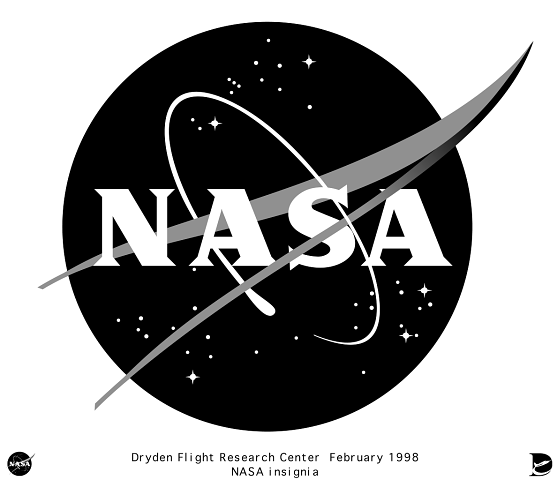
Plan Document

NASA Planetary Data System

PDS4 System

Build 8b 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 reeendations 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 |
| 4b’ | Apr 14, 2014 | Replaced generate0.7.0 with 0.7.1 | Richard Chen |
| 5a | Oct 27, 2014 | Added PRV.3, TPRT.4. Changed HVT.4 to GEN.2. Changed TPRT.3 to test more of transport-proxy. Deleted TPRT.2 after folding its step into TPRT.1 | Richard Chen |
| 5b | Apr 19, 2015 | Rewrote TPRT.4 to test transport-proxy correctly. Much work on formatting issues in Generate, Transform, and Transport. Added SRCH.8 | Richard Chen |
| 6a | Oct 19, 2015 | Added HVT.7, REG.10. Modified HVT.5, PRG.1, PRT.1, PRV.1, PRV.3, PRV.5, PRV.6, REG.3, REG.9, SRCH.5, SRCH.8, TPRT.1, TPRT.3 | Richard Chen |
| 6b | Apr 29, 2016 | Added PRP.1, PRT.2, PRT.3, PRV.7, TPRT.5 | Richard Chen |
| 7a | Oct 24, 2016 | Added MOD.1, Changed DSV.1 to POR.1, added POR.2 | Richard Chen |
| 7b | Apr 17, 2017 | Added HVT.8 | Richard Chen |
| 8a | Oct 23, 2017 | Added harvest-search, search-analytics | Richard Chen |
| 8b | Apr 23, 2018 | Added PRI.1, PRS.1, TPRT.6. Removed obsolete PRV.6 | Richard Chen |

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## Introduction

For over twenty 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.

### 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 8b 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 traces these scenarios to the new PDS4 system design requirements, which in turn can be traced to high-level PDS requirements.

### Scope

For PDS4 Build 8b, the following software will be deployed at the EN:

* Ingest: Harvest 1.14.0, Harvest-Search 0.2.0, Catalog 1.15.0
* Model: LDDTool 8.1.0
* Portal: Data Set View 2.11.0
* Preparation: Design, Generate 0.14.0, Inspect 0.2.0, Tools Service 0.2.0, Transform 1.7.0, Validate 1.13.0
* Registry: Core 1.14.0, Service 1.14.0, UI 1.14.0
* Report (Sawmill 8.5)
* Search: Core 1.12.0, Service 1.12.0, Search-UI 1.12.0, Product-Search-UI 1.12.0, Analytics 1.12.0/
* Security (OpenDS 2.2.0)
* Storage-Service 1.2.0, Product-Service 1.2.0
* Transport-Registry 1.6.0, Transport-OFSN 1.8.0, Transport-Proxy 1.7.0, Transport-upload 0l50

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.

### 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.

### 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 8b Integration testing is the execution and management of tests by the Engineering Node to ensure that the release of Build 8b 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.

### Applicable Documents

#### 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.

#### Referenced Documents

[3] PDS4 Project Plan, July 2013.

[4] PDS4 Operations Concept, September 2013.

[4] System Architecture Specification, September 2013.

[5] General System Requirements, September 2013.

[6] Software Requirements and Design, 2013.

[7] PDS4 Standards Documents, 2014.

## Executive Summary

**The testing documented herein substantiates that all tested tools and services meet Build 8b requirements as specified in their Software Requirements and Design documents.**

|  |  |  |  |
| --- | --- | --- | --- |
| **# of tests performed** | **# of tests passed** | **# of tests failed** | **# of high priority anomalies** |
| 54 | 54 | 0 | 0 |

Build 8b confirms the closure of 3 JIRA issues reported in earlier testing: PDS-486, PDS-518, and PDS-522. It also confirms the closure of JIRA issues created elsewhere: PDS-516, PDS-524, PDS-526, PDS-528, PDS-531, PDS-532, PDS-534, PDS-537, PDS-538, PDS-542, PDS-543, PDS-544, PDS-545, PDS-546. Build 8b opens 2 major JIRA issues PDS-558 and PDS-559 and reopens minor JIRA issues PDS-501 and PDS-533, of which PDS-558, PDS-559, and PDS-533 have already been resolved, with the latter replaced by two minor JIRA issues PDS-548 and PDS-560. See the bottom of Section , Anomalies.

