579_sidonia__browse	1.0	Product_File_Repository	Submitted
data_set_MR10-H-L-V-NAC-WAC-2-EDR-V1.0_1.0	urn:nasa:pds:context_pds3:data_set:data_set.mr10-h-l-v-nac-wac-2-	1.0	Product_File_Repository	Submitted
resource_MSX-L-SPIRIT3-2-4-V1.0__BROWSERP_GEO_	urn:nasa:pds:context_pds3:resource:resource.msx-l-spirit3-2-4-v1.0_	1.0	Product_File_Repository	Submitted
MGSC_0003	urn:nasa:pds:context_pds3:volume:volume.mgsc_0003__usa_nasa_	1.0	Product_Volume_PDS3	Submitted
SBN PSI WEBSITE	urn:nasa:pds:context_pds3:resource:resource.ear-a-5-ddr-family-v2.	1.0	Product_Context	Submitted
SBN Comet Website	urn:nasa:pds:context_pds3:resource:resource.vega1-c-ducma-3-rdr-	1.0	Product_Context	Submitted
resource_MGN-V-RDRS-5-DIM-V1.0__DVO_IMAGING_M	urn:nasa:pds:context_pds3:resource:resource.mgn-v-rdrs-5-dim-v1.(	1.0	Product_File_Repository	Submitted
Imaging Planetary Image Atlas	urn:nasa:pds:context_pds3:resource:resource.phx-m-ssi-5-xyz-ops-v	1.0	Product_Context	Submitted
PAN	urn:nasa:pds:context_pds3:target:satellite.pan	1.0	Product_Target_PDS3	Submitted
resource_DIF-M-MRI-2-EPOXI-MARS-V1.0__BROWSERI	urn:nasa:pds:context_pds3:resource:resource.dif-m-mri-2-epoxi-mar	1.0	Product_File_Repository	Submitted
Solar System Exploration: Missions to Asteroids	urn:nasa:pds:context_pds3:resource:resource.1245_calvinia__brows	1.0	Product_Context	Submitted
Imaging Online Data Volumes	urn:nasa:pds:context_pds3:resource:resource.mer2-m-mi-4-linearize	1.0	Product_Context	Submitted
ASTEROID 5081	urn:nasa:pds:context_pds3:target:asteroid.asteroid_5081	1.0	Product_Target_PDS3	Submitted
EN Backup Volumes Online	urn:nasa:pds:context_pds3:resource:resource.near-a-spice-6-cruise	1.0	Product_Context	Submitted
493 GRISELDIS	urn:nasa:pds:context_pds3:target:asteroid.493_griseldis	1.0	Product_Target_PDS3	Submitted
COINMS_0XXX	urn:nasa:pds:context_pds3:volume:volume.coinms_0xxx__usa_nasa	1.0	Product_Volume_PDS3	Submitted
ASTEROID OCCULTATIONS V4.1	urn:nasa:pds:context_pds3:data_set:data_set.ear-a-3-rdr-occultation	1.0	Product_Data_Set_PDS3	Submitted
volume_CORS_0197__USA_NASA_JPL_CORS_0196_TC	urn:nasa:pds:context_pds3:volume:volume.cors_0197__usa_nasa_jp	1.0	Product_File_Repository	Submitted
Name	LID	Version	Object Type	Status

Test Personnel	Richard Chen

Test Case ID	HVT.4
Description	Authorize only authenticated users access to a controlled capacity.
Requirements	PASS L5.GEN.10: Components shall control access to interfaces that alter content. PASS L5.SEC.1: The service shall authenticate a user given identifying credentials for that user. PASS L5.SEC.3: The service shall authorize an authenticated user for access to a controlled capability.
Success Criteria	Registration fails when given invalid credentials.
Test Steps	1. cd *binDir*/harvest/bin; cp harvest harvest2 2. edit harvest2; change "localhost:8080" to a host:port with a secure registry 3. harvest2 *testDir*/ contextPDS4onlyPHX -u*username* -p*BAD_PASSWORD* –k badkey –c harvest-policy-master.xml
Test Results	Step 3: <html><head><title>Apache Tomcat/7.0.4 - Error report</title><style><!--H1 {font-family:Tahoma,Arial,sans-serif;color:white;background-color:#525D76;font-size:22px;} H2 {font-family:Tahoma,Arial,sans-serif;color:white;background-color:#525D76;font-size:16px;} H3 {font-family:Tahoma,Arial,sans-serif;color:white;background-color:#525D76;font-size:14px;} BODY {font-family:Tahoma,Arial,sans-serif;color:black;background-color:white;} B {font-family:Tahoma,Arial,sans-serif;color:white;background-color:#525D76;} P {font-family:Tahoma,Arial,sans-serif;background:white;color:black;font-size:12px;}A {color : black;}A.name {color : black;}HR {color : #525D76;}--></style> </head><body> HTTP Status 401 - <HR size="1" noshade="noshade"> type Status report message <u></u> description <u>This request requires HTTP authentication ().</u> <HR size="1" noshade="noshade"> Apache Tomcat/7.0.4 </body></html> Summary: 0 of 0 file(s) processed, 0 skipped 0 of 0 products registered. 0 of 0 associations registered, 0 skipped End of Log
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

Test Case ID	HVT.5
Description	Harvest skips candidate products not matching configuration file. Harvest also checks for previous registrations and skips those.
Requirements	PASS L5.HVT.1: The tool shall accept a configuration file specifying policy for tool behavior. PASS L5.HVT.5: The tool shall determine candidate products for registration through a combination of the following… PASS L5.HVT.8: The tool shall track each product registration.
Success Criteria	Tools to view the registry should show only matching products and not the others.
Test Steps	Run harvest with config file that does not accept Product_Document 1. harvest *testDir*/bundle_geo_ra –c harvestPolicyNoDoc.xml –l h.out -e "*.xml" 2. grep -v "SUCCESS|INFO" h.out | uniq 3. In browser, check that no Product_Document was registered: http://localhost:8080/registry-ui Repeat to show nothing more gets registered. 4. harvest *testDir*/bundle_geo_ra –c harvestPolicyNoDoc.xml –l h.out -e "*.xml" 5. http://localhost:8080/registry-ui Run harvest with config file that accepts Product_Document 6. harvest *testDir*/bundle_geo_ra –c harvest-policy-master.xml –l h.out -e "*.xml" 7. grep -v "SUCCESS|INFO" h.out | uniq 8. http://localhost:8080/registry-ui. Click "Object Type", then on the bottom select "Show: 50 records"

Test Results	Step 2: Note the SKIPs of Product_Document: PDS Harvest Tool Log Version Version 1.5.0 Time Sun, Nov 03 2013 at 01:00:44 AM Target(s) [*testDir*/bundle_geo_ra] File Inclusions [*.xml] Registry Location http://localhost:8080/registry Registry Package Name Harvest-Package_20131103010044 Registration Package GUID urn:uuid:e2535639-e5c3-4e53-b2aa-77e090d21d6b SKIP: [*testDir*/bundle_geo_ra/document/activity_table_desc.xml] 'Product_Document' is not an object type found in the policy file. SKIP: [*testDir*/bundle_geo_ra/document/ra_dataset.xml] 'Product_Document' is not an object type found in the policy file. SKIP: [*testDir*/bundle_geo_ra/document/ra_instrument.xml] 'Product_Document' is not an object type found in the policy file. SKIP: [*testDir*/bundle_geo_ra/document/readme.xml] 'Product_Document' is not an object type found in the policy file. SKIP: [*testDir*/bundle_geo_ra/context/mars_planet.xml] Not a primary member. SKIP: [*testDir*/bundle_geo_ra/context/phx.xml] Not a primary member. SKIP: [*testDir*/bundle_geo_ra/context/ra_phx.xml] Not a primary member. WARNING: [*testDir*/bundle_geo_ra/document/document_collection_1.xml] Product not found in registry for reference: urn:nasa:pds:phx_ra:document:activity_table_desc::1.0. LIDVID will be used as the target reference for the association. WARNING: [*testDir*/bundle_geo_ra/document/document_collection_1.xml] Product not found in registry for reference: urn:nasa:pds:phx_ra:document:ra_dataset::1.0. LIDVID will be used as the target reference for the association. WARNING: [*testDir*/bundle_geo_ra/document/document_collection_1.xml] Product not found in registry for reference: urn:nasa:pds:phx_ra:document:ra_instrument::1.0. LIDVID will be used as the target reference for the association. WARNING: [*testDir*/bundle_geo_ra/document/document_collection_1.xml] Product not found in registry for reference: urn:nasa:pds:phx_ra:document:readme::1.0. LIDVID will be used as the target reference for the association. Summary: 164 of 164 file(s) processed, 7 other file(s) skipped 0 error(s), 4 warning(s) 164 of 164 products registered. 326 of 326 ancillary products registered. Product Types Registered: 38 Product_Browse 120 Product_Observational 1 Product_Context 1 Product_Bundle 4 Product_Collection 326 Product_File_Repository 488 of 488 associations registered. End of Log Step 3: Note that 490 products are registered



Name	LID	Version	Object Type	Status
Phoenix Robotic Arm Derived Product: sol069	urn:nasa:pds:phx_ra:data_derived:sol069	1.0	Product_Observational	Submitted
pit_test_icy_soil_pic5	urn:nasa:pds:phx_ra:data_test:pit_test_icy_soil_pic5	1.0	Product_Browse	Submitted
pit_test_scraping_pic1	urn:nasa:pds:phx_ra:data_test:pit_test_scraping_pic1	1.0	Product_Browse	Submitted
PHX Robotic Arm Derived Data	urn:nasa:pds:phx_ra:data_test:pit_test_trench_wall_failure_b	1.0	Product_Observational	Submitted
pit_test_duricrust_dig1_pic10	urn:nasa:pds:phx_ra:data_test:pit_test_duricrust_dig1_pic10	1.0	Product_Browse	Submitted
sol049	urn:nasa:pds:phx_ra:data_derived:sol049:sol049.csv	1.0	Product_File_Repository	Submitted
sol034	urn:nasa:pds:phx_ra:data_derived:sol034:sol034.xml	1.0	Product_File_Repository	Submitted
pit_test_duricrust_dig2_pic11	urn:nasa:pds:phx_ra:data_test:pit_test_duricrust_dig2_pic11:	1.0	Product_File_Repository	Submitted
pit_test_duricrust_dig1_pic3	urn:nasa:pds:phx_ra:data_test:pit_test_duricrust_dig1_pic3	1.0	Product_Browse	Submitted
sol062	urn:nasa:pds:phx_ra:data_derived:sol062:sol062.xml	1.0	Product_File_Repository	Submitted
Phoenix Robotic Arm Derived Product: sol147a	urn:nasa:pds:phx_ra:data_derived:sol147a	1.0	Product_Observational	Submitted
document_collection_inventory_1	urn:nasa:pds:phx_ra:document:document_collection_inventc	1.0	Product_File_Repository	Submitted
sol090	urn:nasa:pds:phx_ra:data_derived:sol090:sol090.xml	1.0	Product_File_Repository	Submitted
pit_test_duricrust_dig1_pic4	urn:nasa:pds:phx_ra:data_test:pit_test_duricrust_dig1_pic4	1.0	Product_Browse	Submitted
pit_test_post_trench_wall_failure_2	urn:nasa:pds:phx_ra:data_test:pit_test_post_trench_wall_fail	1.0	Product_File_Repository	Submitted
sol099a	urn:nasa:pds:phx_ra:data_derived:sol099a:sol099a.csv	1.0	Product_File_Repository	Submitted
sol074a	urn:nasa:pds:phx_ra:data_derived:sol074a:sol074a.xml	1.0	Product_File_Repository	Submitted
sol006	urn:nasa:pds:phx_ra:data_derived:sol006:sol006.xml	1.0	Product_File_Repository	Submitted
Phoenix Robotic Arm Derived Product: sol071a	urn:nasa:pds:phx_ra:data_derived:sol071a	1.0	Product_Observational	Submitted
Phoenix Robotic Arm Derived Product: sol110	urn:nasa:pds:phx_ra:data_derived:sol110	1.0	Product_Observational	Submitted

Name	LID	Version	Object Type	Status

1 of 25 Total Records: 490 Show: 20 records

Step 5: Note that still only 490 products are registered
Step 7: Many ERRORs for "Product already exists".
Step 8: Note that 1) 502 products are registered and 2) there are 4 Product Documents

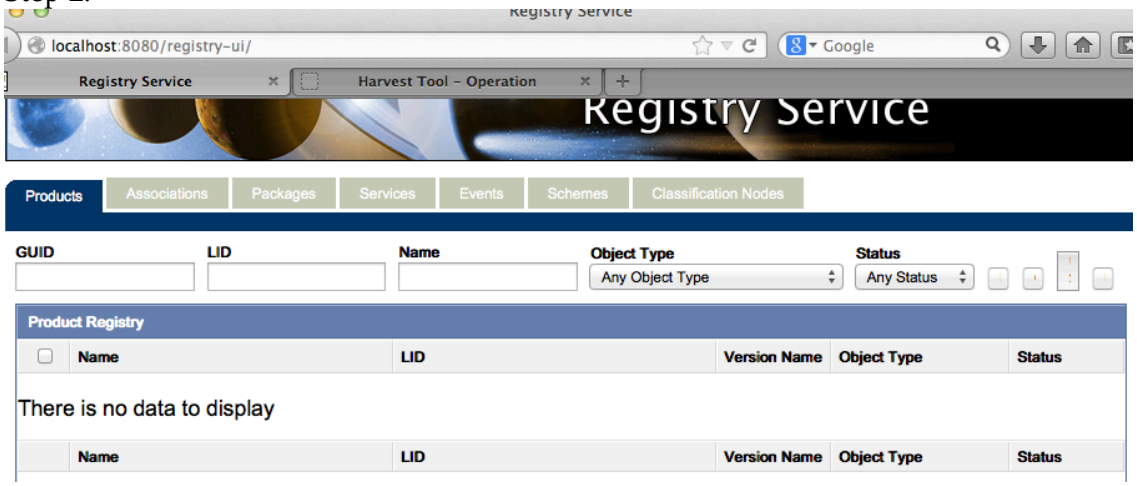
Name	LID	Version Name	Object Type	Status
pit_test_scraping_pic1	urn:nasa:pds:phx_ra:data_test:pit_test_scraping_	1.0	Product_Browse	Submitted
pit_test_pre_trench_wall_failure	urn:nasa:pds:phx_ra:data_test:pit_test_pre_trenc	1.0	Product_Browse	Submitted
pit_test_post_trench_wall_failure_2	urn:nasa:pds:phx_ra:data_test:pit_test_post_tren	1.0	Product_Browse	Submitted
pit_test_post_trench_wall_failure_1	urn:nasa:pds:phx_ra:data_test:pit_test_post_tren	1.0	Product_Browse	Submitted
Phoenix Robotic Arm Data Set	urn:nasa:pds:phx_ra	1.0	Product_Bundle	Submitted
Phoenix Robotic Arm Derived Data	urn:nasa:pds:phx_ra:context	1.0	Product_Collection	Submitted
Phoenix Robotic Arm Derived Data	urn:nasa:pds:phx_ra:data_derived	1.0	Product_Collection	Submitted
Phoenix Robotic Arm Test Data	urn:nasa:pds:phx_ra:data_test	1.0	Product_Collection	Submitted
Phoenix Robotic Arm Document Collection	urn:nasa:pds:phx_ra:document	1.0	Product_Collection	Submitted
Phoenix Mission to Mars	urn:nasa:pds:context:investigation:phoenix	1.0	Product_Context	Submitted
Introduction for Phoenix Robotic Arm Dataset	urn:nasa:pds:phx_ra:document:readme	1.0	Product_Document	Submitted
Phoenix Robotic Arm Instrument Description	urn:nasa:pds:phx_ra:document:ra_instrument	1.0	Product_Document	Submitted
Phoenix Robotic Arm Dataset Description	urn:nasa:pds:phx_ra:document:ra_dataset	1.0	Product_Document	Submitted
Description of Phoenix Robotic Arm Activities	urn:nasa:pds:phx_ra:document:activity_table_de	1.0	Product_Document	Submitted
readme	urn:nasa:pds:phx_ra:document:readme:readme.	1.0	Product_File_Repository	Submitted
readme	urn:nasa:pds:phx_ra:document:readme:readme.	1.0	Product_File_Repository	Submitted

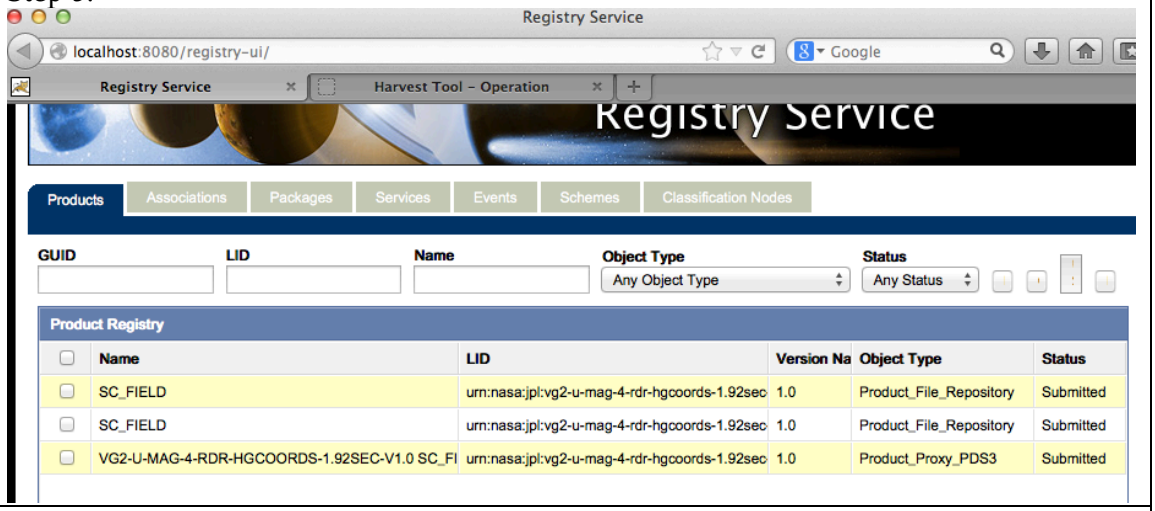
Name	LID	Version Name	Object Type	Status

1 of 11 Total Records: 502 Show: 50 records

Comments	Results met success criteria. https://oodt.jpl.nasa.gov/jira/browse/PDS-166, created during testing of build 3b, requests an improvement: check if secondary members match primary members.
Date of Testing	2013.11.03

Test Personnel	Richard Chen

Test Case ID	HVT.6
Description	Harvest PDS3 products, not just catalog files.
Requirements	PASS 4.2.4: PDS will provide a mechanism to upgrade products or data sets which do not meet usability requirements (e.g., data sets from old missions)
Success Criteria	The registry shows the harvested PDS3 products.
Test Steps	1. Clean database as described in RESETREGISTRY in Section 3.1 2. In browser, http://localhost:8080/registry-ui/ shows no data 3. cd *testDir* 4. harvest -c testHarv/harvPDS3.xml 5. http://localhost:8080/registry-ui/ shows the harvested product and 2 files
Test Results	Step 2:  Step 4: Note that harvest previously quit if DATA_SET_ID had >1 value PDS Harvest Tool Log Version Version 1.5.0 Time Thu, Dec 05 2013 at 01:16:12 AM Target(s) [*testDir*/testHarv] Target Type PDS3 File Inclusions [*.LBL] Severity Level INFO Registry Location http://localhost:8080/registry Registry Package Name Harvest-Package_20131205011612 Registration Package GUID urn:uuid:26d1b7fe-302a-4081-9695-19774784c07e INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1 INFO: [*testDir*/testHarv/SC_FIELD.LBL] Begin processing. INFO: [*testDir*/testHarv/SC_FIELD.LBL] Creating logical identifier. INFO: [*testDir*/testHarv/SC_FIELD.LBL] Created the following logical identifier: urn:nasa:jpl:vg2-u-mag-4-rdr-hgcoords-1.92sec-v1.0:mag:sc_field INFO: [*testDir*/testHarv/SC_FIELD.LBL] Creating title. SUCCESS: [*testDir*/testHarv/SC_FIELD.LBL] Successfully registered product: urn:nasa:jpl:vg2-u-mag-4-rdr-hgcoords-1.92sec-v1.0:mag:sc_field::1.0 INFO: [*testDir*/testHarv/SC_FIELD.LBL] Product has the following GUID: urn:uuid:6c749006-9775-4612-8223-41cd67600ad5 INFO: [*testDir*/testHarv/SC_FIELD.LBL] Capturing file object metadata for SC_FIELD.LBL INFO: [*testDir*/testHarv/SC_FIELD.LBL] Capturing file object metadata for SC_FIELD.DAT SUCCESS: [*testDir*/testHarv/SC_FIELD.LBL] Successfully registered product: urn:nasa:jpl:vg2-u-mag-4-rdr-hgcoords-1.92sec-v1.0:mag:sc_field:SC_FIELD.LBL::1.0 INFO: [*testDir*/testHarv/SC_FIELD.LBL] Product has the following GUID: urn:uuid:216fb322-5865-4d5d-9e4a-9343434083bc SUCCESS: [*testDir*/testHarv/SC_FIELD.LBL] Successfully registered product: urn:nasa:jpl:vg2-u-mag-4-rdr-hgcoords-1.92sec-v1.0:mag:sc_field:SC_FIELD.DAT::1.0 INFO: [*testDir*/testHarv/SC_FIELD.LBL] Product has the following GUID: urn:uuid:b93a3088-4a56-4cf6-82f9-1e9a721cc8e4