Section has one sequence of four tests that represent the most likely operating scenario for PDS4 products: creation, validation, ingestion, search. Section has one sequence of tests per software module. These tests cover level 4 and 5 requirements for completeness. The sequences:

* CTLG.\* tested the catalog tool and the storage service successfully.
* GEN.\* tested general functionality successfully. Testing of accessing a controlled registry was skipped, as no registries are run that way now or are availabe to test with.
* HVT.\* tested the Ingest/Harvest tool successfully.
* MOD.1 tested LDDTool successfully after opening then closing anomaly PDS-558, an error in the installation procedure. PDS-518 was also closed
* POR.1 tested the Portal / Data Set View interface successfully, while POR.2 tested the service registry successfully.
* PRG.1 tested the Preparation/Generate tool successfully.
* PRI.1, new in 8b, successfully tested PDS4 Viewer, the core functionality of the Inspect tool.
* PRP.1 tested the tool extract-table successfully.
* PRS.1, new in 8b, tested the webapps tools-service and ts, which initially failed, opening anomaly PDS-559. That has already been resolved.
* PRT.\* tested the Preparation/Transform tool successful, closing issues PDS-532, PDS-534, PDS-542, PDS-543, PDS-544, PDS-545, PDS-546, and reopening minor anomaly PDS-533, already resolved and replaced by PDS-548 and PDS-560.
* PRV.\* tested the Preparation/Validation tool successfully, clearing PDS-516, PDS-522, PDS-524, PDS-526, PDS-531, PDS-542, PDS-543, and reopening minor anomaly PDS-501
* REG.\* tested the Registry successfully.
* RPT.1 tested the Report service successfully.
* SCMA.1 tested the PDS4 schema (v1.A.0.0) rather than software. These tests used the Validate tool and proceeded independently from the software build 8b.
* SEC.1 tested the Security service successfully.
* SRCH.\* tested the Search service successfully, clearing PDS-528
* TPRT.\* added test TPRT.6 for Transport Upload.

Section lists all issues and their info: status, JIRA tracking number, severity, relevant test case, and description. Testing of Build 8b created 2 major and 2 minor anomalies. Overall, 15 issues remain open: 2 major anomlies, 5 minor anomalies, 8 requests for improvement.

Section 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 5 test cases, each uniquely covering 1 level 5 requirement, have been skipped because appropriate PDS4 software has not yet been implemented.

## Test Procedures

The following section defines the tests and their results. All tests below have been run for build 8b (except those written for future builds) and will be run as necessary to re-test the system after software changes.

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

### Setup

The root URL for all software is <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0>

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

* **Harvest**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/ingest/harvest>
* **Registry**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/registry>
* **Search**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/search>
* **Validate**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/preparation/validate>
* an **XML editor**, e.g. Oxygen. This can be skipped, though not recommended.
* an XML-friendly web **browser**, e.g. firefox

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

* **Catalog**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/ingest/catalog>
* **Extract-table**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/preparation/pds4-tools>
* **Generate**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/preparation/generate>
* **Inspect**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/preparation/inspect>
* **Model**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/model>
* **Portal**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/portal>
* **Storage**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/storage>
* **Transform**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/preparation/transform>
* **Transport**, <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0/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 |
| harvestpds3 | 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 | 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 | From <https://pds-engineering.jpl.nasa.gov/content/build_8b_deliverables>, download  PDS4test.build8b.tgz, then   * mkdir *testDir* * cd *testDir* * tar xzf PDS4test.build8b.tgz |

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 -r *binDir*/search-service/pds/solr-docs/\*  rm -r *binDir*/search-service/pds/solr-docs\_old/\*  rm -f -r *dbDir*/registrypds\*  cd *binDir*/registry-service  java -Djava.ext.dirs=lib/ org.apache.derby.tools.ij  connect 'jdbc:derby:registrypds3;create=true;user=registry';  run 'conf/derby-registry-schema.ddl';  disconnect;  connect 'jdbc:derby:registrypds4;create=true;user=registry';  run 'conf/derby-registry-schema.ddl';  exit;  mv registrypds3 registrypds4 *dbDir*/  rm derby.log  $CATALINA\_HOME/bin/startup.sh  setenv REGISTRY\_SERVICE http://localhost:8080/registry-pds3  cd *binDir*/registry-service/bin; ./registry-config # wait for startup.sh  setenv REGISTRY\_SERVICE http://localhost:8080/registry-pds4  cd *binDir*/registry-service/bin; ./registry-config |

### 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 the Data Providers’ Handbook (DPH), Version 1.3.0, Appendix D. |
| Test Results | Creation of a label-template (xml) from the master-schema (xsd). |
| Comments | Results met success criteria |
| Date of Testing | 2018.04.16 |
| 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 -m 1A00 -t bundle\_geo\_ra -e "\*.xml" |
| Test Results | PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-16T23:39:47Z  Core Schemas [PDS4\_PDS\_1A00.xsd]  Core Schematrons [PDS4\_PDS\_1A00.sch]  Model Version 1A00  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_geo\_ra/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  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/PDS4\_host\_PHX\_1.0.xml  PASS: file: *testDir*/bundle\_geo\_ra/context/PDS4\_inst\_RA\_\_PHX.xml  ...  PASS: file: *testDir*/bundle\_geo\_ra/xml\_schema/collection.xml  PASS: file: *testDir*/bundle\_geo\_ra/xml\_schema/PDS4\_PDS\_1A00.xml  Summary:  0 error(s)  0 warning(s)  End of Report |
| Comments | Results met success criteria |
| Date of Testing | 2018.04.16 |
| 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   1. harvest *testDir*/contextPDS4onlyPHX -c harvest-policy-master.xml -l h1.out -e "\*.xml" 2. grep -v "SUCCESS\|INFO" h1.out | uniq 3. harvest *testDir*/bundle\_geo\_ra -c harvest-policy-master.xml -l h2.out -e "\*.xml" 4. grep -v "SUCCESS\|INFO" h2.out | uniq   The following set up search-core in the next test case.   1. (assuming *binDir*/harvest/bin/harvest points to registry.pds4, this has no data, as it defaults to registry-pds3) http://localhost:8080/registry-ui/ 2. set Registry Service(s) to registry-pds4 3. Click tab “Packages”. Select the two “Harvest-Package\_\*”, set Status to “Approved”, click “Update Status”. |
|  | Step 3: Without grep, the output file is very large  PDS Harvest Tool Log  Version Version 1.14.0  Time Mon, Apr 16 2018 at 04:53:14 PM  Target(s) [/Users/rchen/Desktop/test/contextPDS4onlyPHX]  File Inclusions [\*.xml]  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180416165314  Registration Package GUID urn:uuid:7c5660cd-d47f-448d-a240-4db6fc1990fe  Summary:  26 of 26 file(s) processed, 0 other file(s) skipped  0 error(s), 0 warning(s)  26 of 26 products registered.  31 of 31 ancillary products registered.  Product Types Registered:  5 Product\_Collection  31 Product\_File\_Repository  20 Product\_Context  1 Product\_Bundle  31 of 31 associations registered.  End of Log  Step 5:  PDS Harvest Tool Log  Version Version 1.14.0  Time Mon, Apr 16 2018 at 04:55:33 PM  Target(s) [/Users/rchen/Desktop/test/bundle\_geo\_ra]  File Inclusions [\*.xml]  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180416165533  Registration Package GUID urn:uuid:2f1a4819-f65a-4f38-95b0-55a2c162f16d  WARNING: [/Users/rchen/Desktop/test/bundle\_geo\_ra/context/PDS4\_host\_PHX\_1.0.xml] Product already exists: urn:nasa:pds:context:instrument\_host:spacecraft.phx::1.0  WARNING: [/Users/rchen/Desktop/test/bundle\_geo\_ra/context/PDS4\_inst\_RA\_\_PHX.xml] Product already exists: urn:nasa:pds:context:instrument:ra.phx::1.0  WARNING: [/Users/rchen/Desktop/test/bundle\_geo\_ra/context/PDS4\_mission\_PHOENIX\_1.0.xml] Product already exists: urn:nasa:pds:context:investigation:mission.phoenix::1.0  WARNING: [/Users/rchen/Desktop/test/bundle\_geo\_ra/context/PDS4\_target\_MARS\_1.0.xml] Product already exists: urn:nasa:pds:context:target:planet.mars::1.0  Summary:  173 of 173 file(s) processed, 0 other file(s) skipped  0 error(s), 4 warning(s)  169 of 173 products registered.  338 of 338 ancillary products registered.  Product Types Registered:  1 Product\_XML\_Schema  5 Product\_Collection  120 Product\_Observational  4 Product\_Document  38 Product\_Browse  338 Product\_File\_Repository  1 Product\_Bundle  338 of 338 associations registered.  End of Log  Step 7:  Step 8: |
| Comments | Results met success criteria.  The warnings in step 5 are expected, as step 3 registered the context products already. |
| Date of Testing | 2018.04.16 |
| 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/defaults/pds/pds4/core.properties 6. Repeat step 2 7. Repeat step 4 |
| Test Results | Step 2:../Screen%20Shot%202017-04-13%20at%2015.13.58.png  Step 4: ../Screen%20Shot%202017-04-13%20at%2015.13.06.png  Step 5:  Processing config: attribute.xml  Processing config: bundle.xml  Processing config: class.xml  Processing config: collection.xml  Processing config: context.xml  Processing config: document.xml  Processing config: observational.xml  PDS Search Core Run Log  Version Version 1.12.0  Time Mon, Apr 16 2018 at 11:09:56 PM  Severity Level INFO  Search Home /PDS4tools/search-service/pds  Search Service URL http://localhost:8080/search-service  Search Core Properties /PDS4tools/search-core/conf/defaults/pds/pds4/core.properties  SUCCESS: Completed extraction: attribute.xml  INFO: Completed: urn:nasa:pds:context  INFO: Completed: urn:nasa:pds:phx\_ra  SUCCESS: Completed extraction: bundle.xml  SUCCESS: Completed extraction: class.xml  INFO: Completed: urn:nasa:pds:phx\_ra:data\_test  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived  INFO: Completed: urn:nasa:pds:system\_bundle:xml\_schema  INFO: Completed: urn:nasa:pds:context:target  INFO: Completed: urn:nasa:pds:context:agency  INFO: Completed: urn:nasa:pds:phx\_ra:context  INFO: Completed: urn:nasa:pds:context:instrument  INFO: Completed: urn:nasa:pds:phx\_ra:document  INFO: Completed: urn:nasa:pds:context:instrument\_host  INFO: Completed: urn:nasa:pds:context:investigation  SUCCESS: Completed extraction: collection.xml  INFO: Completed: urn:nasa:pds:context:target:satellite.deimos  INFO: Completed: urn:nasa:pds:context:instrument:tega.phx  INFO: Completed: urn:nasa:pds:context:node:node.pds-mgt  INFO: Completed: urn:nasa:pds:context:target:planet.mars  INFO: Completed: urn:nasa:pds:context:instrument:meca\_elec.phx  INFO: Completed: urn:nasa:pds:context:instrument:meca\_afm.phx  INFO: Completed: urn:nasa:pds:context:instrument:meca\_wcl.phx  INFO: Completed: urn:nasa:pds:context:instrument:ase.phx  INFO: Completed: urn:nasa:pds:context:instrument:met.phx  INFO: Completed: urn:nasa:pds:context:instrument:rac.phx  INFO: Completed: urn:nasa:pds:context:investigation:mission.phoenix  INFO: Completed: urn:nasa:pds:context:instrument:tt.phx  INFO: Completed: urn:nasa:pds:context:instrument:lidar.phx  INFO: Completed: urn:nasa:pds:context:instrument:meca\_tecp.phx  INFO: Completed: urn:nasa:pds:context:instrument:ra.phx  INFO: Completed: urn:nasa:pds:context:node:node.psa  INFO: Completed: urn:nasa:pds:context:instrument:om.phx  INFO: Completed: urn:nasa:pds:context:target:satellite.phobos  INFO: Completed: urn:nasa:pds:context:instrument\_host:spacecraft.phx  INFO: Completed: urn:nasa:pds:context:instrument:ssi.phx  SUCCESS: Completed extraction: context.xml  INFO: Completed: urn:nasa:pds:phx\_ra:document:ra\_instrument  INFO: Completed: urn:nasa:pds:phx\_ra:document:readme  INFO: Completed: urn:nasa:pds:phx\_ra:document:activity\_table\_desc  INFO: Completed: urn:nasa:pds:phx\_ra:document:ra\_dataset  SUCCESS: Completed extraction: document.xml  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol083  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol032a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol072  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol132a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol079b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol098a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol125a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol101a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol136  