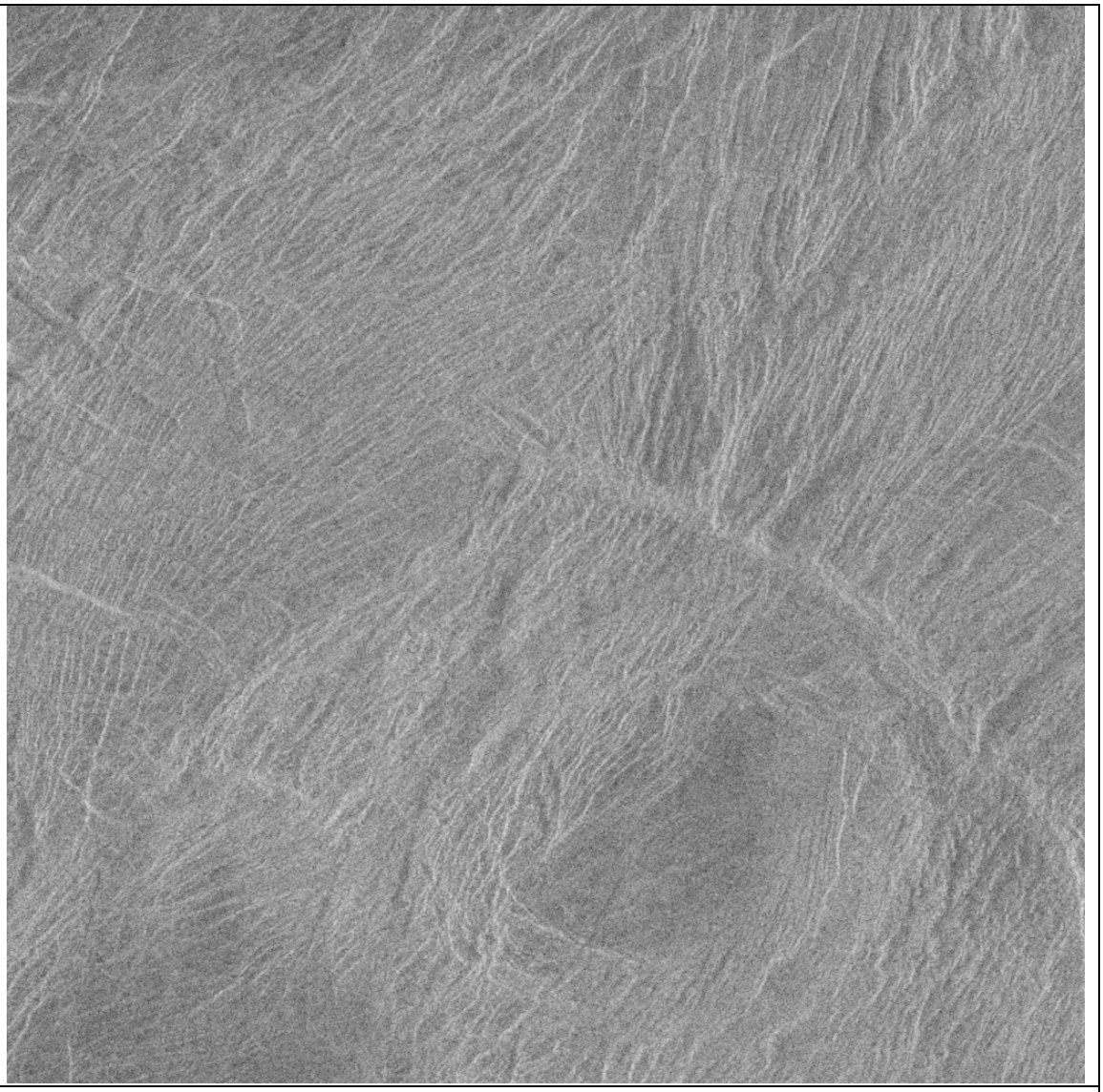
	SUCCESS: [*testDir*/testHarv/SC_FIELD.LBL] Successfully registered association to urn:nasa:jpl:vg2-u-mag-4-rdr-hgcoords-1.92sec-v1.0:mag:sc_field:SC_FIELD.LBL::1.0 INFO: [*testDir*/testHarv/SC_FIELD.LBL] Association has the following GUID: urn:uuid:b2c63b96-3275-49d1-91a9-09690893d43f SUCCESS: [*testDir*/testHarv/SC_FIELD.LBL] Successfully registered association to urn:nasa:jpl:vg2-u-mag-4-rdr-hgcoords-1.92sec-v1.0:mag:sc_field:SC_FIELD.DAT::1.0 INFO: [*testDir*/testHarv/SC_FIELD.LBL] Association has the following GUID: urn:uuid:36acb7be-27dc-4ff1-b55c-296c6716ce73 Summary: 1 of 1 file(s) processed, 0 other file(s) skipped 0 error(s), 0 warning(s) 1 of 1 products registered. 2 of 2 ancillary products registered. Product Types Registered: 2 Product_File_Repository 1 Product_Proxy_PDS3 2 of 2 associations registered. End of Log Step 5: 
Comments	Results met success criteria.
Date of Testing	2013.12.04
Test Personnel	Richard Chen

Test Case ID	PRG.1
Description	Generate a PDS4 label from a PDS3 label or a PDS-specific DOM object.
Requirements	PASS L4.PRP.2 : The system shall provide a tool that assists users in the generation of PDS product labels.
Success Criteria	Generate produces a syntactically valid PDS Product Label else indicates where the input is invalid.
Test Steps	Some files in testDir/testHarvest/ come from PDS3 labels. Generate automatically and compare. Step 3 would be better with an xml diff. 1. cd *testDir*/ 2. generate -p testPrep/gen_ELE_MOM.LBL -t testPrep/gen_data.vm 3. diff -w testPrep/gen_ele_mom_pds4.xml testPrep/gen_ELE_MOM.LBL.xml 4. rm testPrep/gen_ELE_MOM.LBL.xml
Test Results	Step 2: Note that generate used to (erroneously) require –d or –o New PDS4 Label: *testDir*/testPrep/gen_ELE_MOM.LBL.xml Step 3: 1,7c1 < <Product_Observational xmlns="http://pds.nasa.gov/schema/pds4/pds/v06"

	< xmlns:pds="http://pds.nasa.gov/schema/pds4/pds/v06" < xmlns:dph="http://pds.nasa.gov/schema/pds4/dph/v01" < xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" < xsi:schemaLocation="http://pds.nasa.gov/schema/pds4/dph/v01 http://pds.jpl.nasa.gov/repository/pds4/examples/dph_examples_6h/dph_example_archive_VG2PLS /schemas/Product_TableChar_tailored_0600h.xsd" < xsi:type="dph:Product_Table_Character"> --- > <Product_Observational xmlns="http://pds.nasa.gov/schema/pds4/pds/v06" xmlns:dph="http://pds.nasa.gov/schema/pds4/dph/v01" xmlns:pds="http://pds.nasa.gov/schema/pds4/pds/v06" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://pds.nasa.gov/schema/pds4/dph/v01 http://pds.jpl.nasa.gov/repository/pds4/examples/dph_examples_6h/dph_example_archive_VG2PLS /schemas/Product_TableChar_tailored_0600h.xsd" xsi:type="dph:Product_Table_Character"> 24d17 71d63 80,81c72 < <Node_Area> < </Node_Area> --- > <Node_Area/> 83d73 102,129d91 < <Field_Character> < <name>TIME</name> < <field_number>1</field_number> < <field_location>1</field_location> < <data_type>ASCII_Time</data_type> < <field_length>24</field_length> < <description> < Time column. This field contains time in PDS format < yyyy-mm-ddThh:mm:ss.sssZ. The individual elements of the < time field can be read using the format < (i4,4(1x,i2),1x,f6.3) yr, mon, day, hr, min, sec. < </description> < </Field_Character> < <Field_Character> < <name>ELE_DEN</name> < <field_number>2</field_number> < <field_location>25</field_location> < <data_type>ASCII_Real</data_type> < <field_length>10</field_length> < <unit>count/cm**3</unit> < <description> < Column contains total electron moment density in counts/cm^3. < </description> < <Special_Constants> < <missing_constant>-9.99e+10</missing_constant> < </Special_Constants> < </Field_Character> 134c96 < <data_type>ASCII_Real</data_type> --- > <data_type>ASCII_REAL</data_type> 136,140c98 < <unit>electronvolt</unit> < <description> < Column contains total electron moment temperature in units of < electron volts. < </description> --- > <description>Column contains total electron moment temperature in units of electron volts.</description>
Comments	Generate converts most constructs in a PDS3 label into a PDS4 label.

	Results met success criteria. https://oodt.jpl.nasa.gov/jira/browse/PDS-113 and https://oodt.jpl.nasa.gov/jira/browse/PDS-114, created during testing of build 2c, request new features: handle carets in PDS3 labels and add more looping constructs.
Date of Testing	2013.12.04
Test Personnel	Richard Chen

Test Case ID	PRT.1
Description	Transform PDS4 images into other formats. Transform is built upon a Java API.
Requirements	PASS L4.PRP.4: The system shall provide a tool for transforming PDS products as follows… PASS L5.GEN.4: Tools shall have an application programming interface.
Success Criteria	Input and output images look the same.
Test Steps	1. cd *testDir/* 2. transform testPrep/i943630r.xml -o x.jpg -f jpg 3. transform testPrep/tfm_FF01.LBL -o x.bmp -f bmp
Test Results	Step 2 x.jpg:  Step 3:

	
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

Test Case ID	PRV.1
Description	Accept a file or a directory name for product(s) to be validated. If directory, be able to traverse the tree to find products. Indicate the schemas utilized during validation. Validate is built upon a Java API.
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 discovered within that tree. 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.9: The tool shall indicate the schema(s) utilized during validation. PASS L5.GEN.4: Tools shall have an application programming interface. PASS L5.GEN.7: Tools shall generate a report detailing results from a single execution of the tool.
Success Criteria	Validation tool validates a file or all eligible products in a directory tree. When validating a product, a label, or a schema, indicates which schemas it utilized during

	the validation. Ensures that a product label is well-formed XML and conforms to its schemas.
Test Steps	1. cd *testDir/* 2. validate bundle_clem/data/collection_1.0.xml -m0300a bundle_clem was created using PDS schema 0300a. An alternative to option -m0300a is -x bundle_clem/XML_Schema/PDS4_PDS_0300a.xsd -S bundle_clem/XML_Schema/PDS4_PDS_0300a.sch 3. validate bundle_clem -e "*.xml" -m0300a Clear errors caused by missing local data dictionary. 4. validate bundle_clem -e "*.xml" -m0300a -x bundle_clem/XML_Schema/imaging_dictionary.xsd bundle_clem/XML_Schema/PDS4_PDS_0300a.xsd
Test Results	Step 2: PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-02T23:52:00Z Core Schemas [PDS4_OPS_0300a.xsd] Core Schematrons [PDS4_OPS_0300a.sch] Model Version 0300a Parameters: Targets [file: *testDir*/bundle_clem/data/collection_1.0.xml] Severity Level WARNING Recurse Directories true Validation Details: PASS: file: *testDir*/bundle_clem/data/collection_1.0.xml Summary: 1 of 1 file(s) processed, 0 skipped 1 of 1 file(s) passed validation End of Report Step 3: the files with locally defined keywords (in this example, "img:") fail. PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-02T23:53:36Z Core Schemas [PDS4_OPS_0300a.xsd] Core Schematrons [PDS4_OPS_0300a.sch] Model Version 0300a Parameters: Targets [file: *testDir*/bundle_clem/] Severity Level WARNING Recurse Directories true File Filters Used [*.xml] Validation Details: PASS: file: *testDir*/bundle_clem/bundle_1.xml PASS: file: *testDir*/bundle_clem/data/collection_1.0.xml FAIL: file: *testDir*/bundle_clem/data/bi00_35n/bi03n003.xml ERROR line 71, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging_Instrument_Parameters'. ERROR line 77, 21: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Geometry'. ERROR line 86, 64: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Cartography'. FAIL: file: *testDir*/bundle_clem/data/bi00_35n/bi03n009.xml ERROR line 71, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging_Instrument_Parameters'. ERROR line 77, 21: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Geometry'. ERROR line 86, 64: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Cartography'. FAIL: file: *testDir*/bundle_clem/data/bi35_70n/bi38n065.xml ERROR line 71, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging_Instrument_Parameters'. ERROR line 77, 21: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Geometry'. ERROR line 86, 64: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be

found for element 'img:Cartography'.
FAIL: file: *testDir*/bundle_clem/data/bi35_70n/bi38n075.xml
ERROR line 71, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging_Instrument_Parameters'.
ERROR line 77, 21: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Geometry'.
ERROR line 86, 64: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Cartography'.
FAIL: file: *testDir*/bundle_clem/data/bi70_35s/bi38s245.xml
ERROR line 71, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging_Instrument_Parameters'.
ERROR line 77, 21: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Geometry'.
ERROR line 86, 64: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Cartography'.
FAIL: file: *testDir*/bundle_clem/data/bi70_35s/bi38s255.xml
ERROR line 71, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging_Instrument_Parameters'.
ERROR line 77, 21: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Geometry'.
ERROR line 86, 64: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Cartography'.
PASS: file: *testDir*/bundle_clem/document/collection_1.0.xml
PASS: file: *testDir*/bundle_clem/document/volinfo.xml
PASS: file: *testDir*/bundle_clem/miscellaneous/transfer_manifest.xml
PASS: file: *testDir*/bundle_clem/XML_Schema/collection_1.0.xml
PASS: file: *testDir*/bundle_clem/XML_Schema/imaging_dictionary.xml
PASS: file: *testDir*/bundle_clem/XML_Schema/PDS4_PDS_0300a.xml
Summary:
14 of 14 file(s) processed, 0 skipped
8 of 14 file(s) passed validation
End of Report

Step 4:

PDS Validate Tool Report
Configuration:
Version 1.4.1
Date 2013-12-02T23:55:31Z
Core Schematrons [PDS4_OPS_0300a.sch]
Model Version 0300a
Parameters:
Targets [file: *testDir*/bundle_clem/]
User Specified Schemas [bundle_clem/XML_Schema/imaging_dictionary.xsd, bundle_clem/XML_Schema/PDS4_PDS_0300a.xsd]
Severity Level WARNING
Recurse Directories true
File Filters Used [*.xml]
Validation Details:
PASS: file: *testDir*/bundle_clem/bundle_1.xml
PASS: file: *testDir*/bundle_clem/data/collection_1.0.xml
PASS: file: *testDir*/bundle_clem/data/bi00_35n/bi03n003.xml
PASS: file: *testDir*/bundle_clem/data/bi00_35n/bi03n009.xml
PASS: file: *testDir*/bundle_clem/data/bi35_70n/bi38n065.xml
PASS: file: *testDir*/bundle_clem/data/bi35_70n/bi38n075.xml
PASS: file: *testDir*/bundle_clem/data/bi70_35s/bi38s245.xml
PASS: file: *testDir*/bundle_clem/data/bi70_35s/bi38s255.xml
PASS: file: *testDir*/bundle_clem/document/collection_1.0.xml
PASS: file: *testDir*/bundle_clem/document/volinfo.xml
PASS: file: *testDir*/bundle_clem/miscellaneous/transfer_manifest.xml
PASS: file: *testDir*/bundle_clem/XML_Schema/collection_1.0.xml
PASS: file: *testDir*/bundle_clem/XML_Schema/imaging_dictionary.xml
PASS: file: *testDir*/bundle_clem/XML_Schema/PDS4_PDS_0300a.xml
Summary:
14 of 14 file(s) processed, 0 skipped
14 of 14 file(s) passed validation
End of Report

Comments	Results met success criteria. http://oodt.jpl.nasa.gov/jira/browse/PDS-85, created during testing of build 2c, requests a new feature: that validate tool 1) try the default schematron, and 2) upon

	failure, try the schematron listed in the file and note that in the output.
Date of Testing	2013.12.02
Test Personnel	Richard Chen

Test Case ID	PRV.2
Description	Verify that a referenced file exists.
Requirements	PASS L5.PRP.VA.10: The tool shall verify that a file exists when referenced from a product label.
Success Criteria	Validation tool succeeds if referenced file exists, throws an error if not
Test Steps	1. mv bundle_clem/data/collection_1.0.tab . 2. validate bundle_clem/data/collection_1.0.xml -m0300a 3. mv collection_1.0.tab bundle_clem/data/ 4. validate bundle_clem/data/collection_1.0.xml -m0300a References also consider <directory_path_name>, which can be absolute, relative, and with or without a trailing '/'. 5. diff testPrep/product_document/Product_Doc_bad.xml testPrep/product_document/Product_Doc_good.xml 6. validate -t testPrep/product_document/Product_Doc_bad.xml 7. validate -t testPrep/product_document/Product_Doc_good.xml
Test Results	Step 2: the referenced file was removed in step 1 PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-02T23:57:29Z Core Schemas [PDS4_OPS_0300a.xsd] Core Schematrons [PDS4_OPS_0300a.sch] Model Version 0300a Parameters: Targets [file: *testDir*/bundle_clem/data/collection_1.0.xml] Severity Level WARNING Recurse Directories true Validation Details: FAIL: file: *testDir*/bundle_clem/data/collection_1.0.xml ERROR line 103: URI reference does not exist: file: *testDir*/bundle_clem/data/collection_1.0.tab Summary: 1 of 1 file(s) processed, 0 skipped 0 of 1 file(s) passed validation End of Report Step 4: the referenced file was restored in step 3 PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-02T23:58:06Z Core Schemas [PDS4_OPS_0300a.xsd] Core Schematrons [PDS4_OPS_0300a.sch] Model Version 0300a Parameters: Targets [file: *testDir*/bundle_clem/data/collection_1.0.xml] Severity Level WARNING Recurse Directories true Validation Details: PASS: file: *testDir*/bundle_clem/data/collection_1.0.xml Summary: 1 of 1 file(s) processed, 0 skipped 1 of 1 file(s) passed validation End of Report Step 5: the first difference (trailing /) doesn't matter. The second does. 96c96 < <directory_path_name>meca_rdr_sis_files/</directory_path_name>

	--- > <directory_path_name>meca_rdr_sis_files</directory_path_name> 105c105 < <directory_path_name>/replaceWithFullPath</directory_path_name> --- > <directory_path_name> *testDir*/testPrep/product_document/meca_rdr_sis_files</directory_path_name> Step 6: _bad.xml fails because of a non-existent path PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-03T22:49:20Z Core Schemas [PDS4_PDS_1101.xsd] Core Schematrons [PDS4_PDS_1101.sch] Model Version 1101 Parameters: Targets [file: *testDir*/testPrep/product_document/Product_Doc_bad.xml] Severity Level WARNING Recurse Directories true Validation Details: FAIL: file: *testDir*/testPrep/product_document/Product_Doc_bad.xml ERROR line 99: URI reference does not exist: file:/replaceWithFullPath/image002.gif Summary: 1 of 1 file(s) processed, 0 skipped 0 of 1 file(s) passed validation End of Report Step 7: non-existent path has been replaced by a real path PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-03T22:50:03Z Core Schemas [PDS4_PDS_1101.xsd] Core Schematrons [PDS4_PDS_1101.sch] Model Version 1101 Parameters: Targets [file: *testDir*/testPrep/product_document/Product_Doc_good.xml] Severity Level WARNING Recurse Directories true Validation Details: PASS: file: *testDir*/testPrep/product_document/Product_Doc_good.xml Summary: 1 of 1 file(s) processed, 0 skipped 1 of 1 file(s) passed validation End of Report
Comments	Results met success criteria.
Date of Testing	2013.12.03
Test Personnel	Richard Chen

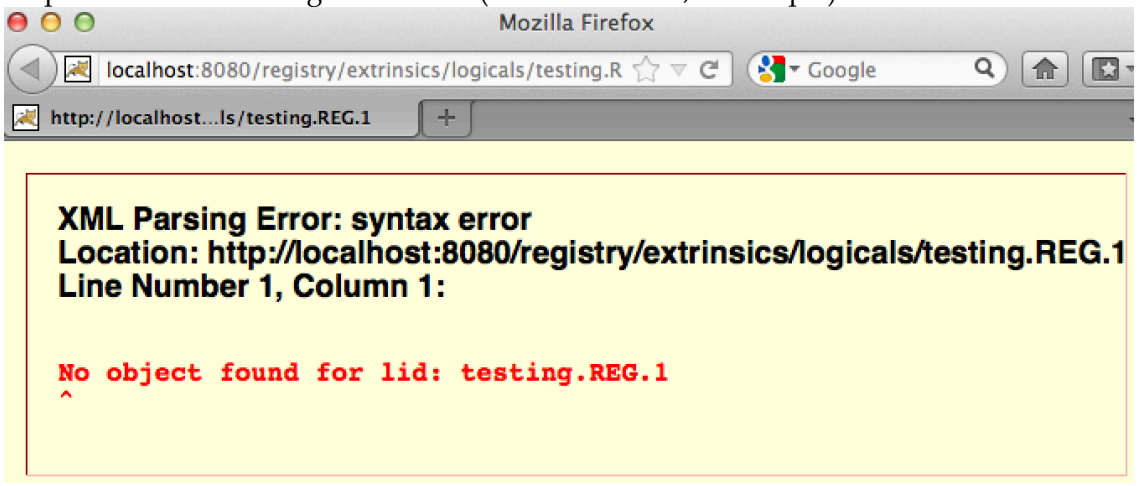
Test Case ID	PRV.4 *not ready for build 4a. This is reserved for future testing
Description	Merge label fragments
Requirements	SKIP L5.PRP.VA.4: The tool shall merge the contents of label fragments referenced by include elements with the contents of the parent label when validating a product.
Success Criteria	After merging, resulting label validates as if the fragments were physically merged.
Test Steps	
Test Results	
Comments	
Date of Testing	
Test Personnel	