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol126a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol134c  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol045a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol033a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol073  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol058b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol014  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol089a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol090  INFO: Completed: urn:nasa:pds:phx\_ra:document:activity  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol148b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol129  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol088  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol128b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol089b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol077  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol066  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol067  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol147b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol145b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol075  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol064  INFO: Completed: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_duricrust  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol133a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol130  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol051  INFO: Completed: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_icy\_soil\_dig2  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol140  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol076  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol099b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol062  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol116b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol007  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol032b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol042b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol125b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol042a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol132b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol134a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol098b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol079a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol149b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_trench\_wall\_failure\_tip  INFO: Completed: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_icy\_soil\_dig1  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol117  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol133c  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol068b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol126b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol128a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol045b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol114  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol116a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol148d  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol115  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol074a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol042c  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol145a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol025  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol143  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol146b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_trench\_wall\_failure\_bottom  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol074b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol042d  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol031  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol060  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol057b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol141  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol049  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol101b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol087b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol013  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol058a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol105b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol099a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol019a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol024  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol133b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol022a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol033b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol095  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol068a  INFO: Completed: urn:naProcessing config: service.xml  sa:pds:phx\_ra:data\_derived:sol134d  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol058c  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol069  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol148a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol110  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol085  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol022b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol006  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol148c  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol009  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol042e  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol071b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol127b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol146a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol020a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol011  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol057a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol134b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol020b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol071a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol147a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol133d  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol087a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol127a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol019b  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol093  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol033c  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol149a  INFO: Completed: urn:nasa:pds:phx\_ra:data\_derived:sol034  SUCCESS: Completed extraction: observational.xml  SUCCESS: Completed extraction: service.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 ...  INFO: Cleaning Search Service Index  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.0  INFO: Posting: /PDS4tools/search-service/pds/index/search-tools.xml  INFO: Optimizing Search Service index.  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: 156  ==================================================  Processing Time:  -- collection.xml: 0 h, 0 m, 4 s  -- service.xml: 0 h, 0 m, 0 s  -- context.xml: 0 h, 0 m, 5 s  -- observational.xml: 0 h, 0 m, 46 s  -- attribute.xml: 0 h, 0 m, 1 s  -- class.xml: 0 h, 0 m, 0 s  -- document.xml: 0 h, 0 m, 1 s  -- bundle.xml: 0 h, 0 m, 3 s  ==================================================  Total Processing Time: 0 h, 1 m, 2 sEnd of Log  Step 6: ../Screen%20Shot%202017-04-13%20at%2015.19.47.png  Step 7:../Screen%20Shot%202017-10-17%20at%2014.06.07.png |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.16 |
| Test Personnel | Richard Chen |