Test Case ID	PRV.5
Description	Validate schemas
Requirements	PASS L5.PRP.VA.8: The tool shall verify that a schema file is valid.
Success Criteria	Validation tool verifies whether a schema is well formed.
Test Steps	The validate tool does not accept a schema as its target, i.e. this does not work validate PDS4_PDS_1100.xsd However, validate, when validating a label file, does complain when the schema is bad 1. validate bundle_geo_ra/bundle_1.xml -x PDS4_PDS_1100.xsd -S PDS4_PDS_1100.sch 2. diff -C1 PDS4_PDS_1100.xsd testPrep/PDS4_PDS_1100.bad.xsd 3. validate bundle_geo_ra/bundle_1.xml -x testPrep/PDS4_PDS_1100.bad.xsd -S PDS4_PDS_1100.sch
Test Results	Step 1: a normal validation with a schema specified on the command line PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-03T22:53:02Z Parameters: Targets [file: *testDir*/bundle_geo_ra/bundle_1.xml] User Specified Schemas [PDS4_PDS_1100.xsd] User Specified Schematrons [PDS4_PDS_1100.sch] Severity Level WARNING Recurse Directories true Validation Details: PASS: file: *testDir*/bundle_geo_ra/bundle_1.xml Summary: 1 of 1 file(s) processed, 0 skipped 1 of 1 file(s) passed validation End of Report Step 2: the first schema is good; the second has an important line commented out *** PDS4_PDS_1100.xsd 2013-11-26 11:31:13.000000000 -0800 --- testPrep/PDS4_PDS_1100.bad.xsd 2013-11-03 20:47:53.000000000 -0800 ********** *** 12,14 **** <xs:complexType name="Ingest_LDD"> ! <xs:annotation> <xs:documentation> The Ingest_LDD class provides a form for collecting class and attribute definitions. </xs:documentation> --- 12,14 ---- <xs:complexType name="Ingest_LDD"> ! <!--xs:annotation--> <xs:documentation> The Ingest_LDD class provides a form for collecting class and attribute definitions. </xs:documentation> Step 3: validate fails because of the schema's syntactic problems PDS Validate Tool Report Configuration: Version 1.4.1 Date 2013-12-03T22:54:25Z Parameters: Targets [file: *testDir*/bundle_geo_ra/bundle_1.xml] User Specified Schemas [testPrep/PDS4_PDS_1100.bad.xsd] User Specified Schematrons [PDS4_PDS_1100.sch] Severity Level WARNING Recurse Directories true Validation Details: FAIL: file: *testDir*/bundle_geo_ra/bundle_1.xml FATAL_ERROR line 15, 7: The element type "xs:complexType" must be terminated by the matching end-tag "</xs:complexType>". Summary: 1 of 1 file(s) processed, 0 skipped 0 of 1 file(s) passed validation

	End of Report
Comments	Results met success criteria.
Date of Testing	2013.12.03
Test Personnel	Richard Chen

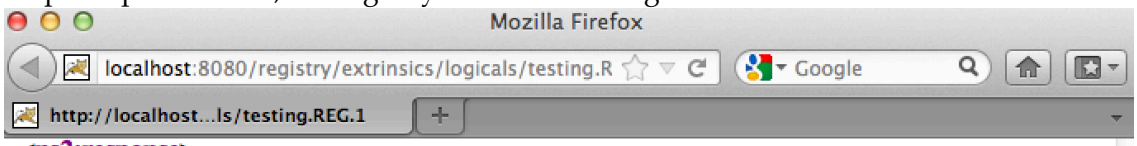
Test Case ID	PRV.6
Description	Accept schema file specified by file or directory
Requirements	PASS L5.PRP.VA.7: The tool shall accept the following as input for specifying the associated schema file(s)…
Success Criteria	Label file validates against the schema specified.
Test Steps	Step 4 of test PRV.1 and PRV.5 demonstrate this capability.
Test Results	Tested during PRV.1 and PRV.5
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

Test Case ID	REG.1
Description	Validate and accept metadata to register an artifact or modify an artifact's registration, query for a registered artifact, delete a registered artifact. Use the REST-based API.
Requirements	PASS L5.REG.1: The service shall accept artifact registrations. PASS L5.REG.4: The service shall accept metadata for a registered artifact in a defined format. PASS L5.REG.5: The service shall validate metadata for a registered artifact. PASS L5.REG.13: The service shall allow deletion of registered artifacts. PASS L5.REG.14: The service shall allow queries for registered artifacts. PASS L5.GEN.3: The system shall generate metrics regarding performance and activity.
Success Criteria	Registry service validates and accepts metadata for an artifact in a defined format, consistent with the appropriate schema for the artifact. Registering an Inventory artifact should allow locating and auditing the artifact. Registering a Dictionary artifact should be reflected in the Information Model. Registering a Document artifact, e.g. a schema, should store the file and make the document available. Registering a Service artifact should document and promote the service. Query and delete artifacts or provide error messages for unrecognized artifacts.
Test Steps	Clean database as described in RESETREGISTRY in Section 3.1 1. cd *testDir* 2. http://localhost:8080/registry/extrinsics/logicals/testing.REG.1 in a browser shows no current product has lid "testing.REG.1", which input files test.REG.1[ab].xml have. 3. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1a.xml http://localhost:8080/registry/extrinsics attempts to register the bad input file 4. Repeat step 2 to ensure lid still does not exist. 5. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1b.xml http://localhost:8080/registry/extrinsics registers a good input file 6. Repeat step 2 to see the lid 7. curl -X DELETE --verbose

	http://localhost:8080/registry/extrinsics/testing.REG.1.v1.0 8. Repeat step 2 to ensure lid no longer exists 9. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1c.xml http://localhost:8080/registry/extrinsics registers a good input file with different values for the phone numbers 10. Repeat step 2 to see the changed values
Test Results	Step 2: The error message should be (if lid does exist, run step 7):  Step 3: * About to connect() to localhost port 8080 (#0) * Trying ::1... * connected * Connected to localhost (::1) port 8080 (#0) > POST /registry/extrinsics HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5 > Host: localhost:8080 > Accept: */* > Content-type:application/xml > Content-Length: 653 * upload completely sent off: 653 out of 653 bytes < HTTP/1.1 400 Bad Request < Server: Apache-Coyote/1.1 < Content-Type: text/html;charset=utf-8 < Content-Length: 990 < Date: Mon, 04 Nov 2013 06:23:03 GMT < Connection: close * Closing connection #0 <html><head><title>Apache Tomcat/7.0.30 - Error report</title><style><!--H1 {font-family:Tahoma,Arial,sans-serif;color:white;background-color:#525D76;font-size:22px;} H2 {font-family:Tahoma,Arial,sans-serif;color:white;background-color:#525D76;font-size:16px;} H3 {font-family:Tahoma,Arial,sans-serif;color:white;background-color:#525D76;font-size:14px;} BODY {font-family:Tahoma,Arial,sans-serif;color:black;background-color:white;} B {font-family:Tahoma,Arial,sans-serif;color:white;background-color:#525D76;} P {font-family:Tahoma,Arial,sans-serif;background:white;color:black;font-size:12px;}A {color : black;}A.name {color : black;}HR {color : #525D76;}--></style> </head><body> HTTP Status 400 - Bad Request <HR size="1" noshade="noshade"> type Status report message <u>Bad Request</u> description <u>The request sent by the client was syntactically incorrect.</u> <HR size="1" noshade="noshade"> Apache Tomcat/7.0.30 </body></html> Step 4: Same as step 2 Step 5: * About to connect() to localhost port 8080 (#0) * Trying ::1... * connected * Connected to localhost (::1) port 8080 (#0) > POST /registry/extrinsics HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5 > Host: localhost:8080 > Accept: */* > Content-type:application/xml

> Content-Length: 629
* upload completely sent off: 629 out of 629 bytes
< HTTP/1.1 201 Created
< Server: Apache-Coyote/1.1
< Location: http://localhost:8080/registry/extrinsics/testing.REG.1.v1.0
< Content-Type: application/xml
< Transfer-Encoding: chunked
< Date: Mon, 04 Nov 2013 06:26:34 GMT
* Connection #0 to host localhost left intact
testing.REG.1.v1.0* Closing connection #0

Step 6: Upon success, the registry service returns good xml. In firefox:




```
- <ns2:response>
  - <ns2:results>
    - <ns2:extrinsicObject versionName="1.0" description="Stolen from http://pdscm/2010/registry
      /registry-service/operate/index.html with attribute lid above changed for uniqueness"
      status="Submitted" objectType="Product" name="Product 1234 v1" lid="testing.REG.1"
      home="http://localhost:8080/registry" guid="testing.REG.1.v1.0">
      - <ns2:slot name="last-name" id="141">
          <ns2:value>Doe</ns2:value>
        </ns2:slot>
      - <ns2:slot name="first-name" id="142">
          <ns2:value>John</ns2:value>
        </ns2:slot>
      - <ns2:slot name="phone" id="143">
          <ns2:value>(818)777-7777</ns2:value>
          <ns2:value>(818)888-8888</ns2:value>
        </ns2:slot>
      </ns2:extrinsicObject>
    </ns2:results>
  </ns2:response>
```


Step 7:

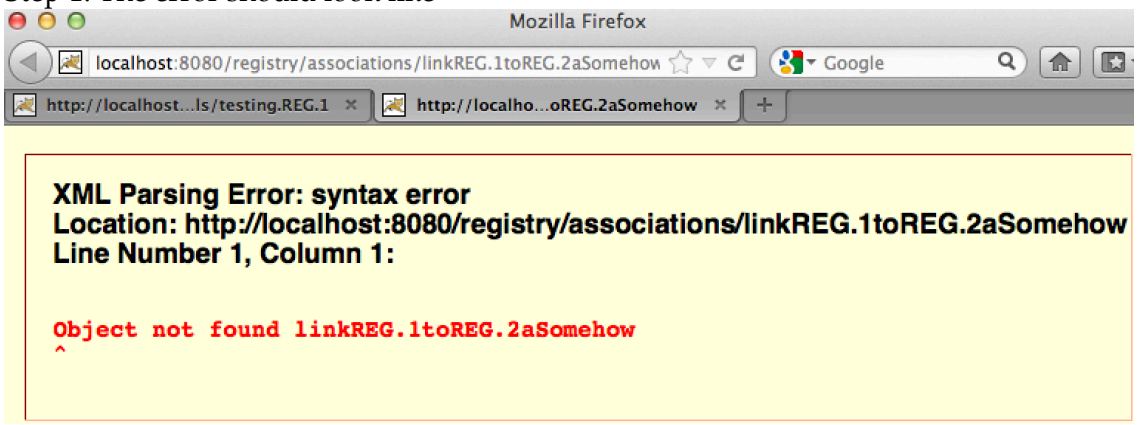
* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> DELETE /registry/extrinsics/testing.REG.1.v1.0 HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5
> Host: localhost:8080
> Accept: */*
< HTTP/1.1 200 OK
< Server: Apache-Coyote/1.1
< Content-Type: application/xml
< Content-Length: 0
< Date: Mon, 04 Nov 2013 06:27:52 GMT
* Connection #0 to host localhost left intact
* Closing connection #0

Step 8: Same as step 2

Step 9:

* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> POST /registry/extrinsics HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5
> Host: localhost:8080
> Accept: */*
> Content-type:application/xml
> Content-Length: 630
* upload completely sent off: 630 out of 630 bytes
< HTTP/1.1 201 Created
< Server: Apache-Coyote/1.1

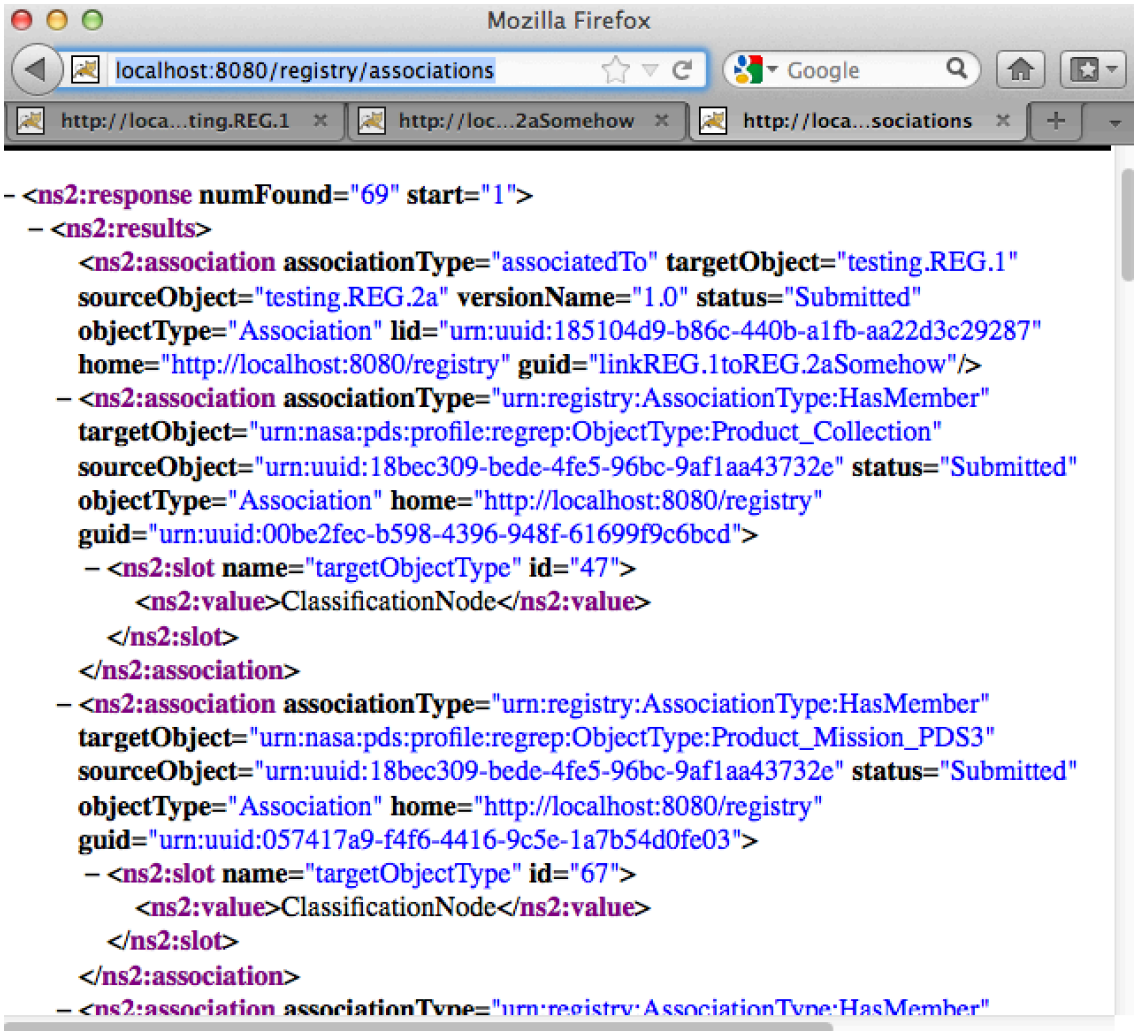
	< Location: http://localhost:8080/registry/extrinsics/testing.REG.1.v1.0 < Content-Type: application/xml < Transfer-Encoding: chunked < Date: Mon, 04 Nov 2013 06:29:02 GMT * Connection #0 to host localhost left intact testing.REG.1.v1.0* Closing connection #0 Step 10: Similar to step 6 but with different values for the phone numbers, i.e. from (818)777-7777 and (818)888-8888 to (818)222-2222 and (818)333-3333
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

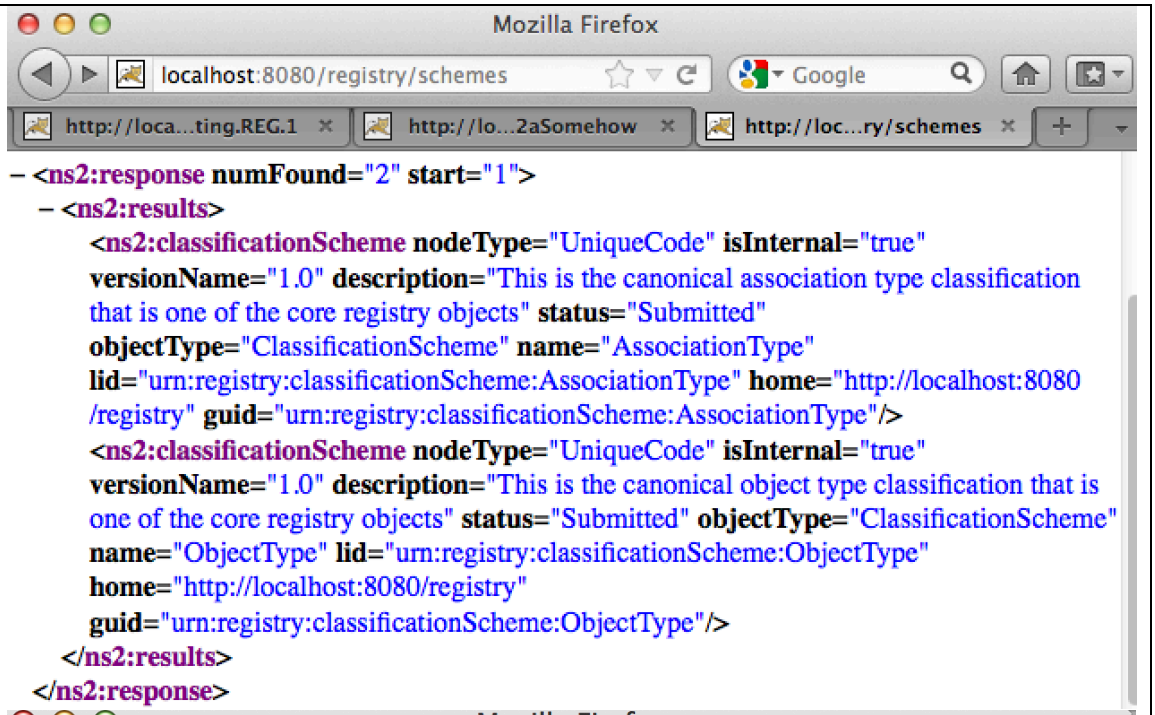
Test Case ID	REG.2
Description	Relate artifact registrations. Query and delete such associations.
Requirements	PASS L5.REG.2: The service shall provide a means for relating artifact registrations. PASS L5.REG.13: The service shall allow deletion of registered artifacts. PASS L5.REG.14: The service shall allow queries for registered artifacts.
Success Criteria	Registry service relates together multiple artifacts during their registrations, whether as a batch or as individual registrations. The associations are removed from the registry after deletion.
Test Steps	1. http://localhost:8080/registry/associations/linkREG.1toREG.2aSomehow shows no such associations 2. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.2.xml http://localhost:8080/registry/associations adds 1 association (from a nonexistent sourceLid) to desired targetLid 3. Repeat step 1 to see the association. Note the guid 4. curl -X DELETE -v http://localhost:8080/registry/associations/*guid* 5. Repeat step 1 to see no association
Test Results	Step 1: The error should look like  If not (i.e. if output looks like step 3's below curl -X DELETE -v http://localhost:8080/registry/associations/linkREG.1toREG.2aSomehow Step 2: Benign output messages without "ERROR" * About to connect() to localhost port 8080 (#0) * Trying ::1...* connected * Connected to localhost (::1) port 8080 (#0) > POST /registry/associations HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5 > Host: localhost:8080 > Accept: */* > Content-type:application/xml > Content-Length: 232

	* upload completely sent off: 232 out of 232 bytes < HTTP/1.1 201 Created < Server: Apache-Coyote/1.1 < Location: http://localhost:8080/registry/associations/linkREG.1toREG.2aSomehow < Content-Type: text/plain < Transfer-Encoding: chunked < Date: Mon, 04 Nov 2013 06:31:52 GMT * Connection #0 to host localhost left intact linkREG.1toREG.2aSomehow* Closing connection #0 Step 3:  <ns2:association associationType="associatedTo" targetObject="testing.REG.1" sourceObject="testing.REG.2a" versionName="1.0" status="Submitted" objectType="Association" lid="urn:uuid:8dd9d200-f112-420f-b313-1fd704da2ec2" home="http://localhost:8080/registry" guid="linkREG.1toREG.2aSomehow"/> Step 4: * About to connect() to localhost port 8080 (#0) * Trying ::1... * connected * Connected to localhost (::1) port 8080 (#0) > DELETE /registry/associations/linkREG.1toREG.2aSomehow HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5 > Host: localhost:8080 > Accept: */* < HTTP/1.1 200 OK < Server: Apache-Coyote/1.1 < Content-Length: 0 < Date: Mon, 04 Nov 2013 06:40:01 GMT * Connection #0 to host localhost left intact * Closing connection #0 Step 5: same as step 1
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

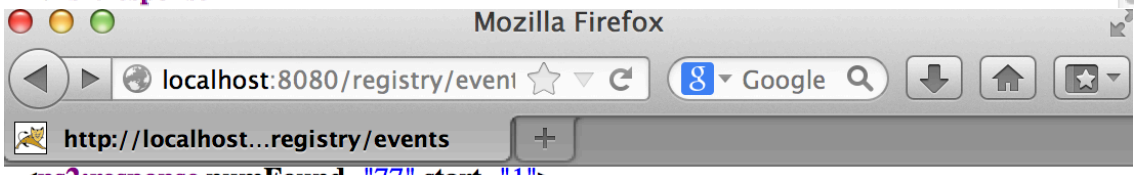
Test Case ID	REG.3
Description	Maintain policies for classes of artifacts, i.e. all classes of artifacts capture a base set of metadata, in the form of XML attributes: objectType, guid as well as metadata specific to each artifact class.
Requirements	PASS L5.REG.3: The system shall register products of a data delivery into an instance of the registry.
Success Criteria	Registry service defines separate policies for each class of artifact. Changes to the policies of a class can reflect in the validation of a registered artifact in that class.
Test Steps	In a browser, http://localhost:8080/registry/extrinsics http://localhost:8080/registry/associations http://localhost:8080/registry/services http://localhost:8080/registry/schemes http://localhost:8080/registry/events http://localhost:8080/registry/packages
Test Results	Specific results will differ, but every item in every class has XML attributes objectType, guid. Each class may have others attributes such as lid, name, home.