### Testing for Complete Coverage of PDS4 Level 5 Requirements

The following test cases test all Build 8b functions, including those not covered above. These tests ensure complete verification and validation of Build 8b level 5 requirements.

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| --- | --- |
| 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 reports differences. |
| Test Steps | 1. cd *testDir* 2. catalog -mcompare testCatalog/CORPWS\_0164 testCatalog/CORPWS\_0180   Compare two directories differing in only one file.   1. catalog -c testCatalog/config |
| Test Results | Step 2:  PDS Catalog Ingest Tool Report  Configuration:  Version Version 1.15.0  Date Tue, Apr 17 2018 at 10:50:12 AM  Parameters:  Mode compare  Target(s)  Source = file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/  Target = file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/  Directory Recursion true  Severity Level WARNING  Compare Details:  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/INSTHOST.CAT  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/KEYDS.CAT  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/LRFULLDS.CAT  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/MISSION.CAT  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/PERSON.CAT  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/PROJREF.CAT  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/RAWDS.CAT  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/REF.CAT  SAME: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/RPWSINST.CAT  DIFFERENT: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/VOLDESC.CAT  line 9: Element "VOLUME\_NAME" has different value than source.  Source: line 9 of file:/Users/rchen/Desktop/test/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 11: Element "VOLUME\_ID" has different value than source.  Source: line 11 of file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/VOLDESC.CAT  11c11  < CORPWS\_0164  ----  > CORPWS\_0180  line 15: Element "PUBLICATION\_DATE" has different value than source.  Source: line 15 of file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/VOLDESC.CAT  15c15  < 2011-12-22  ----  > 2013-03-28  line 16: Element "DESCRIPTION" has different value than source.  Source: line 16 of file:/Users/rchen/Desktop/test/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 23: Element "DATA\_SET\_ID" has different value than source.  Source: line 23 of file:/Users/rchen/Desktop/test/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 74: Element "DATA\_SET\_ID" has different value than source.  Source: line 70 of file:/Users/rchen/Desktop/test/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:/Users/rchen/Desktop/test/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:/Users/rchen/Desktop/test/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 1.15.0  Date Tue, Apr 17 2018 at 10:56:21 AM  Parameters:  Mode compare  Target(s)  Source = file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/RAWDS.CAT  Target = file:/Users/rchen/Desktop/test/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 | 2018.04.17 |
| Test Personnel | Richard Chen |

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| 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 1.15.0  Date Wed, Apr 18 2018 at 09:39:29 AM  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/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/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/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/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 Host  Parent File(s): [insthost.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: 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  Parent File(s): [inst.cat]  Begin checking children  End checking children  PASS: Personnel  Parent File(s): [person.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 |
| Comments | Results met success criteria. All warnings and errors are either expected or carried over from PDS3 and do not affect meeting success criteria. |
| Date of Testing | 2018.04.18 |
| Test Personnel | Richard Chen |

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| 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. 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 * storage-client --operation --ingestProduct --productName CatalogTest --productStructure Flat --productTypeName CatalogFile --metadataFile "file:///PDS4tools/storage-service/test/test.txt.met" --refs file:///PDS4tools/storage-service/test/test.txt * storage-query --sql -query "SELECT \* FROM CatalogFile WHERE CAS.ProductName == 'CatalogTest'" -outputFormat '$CAS.ProductId' | storage-delete --read   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:8080/product -v 1 -r c1.out 2. In a browser: <http://localhost:8080/registry-ui> to see registrations. Then click on the row where Object Type is Product\_Instrument\_PDS3 3. Test the product service: copy a productID from c1.out, e.g. the one for the inst: curl -X GET -o x.cat -v 'http://localhost:8080/product/data?productID=*productID'* 4. diff x.cat testCatalog/CORPWS\_0180/RPWSINST.CAT 5. Test the product service’s other function: curl -X GET -o v.zip -v "http://localhost:8080/product/dataset?typeID=urn:pds:CatalogFile" 6. Expand and compare any one of the catalog files: unzip v.zip CORPWS\_0180:VOLDESC.CAT.zip ; unzip C\*zip 7. diff VOLDESC.CAT testCatalog/CORPWS\_0180/VOLDESC.CAT   When >1 voldesc lists the same catalog files (e.g. mission.cat), do not re-register them.   1. catalog testCatalog/CORPWS\_0164 -m ingest -s http://localhost:9000 -T http://localhost:9999 -r c3.out 2. See registration of only voldesc: <http://localhost:8080/registry-ui>   Give good error messages if file listed in voldesc is missing   1. catalog testCatalog/MPC\_review -m ingest -s http://localhost:9000 -T http://localhost:8080/product   Nicely ignore dsmap catalog files.   1. catalog testCatalog/LRO\_diviner -m ingest -s http://localhost:9000 -T http://localhost:8080/product -r c6.out   Quit and give a nice error message when the mode is not specified.   1. catalog testCatalog/CORPWS\_0180 |
| Test Results | Step 1: Ignore brutal command line warnings. c1.out:  PDS Catalog Ingest Tool Report  Configuration:  Version Version 1.15.0  Date Tue, Apr 17 2018 at 11:41:00 AM  Parameters:  Mode ingest  Target file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/  Directory Recursion true  Severity Level INFO  Report File c1.out  Ingest Details:  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/INSTHOST.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:instrument\_host:spacecraft.co::1.0  INFO: Product GUID - urn:uuid:afb25baf-7f4a-48b4-88bb-c2146a6957a0  INFO: Successfully delivered a catalog file to the storage service. productID - e07acca5-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:0a798c83-f282-4d1a-a60d-1758536e1251  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/KEYDS.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:data\_set:data\_set.co-v-e-j-s-ss-rpws-4-summ-key60s-v1.0::1.0  INFO: Product GUID - urn:uuid:8f8d9be6-04b3-4e2b-963f-1ebaadc7874d  INFO: Successfully delivered a catalog file to the storage service. productID - e09be936-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:71320df8-e13d-4857-9274-616ad2f7e66a  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/LRFULLDS.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:data\_set:data\_set.co-v-e-j-s-ss-rpws-3-rdr-lrfull-v1.0::1.0  INFO: Product GUID - urn:uuid:8a64a48b-8c2d-4511-88a2-41d36cb84997  INFO: Successfully delivered a catalog file to the storage service. productID - e0aba0a7-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:cb233603-0c16-4f43-8f42-05c46ee96130  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/MISSION.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens::1.0  INFO: Product GUID - urn:uuid:89265222-a1c6-4c82-9755-bddeca46b2d8  INFO: Successfully delivered a catalog file to the storage service. productID - e0bba638-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:032fb849-30b5-470a-be26-b078d96da93c  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/PERSON.CAT  WARNING: This file is not required to ingest into the registry.  INFO: Successfully delivered a catalog file to the storage service. productID - e0c78d19-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:5cd4b857-91af-4af0-ac29-c7ad851a2084  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/PROJREF.CAT  WARNING: This file is not required to ingest into the registry.  INFO: Successfully delivered a catalog file to the storage service. productID - e0d2146a-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:b336364f-63ba-486f-8208-826ab7074601  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/RAWDS.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:data\_set:data\_set.co-v-e-j-s-ss-rpws-2-refdr-all-v1.0::1.0  INFO: Product GUID - urn:uuid:e9ba2794-5af8-427d-9855-fe8a21f433c8  INFO: Successfully delivered a catalog file to the storage service. productID - e0df0cbb-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:29cd9e32-3997-4227-95d3-b023c478f91e  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/REF.CAT  WARNING: This file is not required to ingest into the registry.  INFO: Successfully delivered a catalog file to the storage service. productID - e0e8d0bc-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:b7df4172-8221-46c1-bea6-2584d1b1134d  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/RPWSINST.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:instrument:instrument.rpws.co::1.0  INFO: Product GUID - urn:uuid:b701aaad-de57-45ef-ab5d-2bec8b96596e  INFO: Successfully delivered a catalog file to the storage service. productID - e0f6b36d-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:20427314-51b4-45ae-a40b-b54eaff61609  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/VOLDESC.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:volume:volume.corpws\_0180\_\_usa\_nasa\_pds\_corpws\_0xxx::1.0  INFO: Product GUID - urn:uuid:c8b6614a-3ceb-46a6-ae93-d6d3a406cc28  INFO: Successfully delivered a catalog file to the storage service. productID - e1029a4e-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:9881481e-9e13-43fa-aea8-2e4d9a116941  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/WBFULLDS.