Mozilla Firefox
localhost:8080/registry/extrinsics
Google
http://localho...testing.REG.1
http://localh...EG.2aSomehow
http://localho...try/extrinsics
- <ns2:response numFound="1" start="1">
- <ns2:results>
- <ns2:extrinsicObject versionName="1.0" description="Stolen from http://pdscm/2010/registry/registry-service/operate/index.html with attribute lid above changed for uniqueness" status="Submitted" objectType="Product" name="Product 1234 v1" lid="testing.REG.1" home="http://localhost:8080/registry" guid="testing.REG.1.v1.0">
- <ns2:slot name="last-name" id="146">
<ns2:value>Doe</ns2:value>
</ns2:slot>
- <ns2:slot name="first-name" id="147">
<ns2:value>John</ns2:value>
</ns2:slot>
- <ns2:slot name="phone" id="148">
<ns2:value>(818)222-2222</ns2:value>
<ns2:value>(818)333-3333</ns2:value>
</ns2:slot>
</ns2:extrinsicObject>
</ns2:results>
</ns2:response>

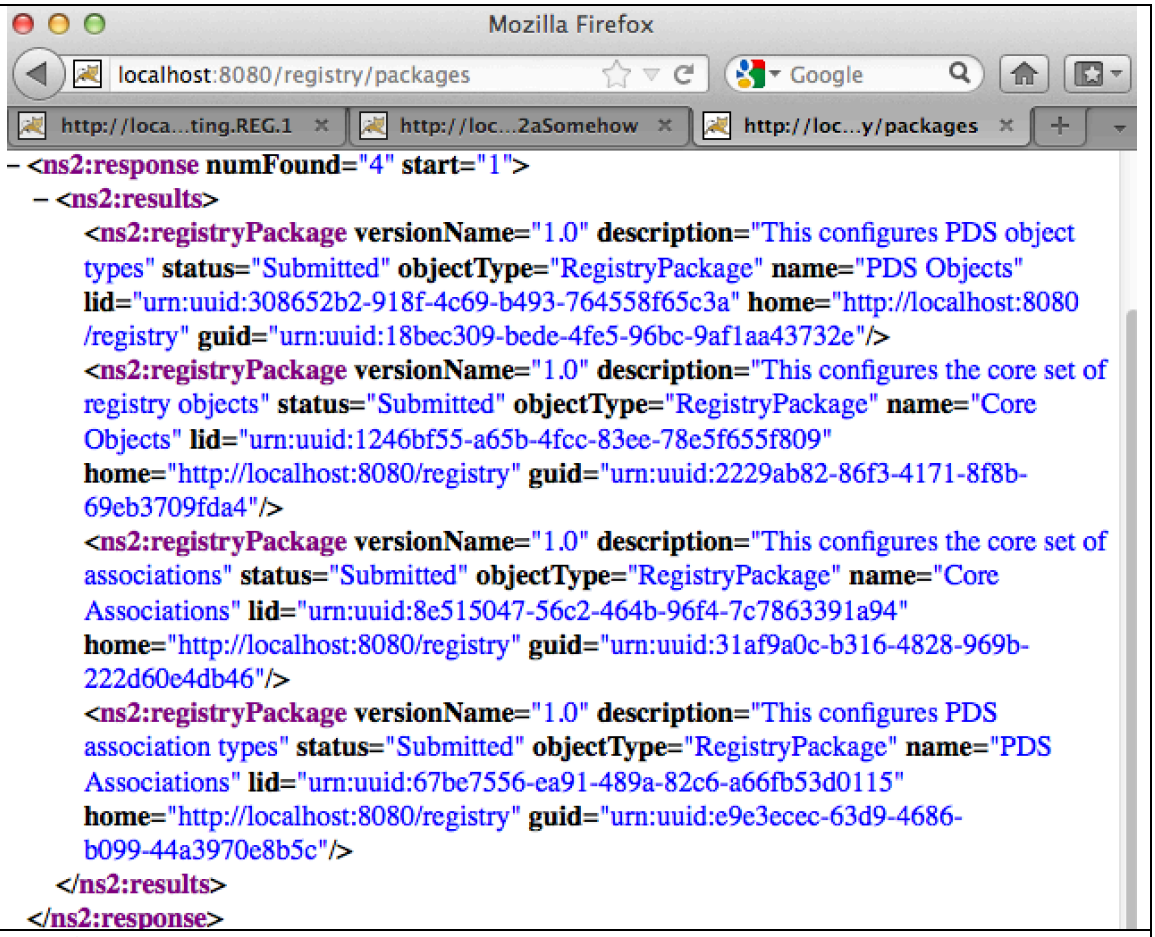

Mozilla Firefox
localhost:8080/registry/associations
Google
http://loca...ting.REG.1
http://loc...2aSomehow
http://loca...sociations
- <ns2:response numFound="69" start="1">
- <ns2:results>
<ns2:association associationType="associatedTo" targetObject="testing.REG.1" sourceObject="testing.REG.2a" versionName="1.0" status="Submitted" objectType="Association" lid="urn:uuid:185104d9-b86c-440b-a1fb-aa22d3c29287" home="http://localhost:8080/registry" guid="linkREG.1toREG.2aSomehow"/>
- <ns2:association associationType="urn:registry:AssociationType:HasMember" targetObject="urn:nasa:pds:profile:regrep:ObjectType:Product_Collection" sourceObject="urn:uuid:18bec309-bede-4fe5-96bc-9af1aa43732e" status="Submitted" objectType="Association" home="http://localhost:8080/registry" guid="urn:uuid:00be2fec-b598-4396-948f-61699f9c6bcd">
- <ns2:slot name="targetObjectType" id="47">
<ns2:value>ClassificationNode</ns2:value>
</ns2:slot>
</ns2:association>
- <ns2:association associationType="urn:registry:AssociationType:HasMember" targetObject="urn:nasa:pds:profile:regrep:ObjectType:Product_Mission_PDS3" sourceObject="urn:uuid:18bec309-bede-4fe5-96bc-9af1aa43732e" status="Submitted" objectType="Association" home="http://localhost:8080/registry" guid="urn:uuid:057417a9-f4f6-4416-9c5e-1a7b54d0fe03">
- <ns2:slot name="targetObjectType" id="67">
<ns2:value>ClassificationNode</ns2:value>
</ns2:slot>
</ns2:association>



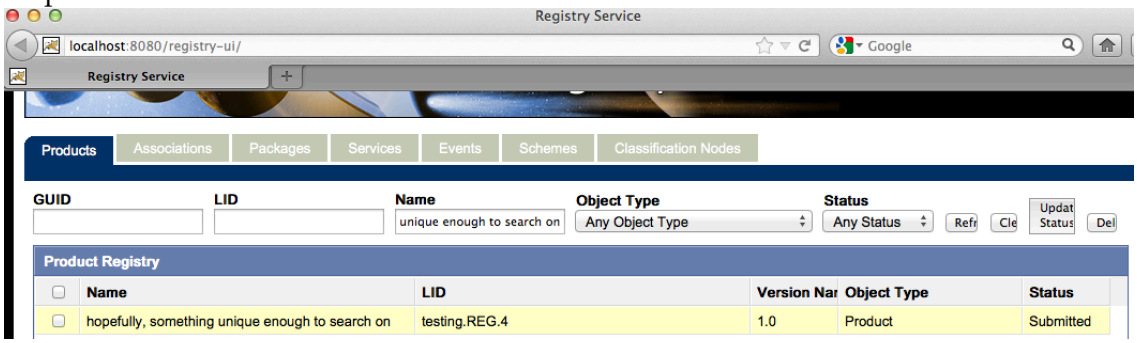
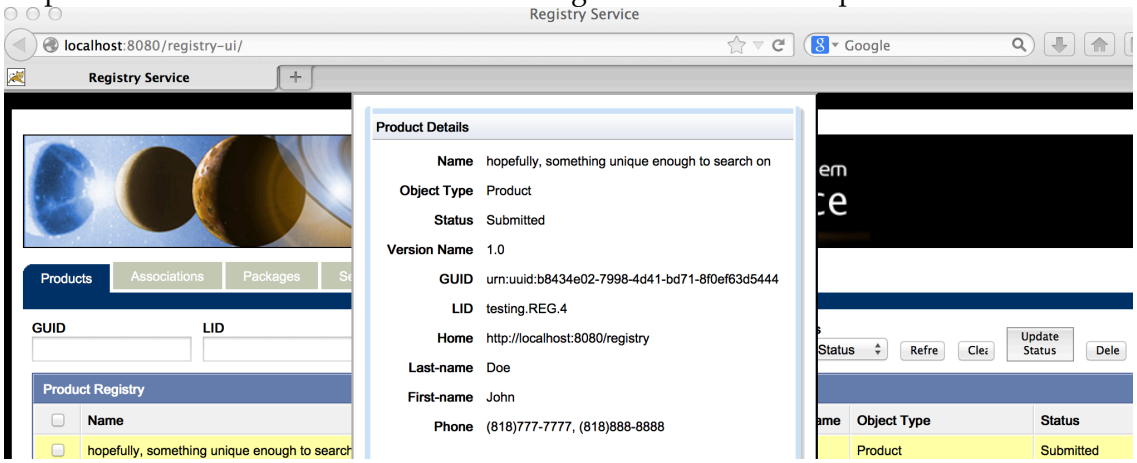

```
- <ns2:response numFound="2" start="1">
  - <ns2:results>
      <ns2:classificationScheme nodeType="UniqueCode" isInternal="true"
      versionName="1.0" description="This is the canonical association type classification
      that is one of the core registry objects" status="Submitted"
      objectType="ClassificationScheme" name="AssociationType"
      lid="urn:registry:classificationScheme:AssociationType" home="http://localhost:8080
      /registry" guid="urn:registry:classificationScheme:AssociationType"/>
      <ns2:classificationScheme nodeType="UniqueCode" isInternal="true"
      versionName="1.0" description="This is the canonical object type classification that is
      one of the core registry objects" status="Submitted" objectType="ClassificationScheme"
      name="ObjectType" lid="urn:registry:classificationScheme:ObjectType"
      home="http://localhost:8080/registry"
      guid="urn:registry:classificationScheme:ObjectType"/>
    </ns2:results>
  </ns2:response>
```



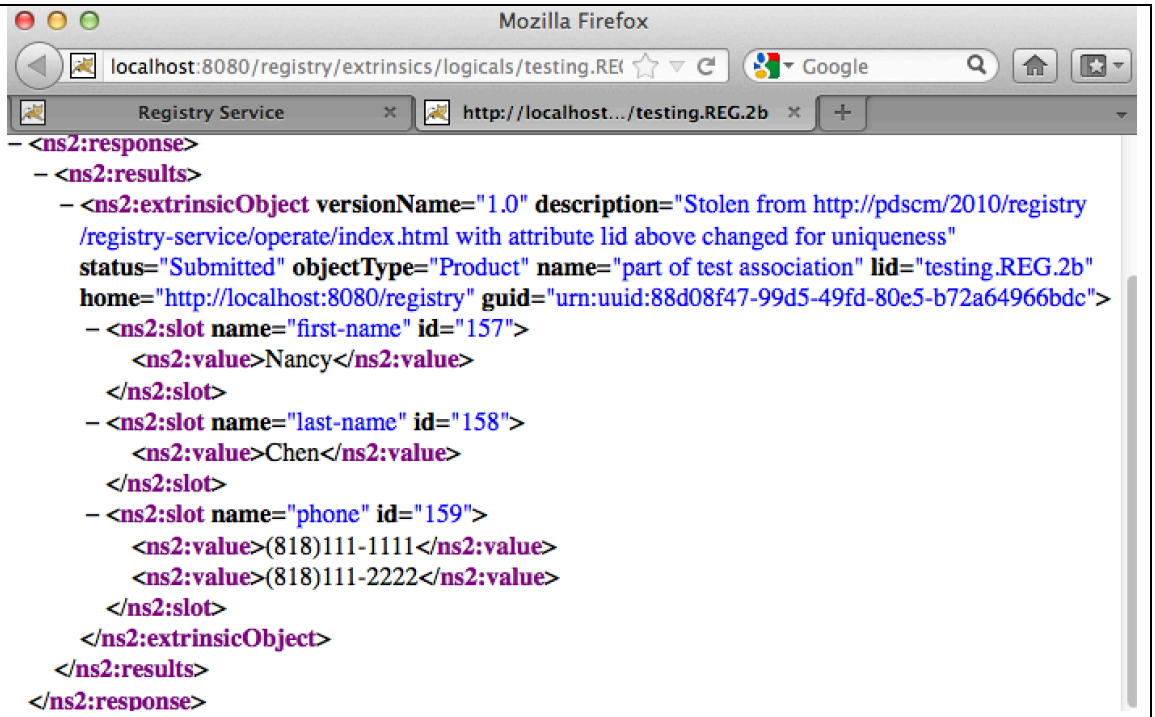

```
- <ns2:response numFound="77" start="1">
  - <ns2:results>
    - <ns2:auditableEvent user="Unknown" timestamp="2013-11-03T22:40:01.090-08:00"
      requestId="deleteObjectById linkREG.1toREG.2aSomehow" eventType="Deleted"
      objectType="AuditableEvent" home="http://localhost:8080/registry"
      guid="urn:uuid:bf31c402-2f37-41bb-9f25-73de97ddc0c5">
      - <ns2:slot name="affectedObjectTypes" id="151">
          <ns2:value>Association</ns2:value>
        </ns2:slot>
        <ns2:affectedObject>linkREG.1toREG.2aSomehow</ns2:affectedObject>
      </ns2:auditableEvent>
    - <ns2:auditableEvent user="Unknown" timestamp="2013-11-03T22:31:52.831-08:00"
      requestId="publishObject linkREG.1toREG.2aSomehow" eventType="Created"
      objectType="AuditableEvent" home="http://localhost:8080/registry"
      guid="urn:uuid:085a8243-c1d6-4566-9eb7-19efc664617a">
      - <ns2:slot name="affectedObjectTypes" id="150">
          <ns2:value>Association</ns2:value>
        </ns2:slot>
        <ns2:affectedObject>linkREG.1toREG.2aSomehow</ns2:affectedObject>
      </ns2:auditableEvent>
    - <ns2:auditableEvent user="Unknown" timestamp="2013-11-03T22:29:02.575-08:00"
      requestId="publishObject testing.REG.1.v1.0" eventType="Created"
      objectType="AuditableEvent" home="http://localhost:8080/registry"
```

	
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

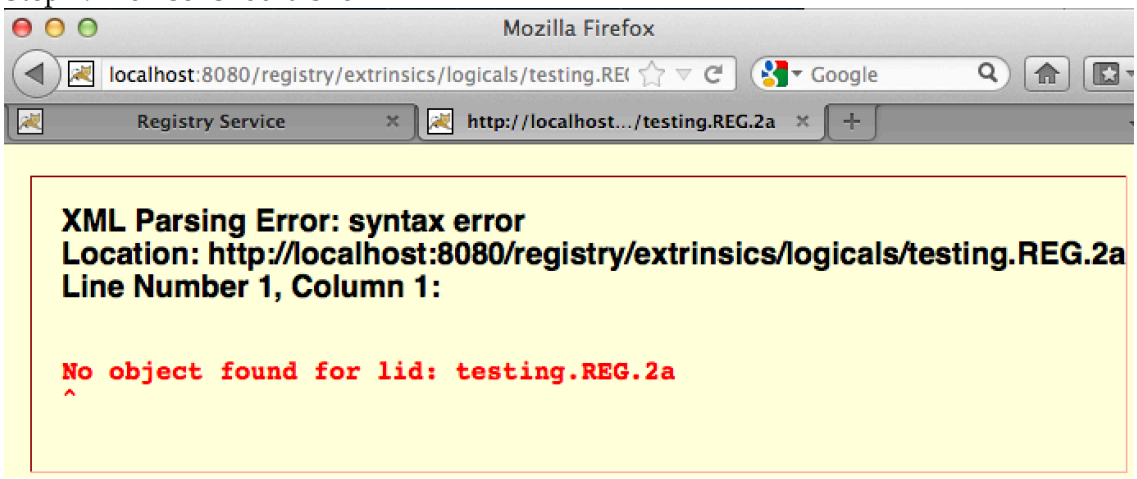
Test Case ID	REG.4
Description	Assign a global unique identifier to a registered artifact with no global unique identifier, query for the registered artifact, delete the registered artifact.
Requirements	PASS L5.REG.6: The service shall assign a global unique identifier to a registered artifact. PASS L5.REG.13: The service shall allow deletion of registered artifacts. PASS L5.REG.14: The service shall allow queries for registered artifacts.
Success Criteria	Registry service assigns each registered artifact, including multiple versions of an artifact, a global unique identifier.
Test Steps	1. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.4.xml http://localhost:8080/registry/extrinsics 2. In a browser, http://localhost:8080/registry-ui 3. Under "Name", enter "hopefully, something unique enough to search on" from test.REG.4.xml. Click "Refresh" 4. Click anywhere on the row to see Product Details including GUID 5. curl -X DELETE -v http://localhost:8080/registry/extrinsics/*guidFromLastStep* 6. Click the "Refresh" button again.
Test Results	Step 1: Note the value (an assigned LID) of "Location:" in the positive message: * About to connect() to localhost port 8080 (#0) * Trying ::1... * connected * Connected to localhost (::1) port 8080 (#0) > POST /registry/extrinsics HTTP/1.1

	> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8r zlib/1.2.5 > Host: localhost:8080 > Accept: */* > Content-type:application/xml > Content-Length: 668 * upload completely sent off: 668 out of 668 bytes < HTTP/1.1 201 Created < Server: Apache-Coyote/1.1 < Location: http://localhost:8080/registry/extrinsics/urn:uuid:dadf8220-6a3a-4430-9ca0-253875e513a7 < Content-Type: application/xml < Transfer-Encoding: chunked < Date: Mon, 04 Nov 2013 06:56:21 GMT * Connection #0 to host localhost left intact urn:uuid:b8434e02-7998-4d41-bd71-8f0ef63d5444* Closing connection #0 Step 3:  Step 4: Note that the GUID matches the assigned GUID from Step 1  Step 5: * About to connect() to localhost port 8080 (#0) * Trying ::1... * connected * Connected to localhost (::1) port 8080 (#0) > DELETE /registry/extrinsics/urn:uuid:b8434e02-7998-4d41-bd71-8f0ef63d5444 HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5 > Host: localhost:8080 > Accept: */* < HTTP/1.1 200 OK < Server: Apache-Coyote/1.1 < Content-Type: application/xml < Content-Length: 0 < Date: Mon, 04 Nov 2013 07:00:28 GMT * Connection #0 to host localhost left intact * Closing connection #0 Step 6: The row should be gone
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

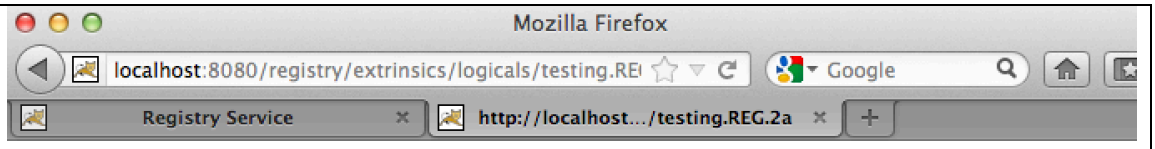
Test Case ID	REG.5
Description	Assign a version to a registered artifact based on its unique identifier
Requirements	PASS L5.REG.7: The service shall assign a version to a registered artifact based on its logical identifier.
Success Criteria	Registry service assigns each registered artifact, especially multiple versions of an artifact, a version identifier, derivable from its logical identifier.
Test Steps	1. http://localhost:8080/registry/extrinsics/logicals/testing.REG.2b shows no current product with lid "testing.REG.2b" 2. Register a product with no versionId attribute curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.5a.xml http://localhost:8080/registry/extrinsics 3. Repeat step 1. Note that versionName is 1.0 As of build 4a, versionName is independent of extrinsicObject's attributes versionId, name, and guid.
Test Results	Step 1:  Step 2: * About to connect() to localhost port 8080 (#0) * Trying ::1... * connected * Connected to localhost (::1) port 8080 (#0) > POST /registry/extrinsics HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8r zlib/1.2.5 > Host: localhost:8080 > Accept: */* > Content-type:application/xml > Content-Length: 641 * upload completely sent off: 641 out of 641 bytes < HTTP/1.1 201 Created < Server: Apache-Coyote/1.1 < Location: http://localhost:8080/registry/extrinsics/urn:uuid:ae201537-5333-4c18-851a-c52a07ab1f22 < Content-Type: application/xml < Transfer-Encoding: chunked < Date: Mon, 04 Nov 2013 07:04:10 GMT * Connection #0 to host localhost left intact urn:uuid:ae201537-5333-4c18-851a-c52a07ab1f22* Closing connection #0 Step 3: Note that versionName=1.0 even though input file had no versionId attribute