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:data\_set:data\_set.co-v-e-j-s-ss-rpws-2-refdr-wbrfull-v1.0::1.0  INFO: Product GUID - urn:uuid:0c3cc07d-f100-4dbb-bed4-8b99f4a2ade7  INFO: Successfully delivered a catalog file to the storage service. productID - e10dbddf-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:c054c99c-c3f2-45f1-bb98-b64f9dc4b23c  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/WFFULLDS.CAT  INFO: Successfully registered a product. LIDVID - urn:nasa:pds:context\_pds3:data\_set:data\_set.co-v-e-j-s-ss-rpws-2-refdr-wfrfull-v1.0::1.0  INFO: Product GUID - urn:uuid:0d55cd9f-52e8-439c-b794-6253ee6f68cf  INFO: Successfully delivered a catalog file to the storage service. productID - e11a4100-426e-11e8-91ac-0f5bcd89e35f  INFO: Successfully ingested a file object. GUID - urn:uuid:afefe993-3bbd-4b1d-92b7-6596a423b96d  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\_20180417114101  End of Report  Step 2:  Step 3:  Note: Unnecessary use of -X or --request, GET is already inferred.  \* Trying ::1...  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0\* Connected to localhost (::1) port 8080 (#0)  > GET /product/data?productID=e0f6b36d-426e-11e8-91ac-0f5bcd89e35f HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  < HTTP/1.1 200  < Content-Disposition: attachment; filename="RPWSINST.CAT"  < Content-Type: application/vnd.ms-pki.seccat  < Content-Length: 14202  < Date: Tue, 17 Apr 2018 21:34:31 GMT  { [8012 bytes data]  100 14202 100 14202 0 0 1584k 0 --:--:-- --:--:-- --:--:-- 2311k  \* Connection #0 to host localhost left intact  Step 4 shows no differences  Step 5:  Note: Unnecessary use of -X or --request, GET is already inferred.  \* Trying ::1...  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0\* Connected to localhost (::1) port 8080 (#0)  > GET /product/dataset?typeID=urn:pds:CatalogFile HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  < HTTP/1.1 200  < Content-Disposition: attachment; filename="CatalogFile.zip"  < Content-Length: 101521  < Date: Tue, 17 Apr 2018 21:37:06 GMT  { [8053 bytes data]  100 99k 100 99k 0 0 460k 0 --:--:-- --:--:-- --:--:-- 465k  \* Connection #0 to host localhost left intact  Step 6:  Archive: v.zip  inflating: CORPWS\_0180:VOLDESC.CAT.zip  Archive: CORPWS\_0180:VOLDESC.CAT.zip  inflating: VOLDESC.CAT  inflating: CORPWS\_0180:VOLDESC.CAT.met  Step 7 shows no differences  Step 8: c3.out:  PDS Catalog Ingest Tool Report  Configuration:  Version Version 1.15.0  Date Tue, Apr 17 2018 at 02:39:31 PM  Parameters:  Mode ingest  Target file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/  Directory Recursion true  Severity Level WARNING  Report File c3.out  Ingest Details:  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/INSTHOST.CAT  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/KEYDS.CAT  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/LRFULLDS.CAT  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/MISSION.CAT  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/PERSON.CAT  WARNING: This file is not required to ingest into the registry.  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/PROJREF.CAT  WARNING: This file is not required to ingest into the registry.  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/RAWDS.CAT  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/REF.CAT  WARNING: This file is not required to ingest into the registry.  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/RPWSINST.CAT  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/VOLDESC.CAT  PASS: file:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0164/WBFULLDS.CAT  PASS: file:/Users/rchen/Desktop/test/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\_20180417143932  End of Report  Step 9: 5 extra records: the voldesc file, the CORPWS\_0164 product, and the three files not required to ingest into the registry.  Step 10: exit nicely upon discovering a catalog file is missing:  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.  Apr 17, 2018 2:53:41 PM org.apache.oodt.cas.filemgr.datatransfer.LocalDataTransferer 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 11: similar to step 1’s output. Used to die upon hitting dsmap.cat. c6.out::  PDS Catalog Ingest Tool Report  Configuration:  Version Version 1.15.0  Date Tue, Apr 17 2018 at 02:54:35 PM  Parameters:  Mode ingest  Target file: *testDir*/testCatalog/LRO\_diviner/  Directory Recursion true  Severity Level WARNING  Report File c6.out  Ingest Details:  PASS: file: *testDir*/testCatalog/LRO\_diviner/dsmap.cat  WARNING: This file is not required to ingest into the registry.  PASS: file: *testDir*/testCatalog/LRO\_diviner/dsmap\_polar.cat  WARNING: This file is not required to ingest into the registry.  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:  11 of 11 file(s) ingested, 0 skipped  Number of successful file object ingestion: 11  Number of successful storage service ingestion: 11  Number of successful registry ingestion: 7  Name of the registry package: Catalog-Package\_LRODLR\_1001\_20180417145435  End of Report  Step 12:  Exception: No mode specified. 'm' flag must be specified. |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| 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 similar to PRV.1 but with a URL instead of a local file   1. validate -f http://pds-geosciences.wustl.edu/messenger/urn-nasa-pds-izenberg\_pdart14\_meap/data\_eetable/ele\_evt\_8hr\_orbit\_2014-2015.xml |
| Test Results | Step 1: Output is similar to PRV.1’s  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-17T21:57:00Z  Parameters:  Targets [http://pds-geosciences.wustl.edu/messenger/urn-nasa-pds-izenberg\_pdart14\_meap/data\_eetable/ele\_evt\_8hr\_orbit\_2014-2015.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: http://pds-geosciences.wustl.edu/messenger/urn-nasa-pds-izenberg\_pdart14\_meap/data\_eetable/ele\_evt\_8hr\_orbit\_2014-2015.xml  Summary:  0 error(s)  0 warning(s)  End of Report |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| Test Case ID | GEN.2 \*not run for build 8b |
| 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. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1b.xml http://pds-gamma.jpl.nasa.gov/services/registry-pds3 |
| Test Results | Step 1:  \* About to connect() to pds-gamma.jpl.nasa.gov port 80 (#0)  \* Trying 128.149.124.6...  \* connected  \* Connected to pds-gamma.jpl.nasa.gov (128.149.124.6) port 80 (#0)  > POST /services/registry-pds3 HTTP/1.1  > User-Agent: curl/7.24.0 (x86\_64-apple-darwin12.0) libcurl/7.24.0 OpenSSL/0.9.8z zlib/1.2.5  > Host: pds-gamma.jpl.nasa.gov  > Accept: \*/\*  > Content-type:application/xml  > Content-Length: 629  \* upload completely sent off: 629 out of 629 bytes  < HTTP/1.1 403 Forbidden  < Date: Sat, 18 Oct 2014 19:19:49 GMT  < Content-Length: 224  < Connection: close  < Content-Type: text/html; charset=iso-8859-1  <!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">  <html><head>  <title>403 Forbidden</title>  </head><body>  <h1>Forbidden</h1>  <p>You don't have permission to access /services/registry-pds3  on this server.</p>  </body></html>  \* Closing connection #0 |
| Comments | Results met success criteria. |
| Date of Testing |  |
| Test Personnel |  |