	
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

Test Case ID	REG.6
Description	Allow replacement, approval, deprecation, undeprecation, and verification of registered artifacts. The Tomcat server access log lists the search.
Requirements	PASS L5.REG.9: The service shall allow updates to registered artifacts. PASS L5.REG.10: The service shall allow approval of registered artifacts. PASS L5.REG.11: The service shall allow deprecation of registered artifacts. PASS L5.REG.12: The service shall allow undeprecation of registered artifacts. PASS L5.GEN.6: Applications shall generate metrics in a format suitable for ingestion by the Report Service.
Success Criteria	Registry service provides these standard functions with expected results. Initial registration results in an artifact being in an unapproved state. Also, the Tomcat server access log lists the actions.
Test Steps	1. In a browser, http://localhost:8080/registry/extrinsics/logicals/testing.REG.2a shows no current product has lid “testing.REG.2a”. 2. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.6a.xml http://localhost:8080/registry/extrinsics 3. Repeat step 1 to see the lid 4. In a browser, http://localhost:8080/registry-ui/ Under “LID”, enter “testing.REG.2a”. Click “Refresh 5. curl -X POST -H "Content-type:application/xml" -v http://localhost:8080/registry/extrinsics/testing.REG.2a.v1.0/approve 6. In a browser, http://localhost:8080/registry-ui/, click “Refresh” 7. curl -X POST -H "Content-type:application/xml" -v http://localhost:8080/registry/extrinsics/testing.REG.2a.v1.0/deprecate 8. Repeat step 4 to see the Status 9. curl -X POST -H "Content-type:application/xml" -v

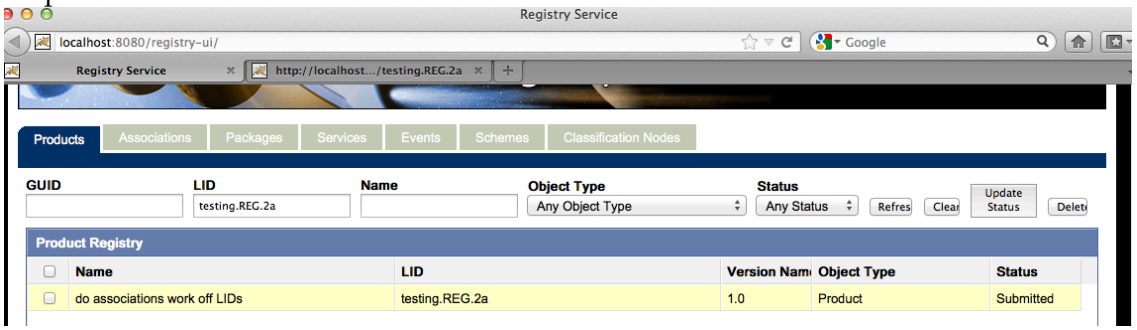
<table>
<tr><td></td><td>http://localhost:8080/registry/extrinsics/testing.REG.2a.v1.0/undeprecate
10. Repeat step 4 to see the Status
The above actions get into the Tomcat server log, which the report service can process.
11. grep testing.REG.2a $CATALINA_HOME/logs/localhost_access_log.yyyy-mm-dd.txt</td></tr>
<tr><td>Test Results</td><td>Step 1: Browser should show
 

If not
curl -X DELETE -v
http://localhost:8080/registry/extrinsics/testing.REG.2a.v1.0
Step 2: Benign output messages without “ERROR”
* About to connect() to localhost port 8080 (#0)
* Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> POST /registry/extrinsics HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8x zlib/1.2.5
> Host: localhost:8080
> Accept: */*
> Content-type:application/xml
> Content-Length: 645
* upload completely sent off: 645 out of 645 bytes
< HTTP/1.1 201 Created
< Server: Apache-Coyote/1.1
< Location: http://localhost:8080/registry/extrinsics/testing.REG.2a.v1.0
< Content-Type: application/xml
< Transfer-Encoding: chunked
< Date: Mon, 04 Nov 2013 07:07:34 GMT
* Connection #0 to host localhost left intact
testing.REG.2a.v1.0* Closing connection #0
Step 3:</td></tr>
</table>




```
– <ns2:response>
  – <ns2:results>
    – <ns2:extrinsicObject versionName="1.0" description="Stolen from http://pdscm/2010/registry
      /registry-service/operate/index.html with attribute lid above changed for uniqueness"
      status="Submitted" objectType="Product" name="do associations work off LIDs"
      lid="testing.REG.2a" home="http://localhost:8080/registry" guid="testing.REG.2a.v1.0">
      – <ns2:slot name="phone" id="167">
          <ns2:value>(818)000-1111</ns2:value>
          <ns2:value>(818)000-2222</ns2:value>
        </ns2:slot>
      – <ns2:slot name="last-name" id="168">
          <ns2:value>Chen</ns2:value>
        </ns2:slot>
      – <ns2:slot name="first-name" id="169">
          <ns2:value>Min</ns2:value>
        </ns2:slot>
      </ns2:extrinsicObject>
    </ns2:results>
  </ns2:response>
```


Step 4:



Step 5:

```
* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> POST /registry/extrinsics/testing.REG.2a.v1.0/approve HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8r zlib/1.2.5
> Host: localhost:8080
> Accept: */*
> Content-type:application/xml
< HTTP/1.1 200 OK
< Server: Apache-Coyote/1.1
< Content-Type: application/xml
< Content-Length: 0
< Date: Mon, 04 Nov 2013 07:10:22 GMT
* Connection #0 to host localhost left intact
* Closing connection #0
```

Step 6: same as Step 4 but “Submitted” becomes “Approved”

Step 7:

```
* About to connect() to localhost port 8080 (#0)
*   Trying ::1...
* connected
* Connected to localhost (::1) port 8080 (#0)
> POST /registry/extrinsics/testing.REG.2a.v1.0/deprecate HTTP/1.1
> User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8r zlib/1.2.5
> Host: localhost:8080
> Accept: */*
> Content-type:application/xml
```

	< HTTP/1.1 200 OK < Server: Apache-Coyote/1.1 < Content-Type: application/xml < Content-Length: 0 < Date: Mon, 04 Nov 2013 07:11:24 GMT * Connection #0 to host localhost left intact * Closing connection #0 Step 8: same as Step 4 but "Submitted" becomes "Deprecated" Step 9: * About to connect() to localhost port 8080 (#0) * Trying ::1... * connected * Connected to localhost (::1) port 8080 (#0) > POST /registry/extrinsics/testing.REG.2a.v1.0/undeprecate HTTP/1.1 > User-Agent: curl/7.24.0 (x86_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8r zlib/1.2.5 > Host: localhost:8080 > Accept: */* > Content-type:application/xml < HTTP/1.1 200 OK < Server: Apache-Coyote/1.1 < Content-Type: application/xml < Content-Length: 0 < Date: Mon, 04 Nov 2013 07:12:13 GMT * Connection #0 to host localhost left intact * Closing connection #0 Step 10: same as Step 4 Step 11: 0:0:0:0:0:0:0:1%0 - - [03/Nov/2013:23:07:08 -0800] "GET /registry/extrinsics/logicals/testing.REG.2a HTTP/1.1" 404 50 0:0:0:0:0:0:0:1%0 - - [03/Nov/2013:23:08:26 -0800] "GET /registry/extrinsics/logicals/testing.REG.2a HTTP/1.1" 200 776 127.0.0.1 - - [03/Nov/2013:23:09:21 -0800] "GET /registry/extrinsics?sort=guid&start=1&name=testing.REG.2a&queryOp=AND&rows=20 HTTP/1.1" 200 162 127.0.0.1 - - [03/Nov/2013:23:09:54 -0800] "GET /registry/extrinsics?lid=testing.REG.2a&sort=guid&start=1&queryOp=AND&rows=20 HTTP/1.1" 200 799 127.0.0.1 - - [03/Nov/2013:23:09:54 -0800] "GET /registry/extrinsics?lid=testing.REG.2a&sort=guid&start=1&queryOp=AND&rows=1 HTTP/1.1" 200 799 0:0:0:0:0:0:0:1%0 - - [03/Nov/2013:23:10:22 -0800] "POST /registry/extrinsics/testing.REG.2a.v1.0/approve HTTP/1.1" 200 - 127.0.0.1 - - [03/Nov/2013:23:11:02 -0800] "GET /registry/extrinsics?lid=testing.REG.2a&sort=guid&start=1&queryOp=AND&rows=20 HTTP/1.1" 200 798 127.0.0.1 - - [03/Nov/2013:23:11:02 -0800] "GET /registry/extrinsics?lid=testing.REG.2a&sort=guid&start=1&queryOp=AND&rows=1 HTTP/1.1" 200 798 0:0:0:0:0:0:0:1%0 - - [03/Nov/2013:23:11:24 -0800] "POST /registry/extrinsics/testing.REG.2a.v1.0/deprecate HTTP/1.1" 200 - 127.0.0.1 - - [03/Nov/2013:23:11:53 -0800] "GET /registry/extrinsics?lid=testing.REG.2a&sort=guid&start=1&queryOp=AND&rows=20 HTTP/1.1" 200 800 127.0.0.1 - - [03/Nov/2013:23:11:53 -0800] "GET /registry/extrinsics?lid=testing.REG.2a&sort=guid&start=1&queryOp=AND&rows=1 HTTP/1.1" 200 800 0:0:0:0:0:0:0:1%0 - - [03/Nov/2013:23:12:13 -0800] "POST /registry/extrinsics/testing.REG.2a.v1.0/undeprecate HTTP/1.1" 200 - 127.0.0.1 - - [03/Nov/2013:23:12:57 -0800] "GET /registry/extrinsics?lid=testing.REG.2a&sort=guid&start=1&queryOp=AND&rows=20 HTTP/1.1" 200 799 127.0.0.1 - - [03/Nov/2013:23:12:57 -0800] "GET /registry/extrinsics?lid=testing.REG.2a&sort=guid&start=1&queryOp=AND&rows=1 HTTP/1.1" 200 799
Comments	Results met success criteria.
Date of Testing	2013.11.03

Test Personnel	Richard Chen

Test Case ID	REG.7 *not ready for build 4a. This is reserved for future testing
Description	Enable replication of registry contents.
Requirements	SKIP L5.REG.15: The service shall enable replication of registry contents with another instance of the service.
Success Criteria	Contents of the registry are duplicated on a separate machine.
Test Steps	
Test Results	
Comments	
Date of Testing	
Test Personnel	

Test Case ID	REG.8 *not ready for build 4a. This is reserved for future testing
Description	Verify registry contents.
Requirements	SKIP L5.REG.16: The service shall enable verification of registry contents.
Success Criteria	Contents and checksums of the registry artifacts match what have been ingested.
Test Steps	
Test Results	
Comments	
Date of Testing	
Test Personnel	

Test Case ID	REG.9
Description	Test scalability of registry.
Requirements	PASS No specific functional requirement. This is a performance test case.
Success Criteria	Performance of registry in ingesting and viewing artifacts remains acceptable under logarithmic increases in volume.
Test Steps	This requires python to be installed on the local machine and possible editing of stressTest.py to change the location of the python executable. Step 3 is configurable. 500000 registrations (as shown) may take 3 days. 1. cd *testDir*/bin 2. ./stressTest.py 3. ./stressTest.py -v -n500000 > ../out.txt 4. grep Time ../out.txt
Test Results	Step 2: stressTesting.T000000.v1.0 stressTesting.T000001.v1.0 stressTesting.T000002.v1.0 REGSTR 3 good. Time(sec): avg=0.017 median=0.010 stdDev=0.01184 sum=0.1 <?xml version="1.0" encoding="UTF-8" standalone="yes"?><ns2:extrinsicObject xmlns:ns2="http://registry.pds.nasa.gov" versionName="1.0" description="Stolen from

	http://pdscm/2010/registry/registry-service/operate/index.html with attribute lid above changed for uniqueness" status="Submitted" objectType="Product" name="Stress The Registry " lid="stressTesting.T000000" home="http://localhost:8080/registry" guid="stressTesting.T000000.v1.0"><ns2:slot name="last-name" id="13044"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot name="cannotPossibleBeAnExistingSlot" id="13045"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot name="first-name" id="13046"><ns2:value>John</ns2:value></ns2:slot><ns2:slot name="phone" id="13047"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot></ns2:extrinsicObject> <?xml version="1.0" encoding="UTF-8" standalone="yes"?><ns2:extrinsicObject xmlns:ns2="http://registry.pds.nasa.gov" versionName="1.0" description="Stolen from http://pdscm/2010/registry/registry-service/operate/index.html with attribute lid above changed for uniqueness" status="Submitted" objectType="Product" name="Stress The Registry " lid="stressTesting.T000001" home="http://localhost:8080/registry" guid="stressTesting.T000001.v1.0"><ns2:slot name="last-name" id="13049"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot name="cannotPossibleBeAnExistingSlot" id="13050"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot name="first-name" id="13051"><ns2:value>John</ns2:value></ns2:slot><ns2:slot name="phone" id="13052"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot></ns2:extrinsicObject> <?xml version="1.0" encoding="UTF-8" standalone="yes"?><ns2:extrinsicObject xmlns:ns2="http://registry.pds.nasa.gov" versionName="1.0" description="Stolen from http://pdscm/2010/registry/registry-service/operate/index.html with attribute lid above changed for uniqueness" status="Submitted" objectType="Product" name="Stress The Registry " lid="stressTesting.T000002" home="http://localhost:8080/registry" guid="stressTesting.T000002.v1.0"><ns2:slot name="last-name" id="13054"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot name="cannotPossibleBeAnExistingSlot" id="13055"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot name="first-name" id="13056"><ns2:value>John</ns2:value></ns2:slot><ns2:slot name="phone" id="13057"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot></ns2:extrinsicObject> VIEW 3 good. Time(sec): avg=0.010 median=0.010 stdDev=0.00003 sum=0.0 stressTesting.T000000.v1.0 deleted stressTesting.T000001.v1.0 deleted stressTesting.T000002.v1.0 deleted DELETE 3 good. Time(sec): avg=0.035 median=0.026 stdDev=0.02011 sum=0.1 Step 4: REGSTR 500000 good. Time(sec): avg=0.008 median=0.005 stdDev=0.13068 sum=3878.9 VIEW 500000 good. Time(sec): avg=0.004 median=0.004 stdDev=0.00196 sum=2097.1 DELETE 500000 good. Time(sec): avg=0.005 median=0.005 stdDev=0.00424 sum=2733.4
Comments	Results met success criteria.
Date of Testing	2013.11.04
Test Personnel	Richard Chen

Test Case ID	RPT.1
Description	Various requirements regarding reporting
Requirements	PASS L5.RPT.1: The service shall support periodic submission of metrics. PASS L5.RPT.2: The service shall allow the submission of metrics in the form of a log file. PASS L5.RPT.3: The service shall utilize a secure transfer protocol for transferring log files across the Internet. PASS L5.RPT.4: The service shall support log files from the following sources… PASS L5.RPT.5: The service shall discover product-related information by querying the Registry service. PASS L5.RPT.6: The service shall aggregate and store the metrics in a repository. PASS L5.RPT.7: The service shall control access to the user interface and metrics repository. PASS L5.RPT.8: The service shall allow users to tailor reports and report templates as follows... PASS L5.RPT.9: The service shall allow users to save report templates for reuse. PASS L5.RPT.10: The service shall allow periodic generation of reports from saved templates. PASS L5.RPT.11: The service shall export reports in the following formats...
Success Criteria	Following operator configuration of content, representation, filter, and scope of reports and report templates, Report Service receives metrics periodically in log files generated by web and FTP servers, PDS4 services, and node-specific services. Tools can view the repository to compare against log. Report Service queries Registry Service

	for metrics regarding products instead of transfers or views. Tools can view the repository to compare against the registry. Report Service authenticates for proper access, and reports unsuccessful attempts. Generated reports, even when generated from saved templates, should match configuration and meet the export format specified.
Test Steps	Commercial applications, in particular Sawmill, provide the functionality required. Verification of installation suffices.
Test Results	Report Service was installed
Comments	Results met success criteria.
Date of Testing	2013.10
Test Personnel	Duc Truong

Test Case ID	SCMA.1
Description	Verify various change requests made to the Information Model schema and schemarons.
Requirements	PASS 1.3.3: PDS will provide criteria for validating archival products
Success Criteria	Validate tool accepts (or rejects) constructs deemed as valid (or invalid), primarily through software change requests.
Test Steps	Document testScma.docx describes the testing of the PDS4 schema and schematron.
Test Results	Document testScma.docx includes the test results of testing the PDS4 schema and schematron.
Comments	Results met success criteria.
Date of Testing	2013.12.03
Test Personnel	Richard Chen

Test Case ID	SEC.1
Description	Various requirements regarding security
Requirements	PASS L5.SEC.1: The service shall authenticate a user given identifying credentials for that user. PASS L5.SEC.2: The service shall encrypt the transmission of identifying credentials across the network. PASS L5.SEC.3: The service shall authorize an authenticated user for access to a controlled capability. PASS L5.SEC.4: The service shall allow an operator of the system to create, update or delete a user identity. PASS L5.SEC.5: The service shall capture identifying information associated with a user identity. PASS L5.SEC.6: The service shall allow an operator of the system to create, update or delete a group identity. PASS L5.SEC.7: The service shall allow an operator of the system to add or remove a user from a group.
Success Criteria	Security service provides standard functions. Tools to view identities verify each activity. Security service allows an operator of the system to add or remove a user from a group. The user should subsequently be able or unable to access capabilities specific to the group. Security service captures identifying information. Tools to view identities show the information. Captured network packets show encryption, or trust that security service's protocol encrypts. Security service authorizes valid users, denies invalid users.
Test Steps	(From http://pds-engineering.jpl.nasa.gov/pds2010/development/4.0.0/security/) The Security Service provides the authentication and authorization functions for the PDS4 system. The intent of this service is to control access to interfaces and services

	that require authentication and authorization (e.g., Monitor, Report, Registry interfaces, etc.).
Test Results	The functionality for this service is satisfied by the open source software package OpenDS, which is a directory service supporting the Lightweight Directory Access Protocol (LDAP).
Comments	Results met success criteria.
Date of Testing	2013.11.03
Test Personnel	Richard Chen

Test Case ID	SRCH.1 *not ready for build 4a. This is reserved for future testing
Description	Degrade gracefully on archaic browsers.
Requirements	SKIP L5.SCH.2: The service shall degrade gracefully on browsers that lack modern features and not depend on them for operation.
Success Criteria	Using an archaic browser to search does not freeze the browser.
Test Steps	
Test Results	
Comments	
Date of Testing	
Test Personnel	

Test Case ID	SRCH.2
Description	Comply with Section 508 and adhere to WCAG level A
Requirements	PASS L5.SCH.3: The service's browser-based user interface shall be Section 508 compliant and adhere to WCAG … PASS L5.GEN.9: Applications shall meet Section 508 compliance guidelines.
Success Criteria	PDS home page successfully passes through JPL website release process.
Test Steps	Submit PDS portal to JPL document review office to get approval for release
Test Results	JPL approved the release result PDS portal made available to general public
Comments	Results met success criteria.
Date of Testing	2013.10
Test Personnel	Duc Truong

Test Case ID	SRCH.3
Description	Provide HTTP-based API to enter queries and return results. The browser utilizes the REST-based API. The Tomcat server access log lists the search.
Requirements	PASS L5.SCH.4: The service shall provide a programmatic interface for entering of queries and return of search results that communicates over HTTP for use by client applications developed by PDS, PDS nodes, and others. PASS L5.GEN.3: Services shall have an application programming interface. PASS L5.GEN.5: Services shall generate metrics in a format suitable for ingestion by the Report Service.
Success Criteria	Receives correct search results after using HTTP-based API.
Test Steps	This test is best run on an operational machine or after harvesting a large number of files including context products, e.g. HVT.3. If running after HVT.3, first:

search-core -H *binDir*/search-service/pds -p *binDir*/search-core/conf/pds/pds3/core.properties

The search-core above may take an hour.

1. http://localhost:8080/search-service/pds/search?q=cassini cda
2. In the center of http://localhost:8080/search-ui, type "cassini cda" (without quotes) and hit the "Search" button

The search-ui gets into the Tomcat server log, which the report service can process.

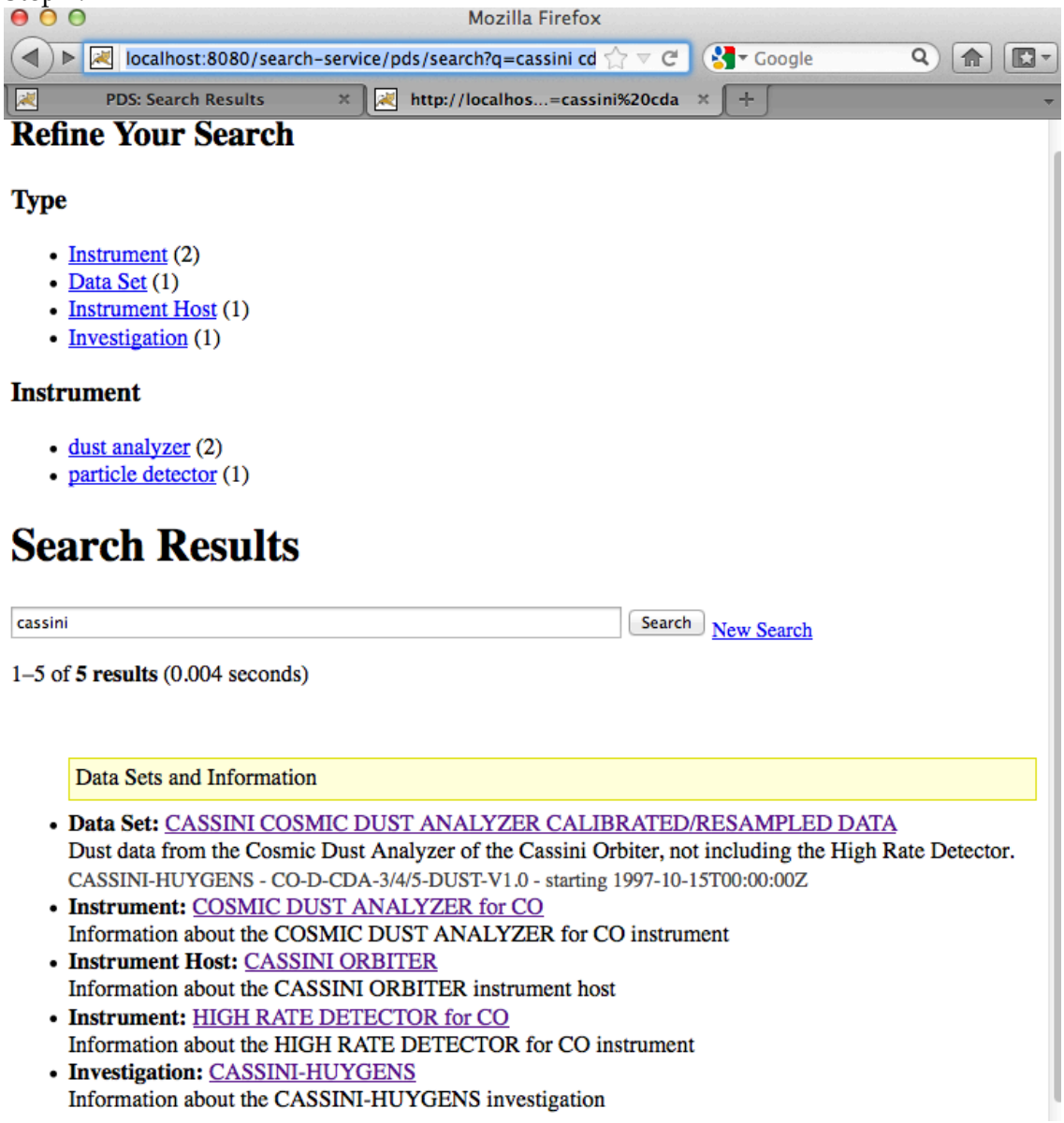
3. grep cassini $CATALINA_HOME/logs/localhost_access_log.*yyyy-mm-dd*.txt

Note that search-ui filters results, e.g. superseded datasets; search-service does not

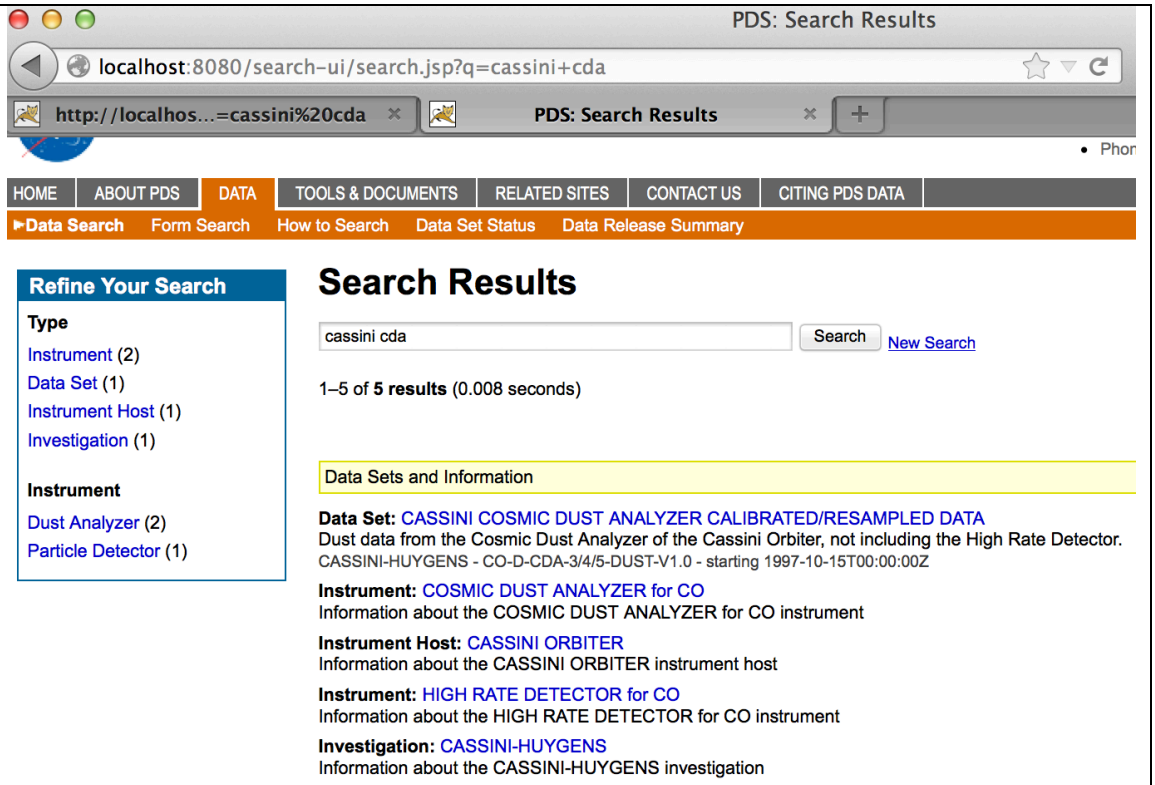
4. http://localhost:8080/search-service/pds/search?q=cassini hrd
5. In http://localhost:8080/search-ui, type "cassini hrd"

Test Results

Step 1:



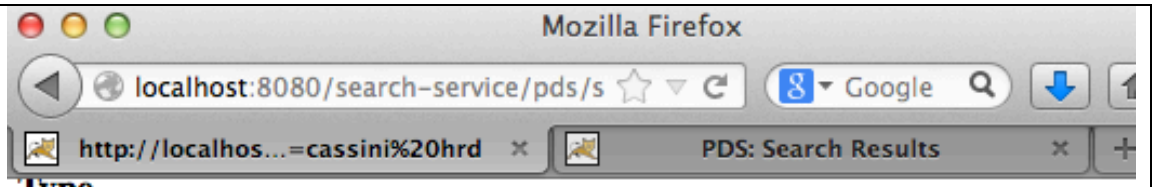
Step 2:



Step 3:

127.0.0.1 - - [03/Nov/2013:23:50:19 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:50:30 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:50:48 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:51:00 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:52:22 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:52:27 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:52:31 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:52:45 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:52:54 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:53:11 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:54:25 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:54:32 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:54:38 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543
127.0.0.1 - - [03/Nov/2013:23:54:51 -0800] "GET

	/registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:55:10 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:55:29 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:56:55 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:57:19 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:57:27 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:57:40 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:57:47 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:57:57 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:58:04 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:58:10 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:58:26 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:58:33 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:58:57 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:59:26 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:59:33 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:59:40 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:59:50 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 127.0.0.1 - - [03/Nov/2013:23:59:56 -0800] "GET /registry/extrinsics?lid=urn:nasa:pds:context_pds3:investigation:mission.cassini-huygens&sort=guid&start=1&queryOp=AND&rows=100 HTTP/1.1" 200 117543 *testDir*> Step 4:



Type

- Data Set (12)
- Instrument (2)

Target

- calibration (12)
- other (12)

Instrument

- particle detector (13)
- dust analyzer (1)

Search Results

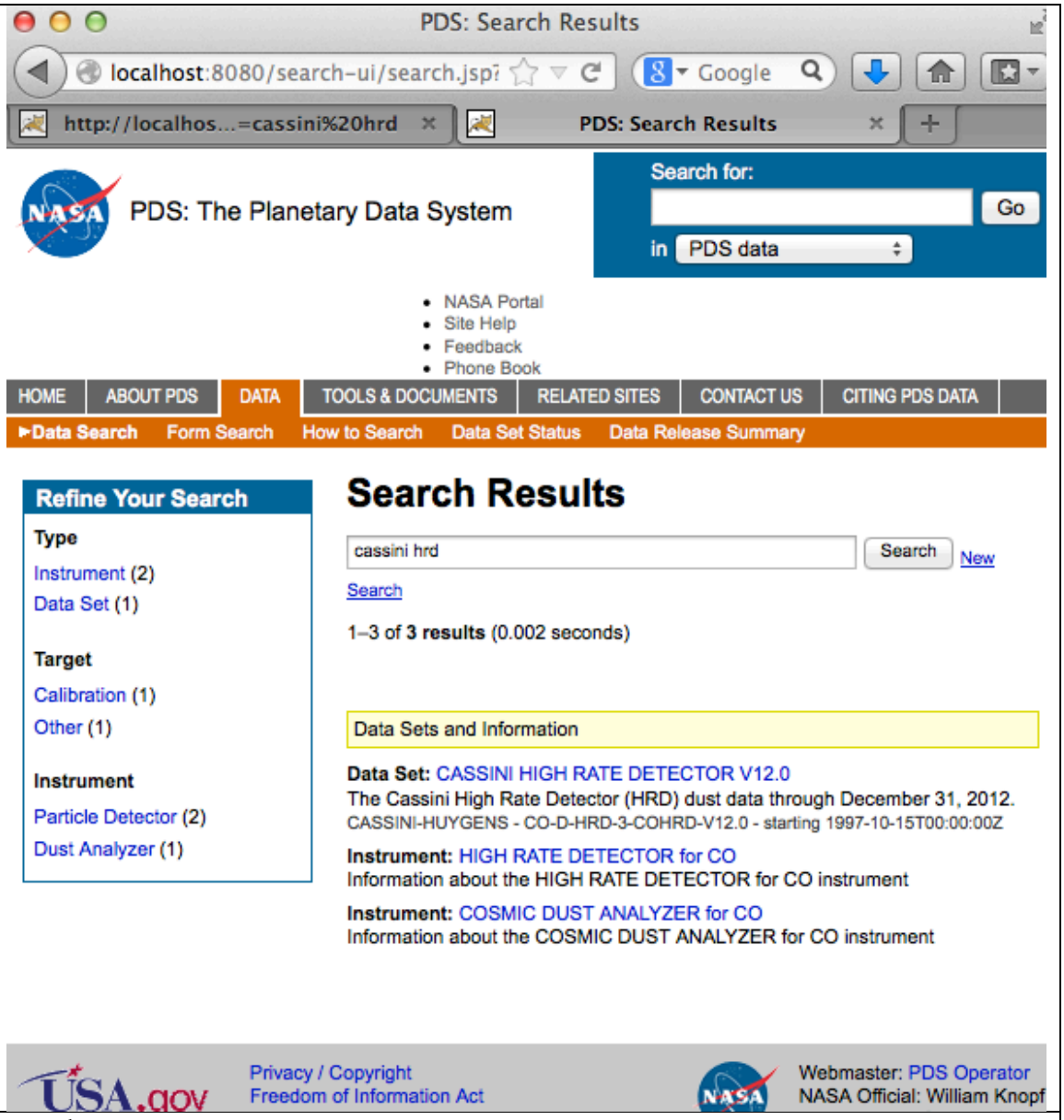
cassini hrd Search New Search

1–14 of **14 results** (0.002 seconds)

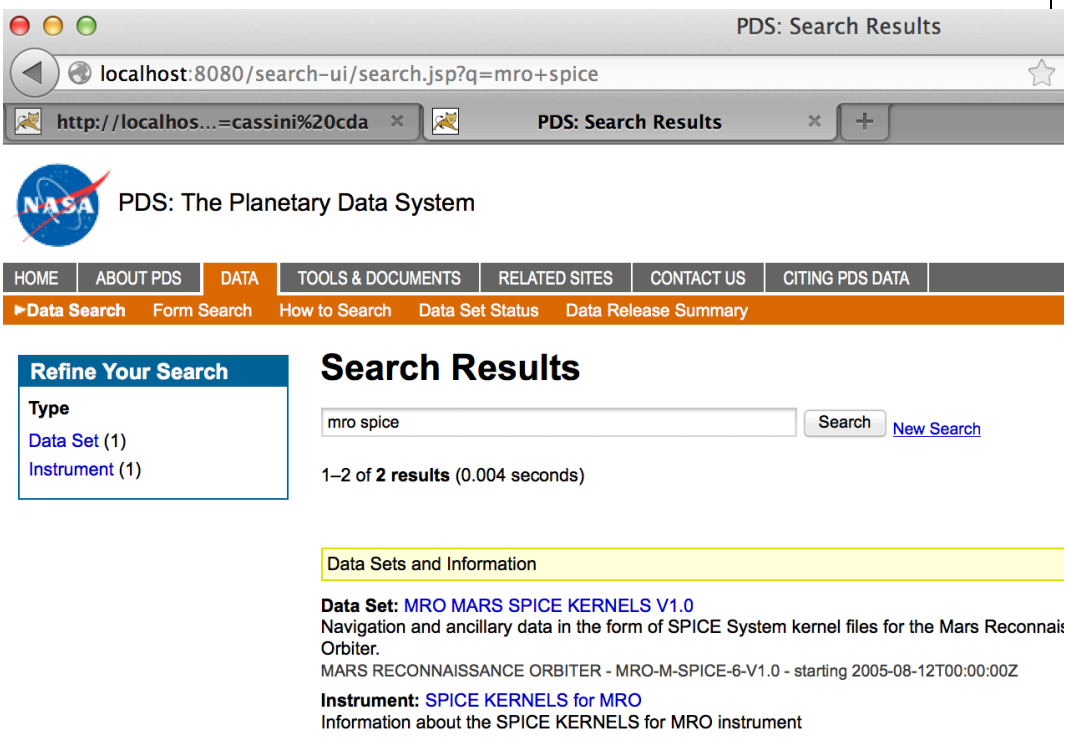
Data Sets and Information

- **Data Set:** CASSINI HIGH RATE DETECTOR V10.0
  The Cassini High Rate Detector (HRD) dust data through July 18, 2011.
  CASSINI-HUYGENS - CO-D-HRD-3-COHRD-V10.0 - starting 1997-10-15T00:00:00Z
- **Data Set:** CASSINI HIGH RATE DETECTOR V6.0
  The Cassini High Rate Detector (HRD) dust data through Oct. 6, 2009.
  CASSINI-HUYGENS - CO-D-HRD-3-COHRD-V6.0 - starting 1997-10-15T00:00:00Z
- **Data Set:** CASSINI HIGH RATE DETECTOR V11.0
  The Cassini High Rate Detector (HRD) dust data through December 31, 2011.
  CASSINI-HUYGENS - CO-D-HRD-3-COHRD-V11.0 - starting 1997-10-15T00:00:00Z
- **Data Set:** CASSINI HIGH RATE DETECTOR V1.0
  The Cassini High Rate Detector (HRD) dust data through Dec. 31, 2006.
  CASSINI-HUYGENS - CO-D-HRD-3-COHRD-V1.0 - starting 1997-10-15T00:00:00Z
- **Data Set:** CASSINI HIGH RATE DETECTOR V8.0

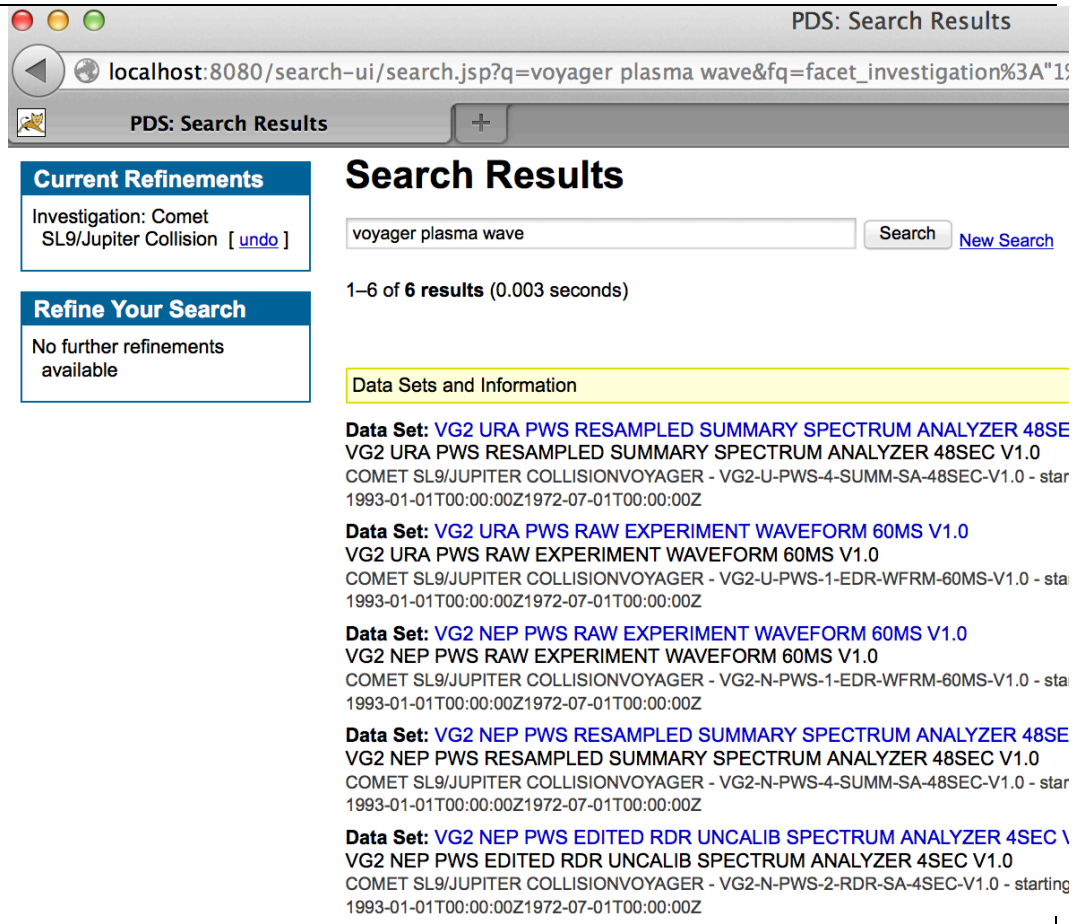
Step 5:

	
Comments	Results met success criteria.
Date of Testing	2013.11.04
Test Personnel	Richard Chen

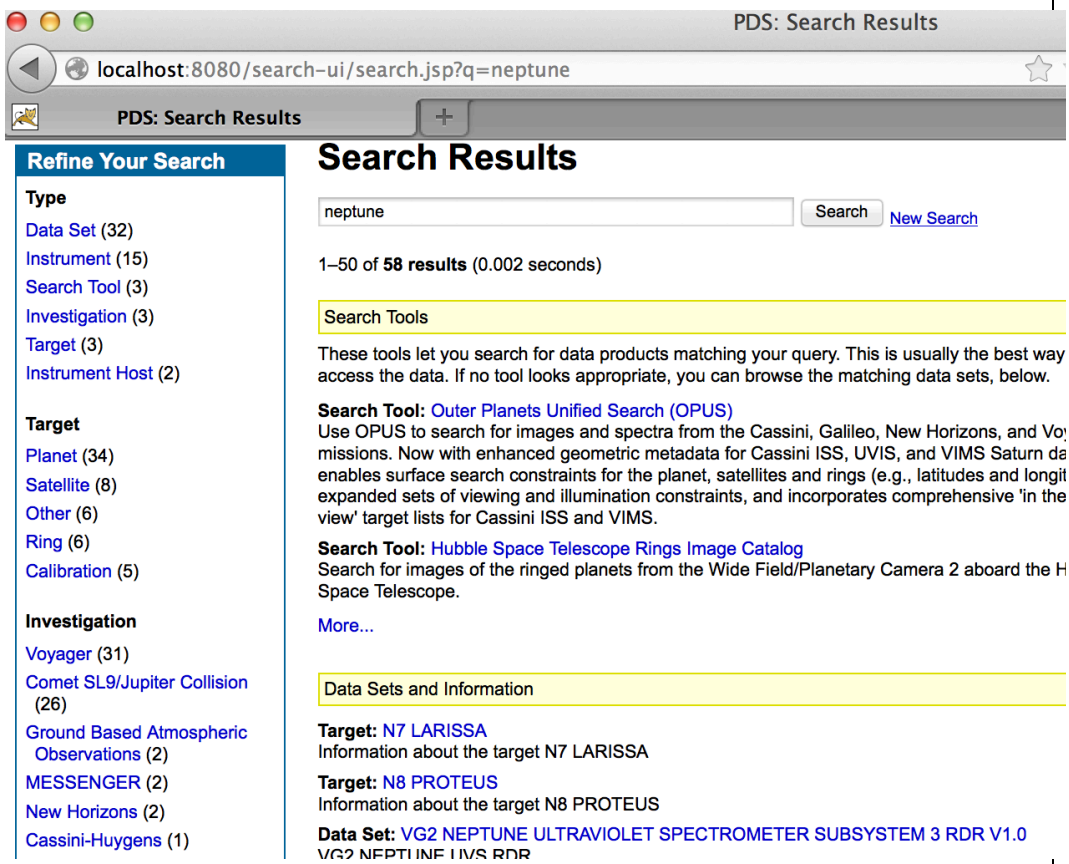
Test Case ID	SRCH.5
Description	Search based on a sequence of open text keywords. Do so in a browser.
Requirements	PASS L5.SCH.1: The service shall provide a user interface for entering of queries and display of search results PASS L5.SCH.6: The service shall support searching by accepting criteria as a sequence of open text keywords.
Success Criteria	Receives reasonable results based on text such as "Cassini". Also, the Tomcat server access log lists the searched data.
Test Steps	This test is best run on an operational machine or after harvesting a large number of files including context products, e.g. HVT.3. If running after HVT.3, first: search-core -H *binDir*/search-service/pds -p *binDir*/search-core/conf/pds/pds3/core.properties The search-core above may take an hour.

	In http://localhost:8080/search-ui, type 1. mro spice 2. voyager plasma wave. In Refine Your Search, click "Comet SL9/Jupiter Collision (6)" 3. mars digital elevation maps 4. neptune 5. jupiter images 6. corona 7. NEAR-A-SPICE-6-V1.0 (a specific data set ID)
Test Results	1.  2.

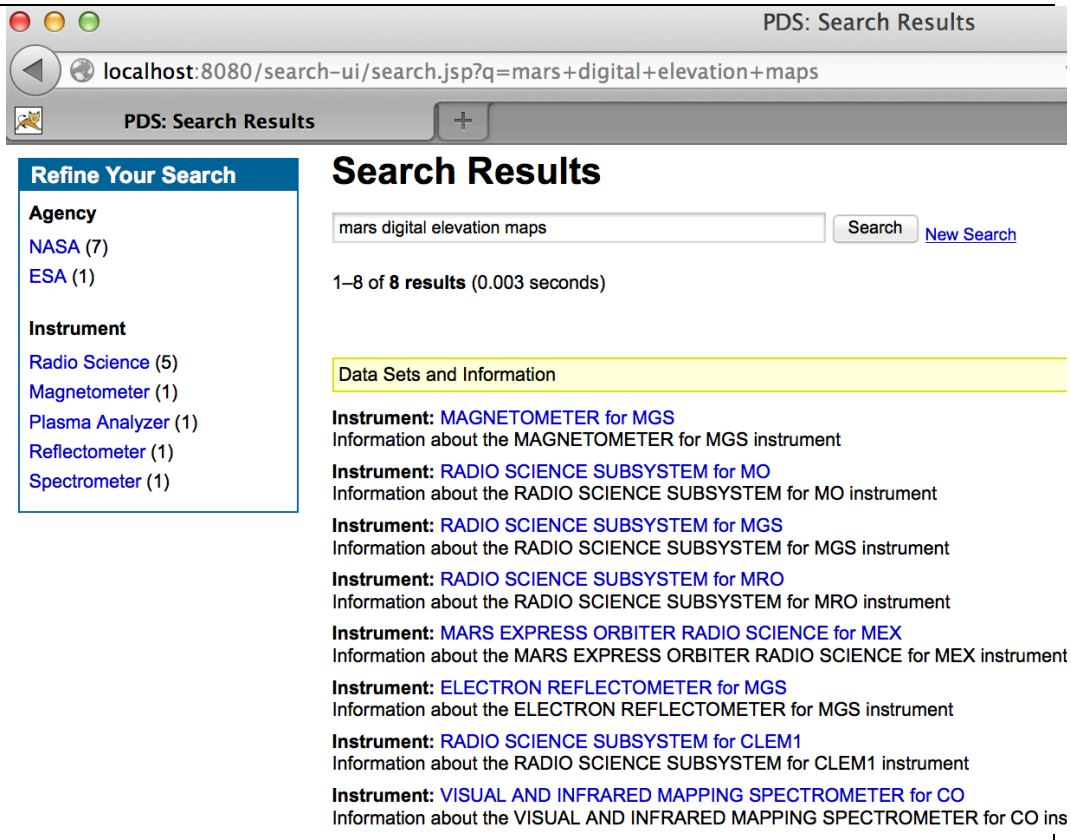
3.


PDS: Search Results
localhost:8080/search-ui/search.jsp?q=voyager plasma wave&fq=facet_investigation%3A"1
PDS: Search Results
Current Refinements
Investigation: Comet SL9/Jupiter Collision [undo]
Refine Your Search
No further refinements available
Search Results
voyager plasma wave
Search
New Search
1–6 of 6 results (0.003 seconds)
Data Sets and Information
Data Set: VG2 URA PWS RESAMPLED SUMMARY SPECTRUM ANALYZER 48SE
VG2 URA PWS RESAMPLED SUMMARY SPECTRUM ANALYZER 48SEC V1.0
COMET SL9/JUPITER COLLISIONVOYAGER - VG2-U-PWS-4-SUMM-SA-48SEC-V1.0 - star
1993-01-01T00:00:00Z1972-07-01T00:00:00Z
Data Set: VG2 URA PWS RAW EXPERIMENT WAVEFORM 60MS V1.0
VG2 URA PWS RAW EXPERIMENT WAVEFORM 60MS V1.0
COMET SL9/JUPITER COLLISIONVOYAGER - VG2-U-PWS-1-EDR-WFRM-60MS-V1.0 - sta
1993-01-01T00:00:00Z1972-07-01T00:00:00Z
Data Set: VG2 NEP PWS RAW EXPERIMENT WAVEFORM 60MS V1.0
VG2 NEP PWS RAW EXPERIMENT WAVEFORM 60MS V1.0
COMET SL9/JUPITER COLLISIONVOYAGER - VG2-N-PWS-1-EDR-WFRM-60MS-V1.0 - sta
1993-01-01T00:00:00Z1972-07-01T00:00:00Z
Data Set: VG2 NEP PWS RESAMPLED SUMMARY SPECTRUM ANALYZER 48SE
VG2 NEP PWS RESAMPLED SUMMARY SPECTRUM ANALYZER 48SEC V1.0
COMET SL9/JUPITER COLLISIONVOYAGER - VG2-N-PWS-4-SUMM-SA-48SEC-V1.0 - star
1993-01-01T00:00:00Z1972-07-01T00:00:00Z
Data Set: VG2 NEP PWS EDITED RDR UNCALIB SPECTRUM ANALYZER 4SEC
VG2 NEP PWS EDITED RDR UNCALIB SPECTRUM ANALYZER 4SEC V1.0
COMET SL9/JUPITER COLLISIONVOYAGER - VG2-N-PWS-2-RDR-SA-4SEC-V1.0 - starting
1993-01-01T00:00:00Z1972-07-01T00:00:00Z

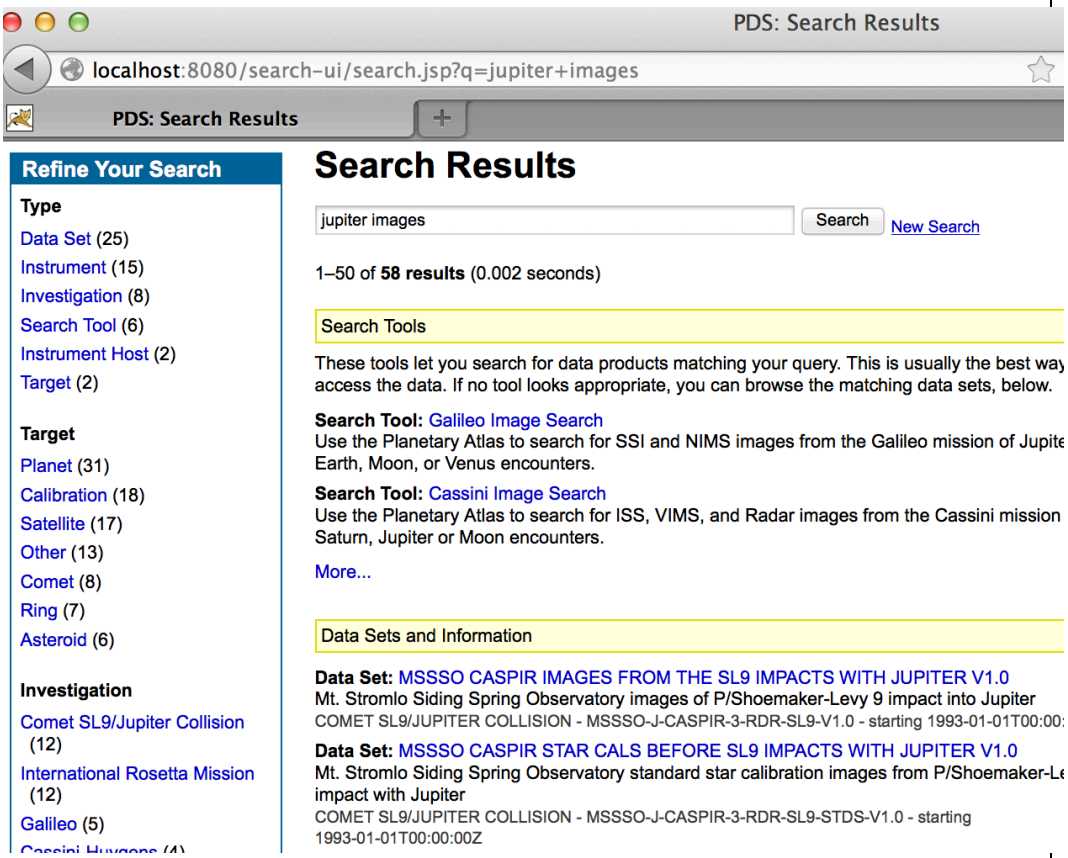
4.

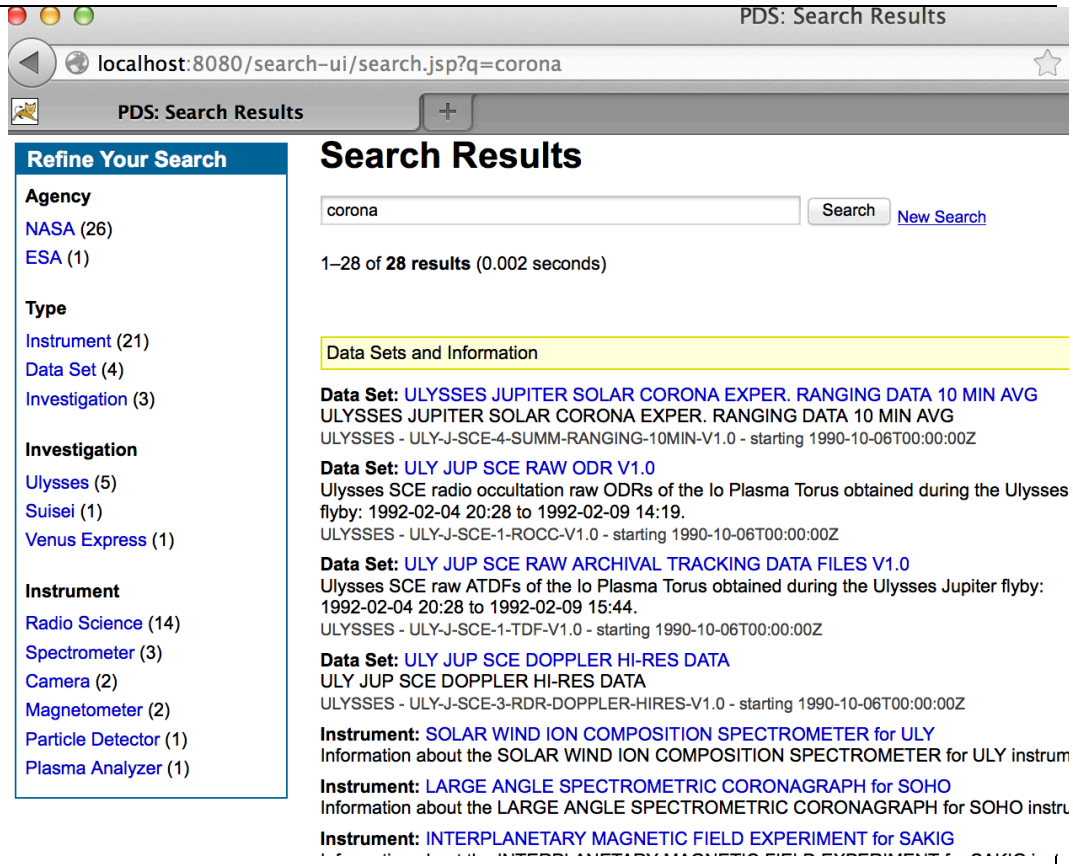

PDS: Search Results
localhost:8080/search-ui/search.jsp?q=neptune
PDS: Search Results
Refine Your Search
Type
Data Set (32)
Instrument (15)
Search Tool (3)
Investigation (3)
Target (3)
Instrument Host (2)
Target
Planet (34)
Satellite (8)
Other (6)
Ring (6)
Calibration (5)
Investigation
Voyager (31)
Comet SL9/Jupiter Collision (26)
Ground Based Atmospheric Observations (2)
MESSENGER (2)
New Horizons (2)
Cassini-Huygens (1)
Search Results
neptune
Search
New Search
1–50 of 58 results (0.002 seconds)
Search Tools
These tools let you search for data products matching your query. This is usually the best way
access the data. If no tool looks appropriate, you can browse the matching data sets, below.
Search Tool: Outer Planets Unified Search (OPUS)
Use OPUS to search for images and spectra from the Cassini, Galileo, New Horizons, and Voy
missions. Now with enhanced geometric metadata for Cassini ISS, UVIS, and VIMS Saturn da
enables surface search constraints for the planet, satellites and rings (e.g., latitudes and longit
expanded sets of viewing and illumination constraints, and incorporates comprehensive 'in the
view' target lists for Cassini ISS and VIMS.
Search Tool: Hubble Space Telescope Rings Image Catalog
Search for images of the ringed planets from the Wide Field/Planetary Camera 2 aboard the H
Space Telescope.
More...
Data Sets and Information
Target: N7 LARISSA
Information about the target N7 LARISSA
Target: N8 PROTEUS
Information about the target N8 PROTEUS
Data Set: VG2 NEPTUNE ULTRAVIOLET SPECTROMETER SUBSYSTEM 3 RDR V1.0
VG2 NEPTUNE UVS RDR

5.

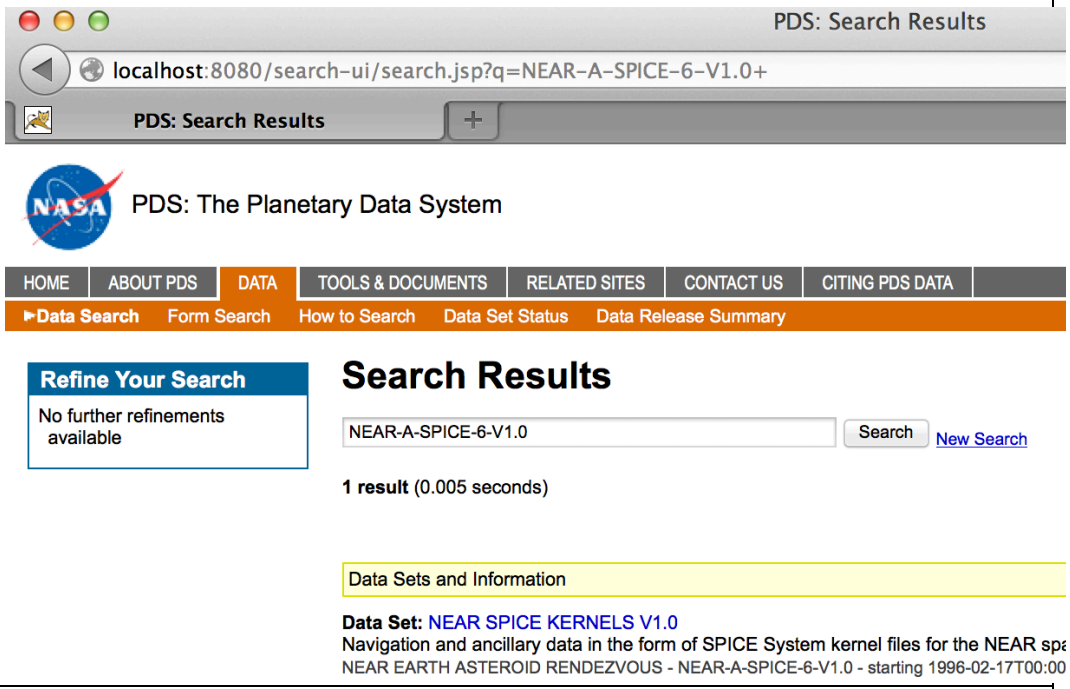

PDS: Search Results
localhost:8080/search-ui/search.jsp?q=mars+digital+elevation+maps
PDS: Search Results
Refine Your Search
Agency
NASA (7)
ESA (1)
Instrument
Radio Science (5)
Magnetometer (1)
Plasma Analyzer (1)
Reflectometer (1)
Spectrometer (1)
Search Results
mars digital elevation maps
Search
New Search
1–8 of 8 results (0.003 seconds)
Data Sets and Information
Instrument: MAGNETOMETER for MGS
Information about the MAGNETOMETER for MGS instrument
Instrument: RADIO SCIENCE SUBSYSTEM for MO
Information about the RADIO SCIENCE SUBSYSTEM for MO instrument
Instrument: RADIO SCIENCE SUBSYSTEM for MGS
Information about the RADIO SCIENCE SUBSYSTEM for MGS instrument
Instrument: RADIO SCIENCE SUBSYSTEM for MRO
Information about the RADIO SCIENCE SUBSYSTEM for MRO instrument
Instrument: MARS EXPRESS ORBITER RADIO SCIENCE for MEX
Information about the MARS EXPRESS ORBITER RADIO SCIENCE for MEX instrument
Instrument: ELECTRON REFLECTOMETER for MGS
Information about the ELECTRON REFLECTOMETER for MGS instrument
Instrument: RADIO SCIENCE SUBSYSTEM for CLEM1
Information about the RADIO SCIENCE SUBSYSTEM for CLEM1 instrument
Instrument: VISUAL AND INFRARED MAPPING SPECTROMETER for CO
Information about the VISUAL AND INFRARED MAPPING SPECTROMETER for CO ins

6.

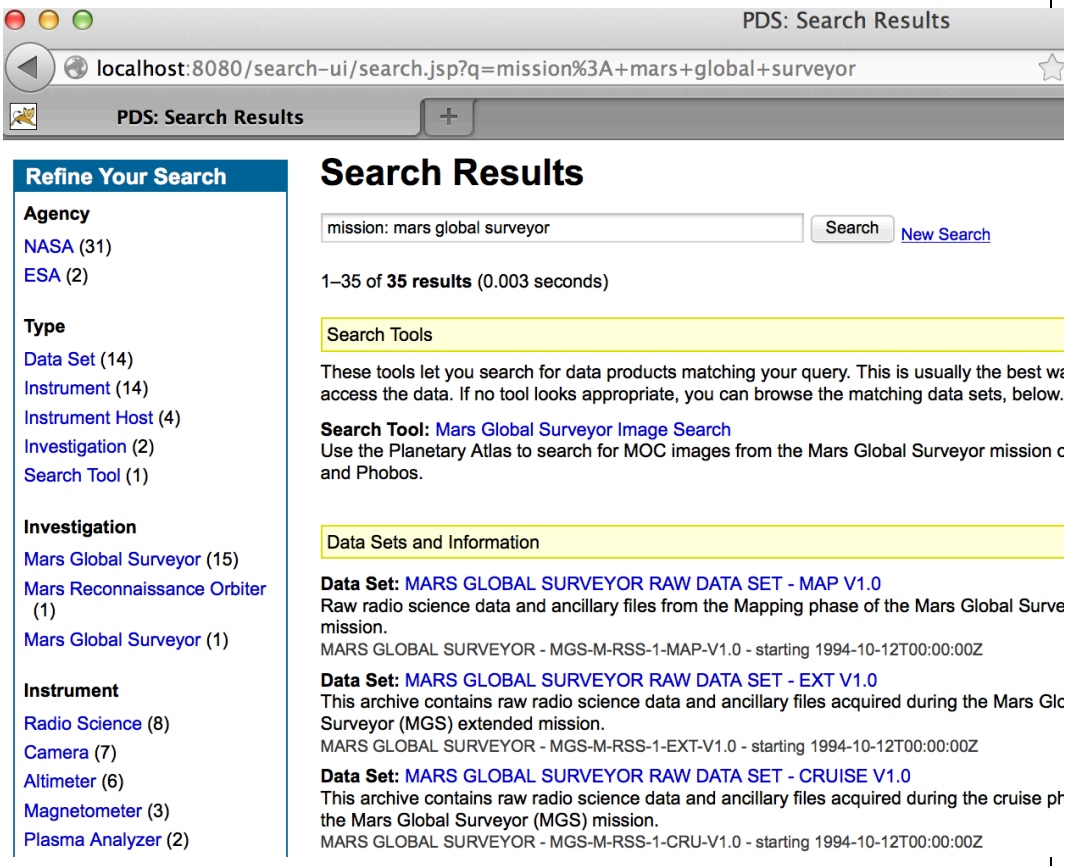

PDS: Search Results
localhost:8080/search-ui/search.jsp?q=jupiter+images
PDS: Search Results
Refine Your Search
Type
Data Set (25)
Instrument (15)
Investigation (8)
Search Tool (6)
Instrument Host (2)
Target (2)
Target
Planet (31)
Calibration (18)
Satellite (17)
Other (13)
Comet (8)
Ring (7)
Asteroid (6)
Investigation
Comet SL9/Jupiter Collision (12)
International Rosetta Mission (12)
Galileo (5)
Search Results
jupiter images
Search
New Search
1–50 of 58 results (0.002 seconds)
Search Tools
These tools let you search for data products matching your query. This is usually the best way
access the data. If no tool looks appropriate, you can browse the matching data sets, below.
Search Tool: Galileo Image Search
Use the Planetary Atlas to search for SSI and NIMS images from the Galileo mission of Jupite
Earth, Moon, or Venus encounters.
Search Tool: Cassini Image Search
Use the Planetary Atlas to search for ISS, VIMS, and Radar images from the Cassini mission
Saturn, Jupiter or Moon encounters.
More...
Data Sets and Information
Data Set: MSSSO CASPIR IMAGES FROM THE SL9 IMPACTS WITH JUPITER V1.0
Mt. Stromlo Siding Spring Observatory images of P/Shoemaker-Levy 9 impact into Jupiter
COMET SL9/JUPITER COLLISION - MSSSO-J-CASPIR-3-RDR-SL9-V1.0 - starting 1993-01-01T00:00:
Data Set: MSSSO CASPIR STAR CALS BEFORE SL9 IMPACTS WITH JUPITER V1.0
Mt. Stromlo Siding Spring Observatory standard star calibration images from P/Shoemaker-Le
impact with Jupiter
COMET SL9/JUPITER COLLISION - MSSSO-J-CASPIR-3-RDR-SL9-STDS-V1.0 - starting
1993-01-01T00:00:00Z

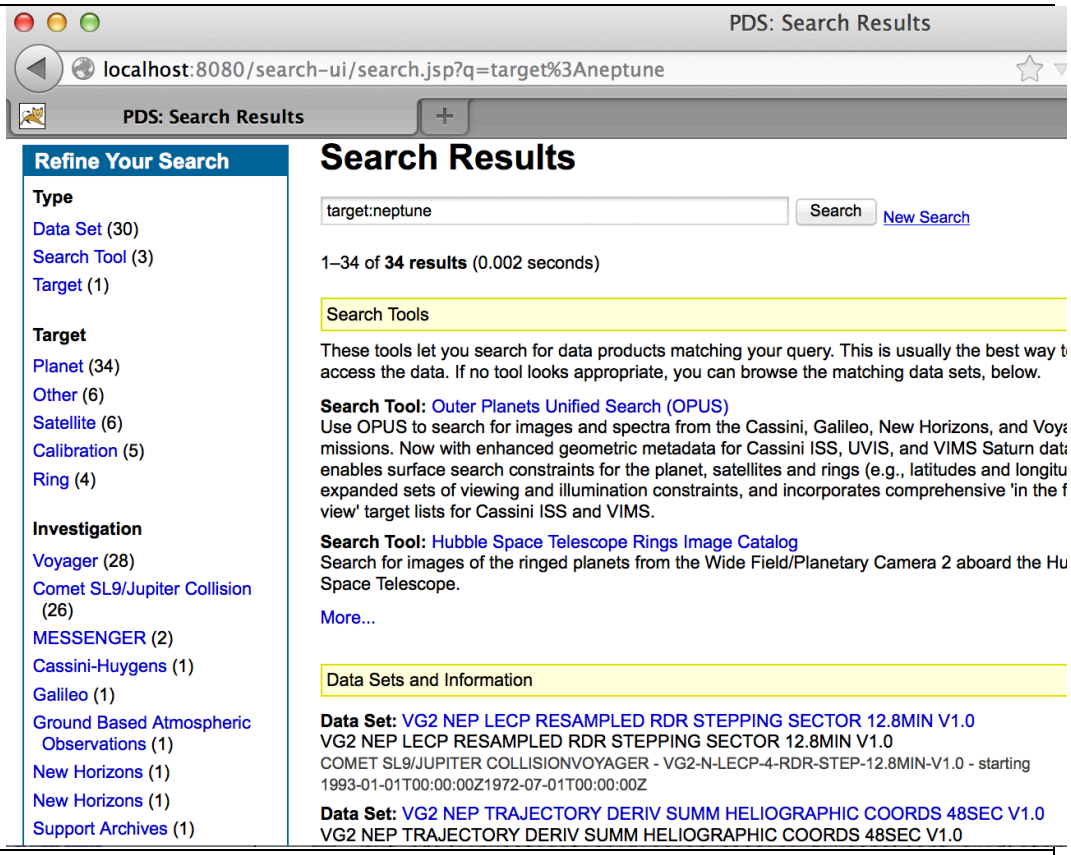


7.



Comments	Results met success criteria. https://oodt.jpl.nasa.gov/jira/browse/PDS-165, created during testing of build 3b, requests an improvement: for targets, show the PRIMARY_BODY_NAME when it is not N/A.
Date of Testing	2013.11.04
Test Personnel	Richard Chen

Test Case ID	SRCH.6
Description	Search based on constraints on specific indexes, and narrow results based on more constraints. Support ordering of results based on specified criteria. Results returned as clickable URIs with metadata describing each URI.
Requirements	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… PASS L5.SCH.9: The service shall support the ordering of results based on specified criteria... PASS L5.SCH.10: The service shall provide results to a search as a sequence of matching URIs… PASS L5.SCH.11: The service shall annotate each URI of a result with metadata describing the URI.
Success Criteria	Return results match constraint criteria and consist of clickable links with text describing each link.
Test Steps	In http://localhost:8080/search-ui: 1. mission: mars global surveyor 2. target:mercury
Test Results	1.  2.

	
Comments	Results met success criteria.
Date of Testing	2013.11.04
Test Personnel	Richard Chen

Test Case ID	SRCH.9 *not ready for build 4a. This is reserved for future testing
Description	Capture metrics on search index usage and contents
Requirements	SKIP L5.SCH .13: The service shall capture metrics pertaining to its search indexes usage and contents.
Success Criteria	A log shows metrics pertaining to usage of search indexes.
Test Steps	
Test Results	
Comments	
Date of Testing	
Test Personnel	

Test Case ID	TPRT.1
Description	Request data using the REST-based API
Requirements	PASS L5.TRS.1: The service shall accept requests for download of PDS products. PASS L5.TRS.2: The service shall accept requests for download of an individual file. PASS L5.TRS.4: The service shall package the requested product(s) or file into the specified format. PASS L5.TRS.6: The service shall transfer the result of a request via HTTP to the calling application.

	PASS L5.GEN.3: Services shall have an application programming interface. PASS L5.GEN.5: Services shall generate metrics in a format suitable for ingestion by the Report Service.
Success Criteria	The transport service returns the requested data. Also, the Tomcat server access log lists the transport.
Test Steps	The registry must have data, and Harvest must have gotten absolute paths as inputs. If this is run after SRCH.3, SRCH.5, or SRCH.6 1. curl -X GET -o x.zip "http://localhost:8080/transport/prod?q=identifier=urn:nasa:pds:context_pds3:target:comet.c-soho_2000_x7" 2. unzip x.zip 3. diff target_C-SOHO_2000_X7_1.0.xml contextPDS3/context_target/Product_20130521/target_C-SOHO_2000_X7_1.0.xml If run after AAFUNCTION.4 4. curl -X GET -o x.zip "http://localhost:8080/transport/prod?q=identifier=urn:nasa:pds:phx_ra:data_derived:sol114" 5. unzip x.zip 6. diff sol114.csv bundle_geo_ra/data_derived/sol114.csv diff sol114.xml bundle_geo_ra/data_derived/sol114.xml
Test Results	Step 1: % Total % Received % Xferd Average Speed Time Time Time Current Dload Upload Total Spent Left Speed 100 895 100 895 0 0 405 0 0:00:02 0:00:02 --:--:-- 405 Step 2: Archive: x.zip inflating: target_C-SOHO_2000_X7_1.0.xml Step 3 shows no differences Step 4: % Total % Received % Xferd Average Speed Time Time Time Current Dload Upload Total Spent Left Speed 100 357k 100 357k 0 0 252k 0 0:00:01 0:00:01 --:--:-- 253k Step 5: Archive: x.zip inflating: sol114.xml inflating: sol114.csv Step 6 shows no differences
Comments	Results met success criteria.
Date of Testing	2013.11.04
Test Personnel	Richard Chen

Test Case ID	TPRT.2 *not ready for build 4a. This is reserved for future testing
Description	Verify that the requested data transferred intact
Requirements	SKIP L5.TRS.5: The service shall include a checksum manifest listing all files contained in the result of a request along with their associated MD5 checksums.
Success Criteria	The mechanism (checksum) provided by the transport service confirms the data transferred correctly.
Test Steps	
Test Results	
Comments	
Date of Testing	

Test Personnel	

Test Case ID	TPRT.3 *not ready for build 4a. This is reserved for future testing
Description	Transform requested product
Requirements	SKIP L5.TRS.3: The service shall transform the requested product(s) or file into the specified format.
Success Criteria	The original and the transformed products have the same data.
Test Steps	
Test Results	
Comments	
Date of Testing	
Test Personnel	

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

In the tables below:

- Column 1: the issue's status. Issues below are closed (i.e. resolved) unless marked "open".
- Column 2: the JIRA issue number. To see the full issue, go to http://oodt.jpl.nasa.gov/jira/browse/PDS-<n>
- Column 3: the issue's severity: major anomaly, minor anomaly, request for improvement
- Column 4: test case that demonstrates the issue and its resolution, if closed
- Column 5: brief description of the issue

Testing of build 1b found 1 major anomaly, 0 minor, 0 improvements

closed	PDS-1	major	REG.1	Registry: >1 copy of associations if reregistration of a deleted product

Testing of build 1c found 0 major anomalies, 1 minor, 1 improvement

closed	PDS-34	improve	n/a – expected behavior	Registry: association to obsoleted product not automatically updated
closed	PDS-35	minor	n/a – expected behavior	Validate: -x fails unexpectedly

Testing of build 1d found 1 major anomaly, 2 minor, 2 improvements

closed	PDS-45	improve	REG.9	Registry: curl –X DELETE …/registry/packages/<guid>/members fails
closed	PDS-46	minor	REG.4	Validate: -x fails unexpectedly
closed	PDS-47	minor	REG.6	Registry: product's initial status is "Unknown"
closed	PDS-48	improve	n/a – expected behavior	Validate: files within bundle.xml are not validated
closed	PDS-49	major	HVT.2	Harvest: HarvestController does not start

Testing of build 2a found 0 major anomalies, 0 minor, 0 improvements

Testing of build 2b found 3 major anomalies, 2 minor, 3 improvements

closed	PDS-52	major	CTLG.3	Catalog: -m ingest does not handle multiple *_CATALOG in voldesc
closed	PDS-53	major	n/a – expected behavior	Catalog: -m ingest quits without voldec.cat
closed	PDS-54	improve	CTLG.3	Catalog: -m ingest gives uninformative error message for dsmap file
closed	PDS-55	improve	moved to PDS-113 and -114	Generate: can't handle some constructs
closed	PDS-56	major	SCH.5	Search: if >10 results, only the first 10 are accessible
closed	PDS-57	minor	SCH.3	Search: superseded datasets returned
closed	PDS-58	improve	PRG.1	Generate: bad error message when neither –d nor –o is given
closed	PDS-63	minor	HVT.6	Harvest: crashes on one specific file

Testing of build 2c found 0 major anomalies, 1 minor, 4 improvements

open	PDS-85	improve	PRV.1	Validate: should use schema and schematron specified in labels
closed	PDS-86	improve	n/a – expected behavior	Search: after searching and refining, new search unintentionally refines
closed	PDS-87	minor	CTLG.1	Catalog: -cconfig fails
closed	PDS-88	improve	CTLG.3	Catalog: bad output message when voldesc points to a missing file
closed	PDS-89	improve	CTLG.3	Catalog: -m ingest gives too long an error message for a bad password

Testing of build 3a found 0 major anomalies, 2 minor, 3 improvements

open	PDS-113	improve	PRG.1	Generate: handle attached files in labels
open	PDS-114	improve	PRG.1	Generate: update tool scenario documentation

closed	PDS-123	improve	CTLG.3	Catalog: poor error message if no config file or command-line params
closed	PDS-125	minor	SCH.3, SCH.5	Search: superseded data sets appear, and search tools don't
closed	PDS-134	minor	SCH.5	Search: incorrectly handles slashes in dataset ID

Testing of build 3b found 0 major anomalies, 1 minor, 5 improvements

closed	PDS-161	improve	CTLG.1	Catalog: -m compare should compare token by token, not line by line
closed	PDS-162	improve	n/a – expected behavior	Catalog: -m ingest does nothing with reference.cat
closed	PDS-163	improve	CTLG.3	Catalog: -m ingest reregisters files if listed in multiple voldescs
closed	PDS-164	minor	n/a – expected behavior	Search: search-ui returns differently than search-service
open	PDS-165	improve	SRCH.5	Search: for targets, show PRIMARY_BODY_NAME when not N/A.
open	PDS-166	improve	HVT.5	Harvest: check if secondary members match primary members

Testing of build 4a found 1 major anomaly, 0 minor, 3 improvements

closed	PDS-213	major	PRV.2	Validate: the tool is not finding document files correctly
open	PDS-220	improve	AAFUNCTION.4	Search: many resultant resource products clutter output
closed	PDS-225	improve	SCMA.1/SCMA.REL1101N2	Validate: treat role="warning" differently than default (role="error")
open	PDS-227	improve	CTLG.3	Catalog: Re-ingesting a file skipped during ingest (e.g. ref.cat) re-registers it

5 Requirements Traceability

This test traceability matrix 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.

Requirement #	System Component	Test case ID	Test Status
L5.GEN.1	General System	GEN.1	pass
L5.GEN.2	General System	GEN.1	pass
L5.GEN.3	General System	REG.1, SRCH.3, TPRT.1	pass
L5.GEN.4	General System	PRV.1, PRT.1	pass
L5.GEN.5	General System	SRCH.3, TPRT.1	pass
L5.GEN.6	General System	SRCH.5, REG.6	pass
L5.GEN.7	General System	HVT.1, PRV.1	pass
L5.GEN.8	General System	GEN.4	skip
L5.GEN.9	General System	SRCH.2	pass
L5.GEN.10	General System	HVT.4	pass
L5.GEN.11	General System	GEN.7	pass
L5.HVT.1	Harvest Tool	AAFUNCTION.3, HVT.1, HVT.2, HVT.5	pass
L5.HVT.2	Harvest Tool	AAFUNCTION.3, HVT.1	pass
L5.HVT.3	Harvest Tool	HVT.2	pass
L5.HVT.4	Harvest Tool	AAFUNCTION.3, HVT.1, HVT.2	pass
L5.HVT.5	Harvest Tool	AAFUNCTION.3, HVT.1, HVT.2, HVT.5	pass
L5.HVT.6	Harvest Tool	AAFUNCTION.3, HVT.1, HVT.2	pass
L5.HVT.7	Harvest Tool	AAFUNCTION.3, HVT.1, HVT.2	pass
L5.HVT.8	Harvest Tool	AAFUNCTION.3, HVT.1, HVT.2, HVT.5	pass
L5.PRP.DE.1	Prep: Design Tool	AAFUNCTION.1	pass
L5.PRP.DE.2	Prep: Design Tool	AAFUNCTION.1	pass
L5.PRP.DE.3	Prep: Design Tool	AAFUNCTION.1	pass
L5.PRP.DE.4	Prep: Design Tool	AAFUNCTION.1	pass
L5.PRP.DE.5	Prep: Design Tool	AAFUNCTION.1	pass
L5.PRP.DE.6	Prep: Design Tool	AAFUNCTION.1	pass
L5.PRP.DE.7	Prep: Design Tool	AAFUNCTION.1	pass
L5.PRP.VA.1	Prep: Validation Tool	AAFUNCTION.2, PRV.1	pass
L5.PRP.VA.2	Prep: Validation Tool	AAFUNCTION.2, PRV.1	pass
L5.PRP.VA.3	Prep: Validation Tool	AAFUNCTION.2	pass
L5.PRP.VA.4	Prep: Validation Tool	PRV.4	skip
L5.PRP.VA.5	Prep: Validation Tool	AAFUNCTION.2, PRV.1	pass
L5.PRP.VA.6	Prep: Validation Tool	AAFUNCTION.2, PRV.1	pass
L5.PRP.VA.7	Prep: Validation Tool	AAFUNCTION.2, PRV.6	pass

L5.PRP.VA.8	Prep: Validation Tool	PRV.5	pass
L5.PRP.VA.9	Prep: Validation Tool	AAFUNCTION.2, PRV.1	pass
L5.PRP.VA.10	Prep: Validation Tool	PRV.2	pass
L5.REG.1	Registry Service	AAFUNCTION.3, REG.1	pass
L5.REG.2	Registry Service	AAFUNCTION.3, REG.2	pass
L5.REG.3	Registry Service	REG.3	pass
L5.REG.4	Registry Service	AAFUNCTION.3, REG.1	pass
L5.REG.5	Registry Service	REG.1	pass
L5.REG.6	Registry Service	AAFUNCTION.3, REG.4	pass
L5.REG.7	Registry Service	REG.5	pass
L5.REG.8	Registry Service	AAFUNCTION.3	pass
L5.REG.9	Registry Service	REG.6	pass
L5.REG.10	Registry Service	REG.6	pass
L5.REG.11	Registry Service	REG.6	pass
L5.REG.12	Registry Service	REG.6	pass
L5.REG.13	Registry Service	REG.1, REG.2, REG.4	pass
L5.REG.14	Registry Service	REG.1, REG.2, REG.4	pass
L5.REG.15	Report Service	REG.7	skip
L5.REG.16	Report Service	REG.8	skip
L5.RPT.1	Report Service	RPT.1	pass
L5.RPT.2	Report Service	RPT.1	pass
L5.RPT.3	Report Service	RPT.1	pass
L5.RPT.4	Report Service	RPT.1	pass
L5.RPT.5	Report Service	RPT.1	pass
L5.RPT.6	Report Service	RPT.1	pass
L5.RPT.7	Report Service	RPT.1	pass
L5.RPT.8	Report Service	RPT.1	pass
L5.RPT.9	Report Service	RPT.1	pass
L5.RPT.10	Report Service	RPT.1	pass
L5.RPT.11	Report Service	RPT.1	pass
L5.SCH.1	Search Service	AAFUNCTION.4, SRCH.5	pass
L5.SCH.2	Search Service	SRCH.1	skip
L5.SCH.3	Search Service	SRCH.2	pass
L5.SCH.4	Search Service	SRCH.3	pass
L5.SCH.5	Search Service	AAFUNCTION.4, SRCH.4	pass
L5.SCH.6	Search Service	AAFUNCTION.4, SRCH.5	pass
L5.SCH.7	Search Service	SRCH.6	pass
L5.SCH.8	Search Service	AAFUNCTION.4, SRCH.6	pass
L5.SCH.9	Search Service	AAFUNCTION.4, SRCH.6	pass
L5.SCH.10	Search Service	AAFUNCTION.4, SRCH.6	pass
L5.SCH.11	Search Service	AAFUNCTION.4, SRCH.6	pass

L5.SCH.12	Search Service	AAFUNCTION.4	pass
L5.SCH.13	Search Service	SRCH.9	skip
L5.SEC.1	Security Service	HVT.4, SEC.1	pass
L5.SEC.2	Security Service	AAFUNCTION.3, SEC.1	pass
L5.SEC.3	Security Service	HVT.4, SEC.1	pass
L5.SEC.4	Security Service	SEC.1	pass
L5.SEC.5	Security Service	SEC.1	pass
L5.SEC.6	Security Service	SEC.1	pass
L5.SEC.7	Security Service	SEC.1	pass
L5.TRS.1	Transport Service	TPRT.1	pass
L5.TRS.2	Transport Service	TPRT.1	pass
L5.TRS.3	Transport Service	TPRT.3	skip
L5.TRS.4	Transport Service	TPRT.1	pass
L5.TRS.5	Transport Service	TPRT.2	skip
L5.TRS.6	Transport Service	TPRT.1	pass
4.2.4	Catalog Tool	CTLG.1	pass
4.2.4	Catalog Tool	CTLG.2	pass
4.2.4	Catalog Tool	CTLG.3	pass
4.2.4	Harvest Tool	HVT.6	pass
L4.PRP.2	Prep: Generate Tool	PRG.1	pass
L4.PRP.4	Prep: Transform Tool	PRT.1	pass
1.3.3	PDS Requirements	SCMA.1	pass

Test Status: "skip" signifies requirements not implemented nor tested in Build 4a. Those test cases are included for future builds only.

Of the 96 requirements listed above, 88 have been tested during Build 4a integration and test.

6 Miscellaneous

6.1 Test Data

http://pds-engineering.jpl.nasa.gov/index.cfm?pid=145&cid=188 has this document as well as test data PDS4test.build4a.zip.

6.2 Test Environment

Build 4a integration and test environment encompasses the following:

Hostname	OS	Memory	Software
local host (mac)	Mac OS X 10.8.4	16GB RAM	Catalog, Design, Generate, Harvest, Registry, Report, Search, Storage, Transform, Transport, Validate
potato	Linux	24GB	Security, Storage, Transport
pdsbeta	Linux	16GB	Search
pdsops	Linux	12GB	Report

6.3 Configuration Management

The PDS Configuration Management (CM) process will uniquely identify the build 4a and other releases. It will be followed and maintained by the Operations Team, which will act as the configuration management process engineer.

6.4 Acronyms

CM – Configuration Management
DN – PDS Discipline or Data Node
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

PDS MC – PDS Management Council
SDD – Software Design Document
SRD – Software Requirements Document
UI – User Interface