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| Test Case ID | GEN.4 \*not ready for build 8b. 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 |  |

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| 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 <https://pds-engineering.jpl.nasa.gov/development/pds4/8.1.0> |
| Test Results | Documents were available and examined. |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| 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. grep -v "SUCCESS\|INFO" h.out | uniq 4. At <http://localhost:8080/registry-ui>, select Registry Service registry-pds4, click “Packages”, select “Harvest-Package\_...”, compare the GUID with Step 2’s output. 5. harvest-search -e "\*.xml" -c harvest-policy-master.xml *testDir*/contextPDS4onlyPHX | grep url: | wc 6. Close the pop-up, select line with “Harvest-Package\_...”, click “Delete” 7. Click “Products” |
| Test Results | Step 3:  PDS Harvest Tool Log  Version Version 1.14.0  Time Tue, Apr 17 2018 at 03:12:46 PM  Target(s) [/Users/rchen/Desktop/test/contextPDS4onlyPHX]  File Inclusions [\*.xml]  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180417151245  Registration Package GUID urn:uuid:549f4d50-2f3f-4c10-810b-32160d7714e7  Summary:  26 of 26 file(s) processed, 0 other file(s) skipped  0 error(s), 0 warning(s)  26 of 26 products registered.  31 of 31 ancillary products registered.  Product Types Registered:  5 Product\_Collection  31 Product\_File\_Repository  20 Product\_Context  1 Product\_Bundle  31 of 31 associations registered.  End of Log  Step 4:  Step 5: # of access URLs that harvest-search creates == # of products + # of ancillary products that harvest registers.  57 342 12062  Step 7: “There is no data to display” |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| 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.3: 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 registry-pds4   In a different terminal window   1. harvest-ctrl --url http://localhost:9001/xmlrpc --operation --isRunning 2. cd *testDir*; mv x/\* contextPDS4onlyPHX; rmdir x 3. In browser, after at most 120 seconds, note changing Num Records. http://localhost:8080/registry-ui/   After Num Records stops increasing   1. harvest-ctrl --url http://localhost:9001/xmlrpc --operation --stop 2. grep "products registered" log.txt 3. On http://localhost:8080/registry-ui/#Packages, delete Harvest-Package\_\*; if verification desired, check GUID against Registration Package GUID in log.txt 4. 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:  26 of 26 new products registered.  31 of 31 new ancillary products registered.  Step 11: “There is no data to display” (same as HVT.1’s step 6) |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| 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. modify *binDir*/harvest/bin/harvest to use registry-pds3 instead of -pds4 4. date; harvest *testDir*/contextPDS3 -c harvest-policy-master.xml -l h.out -e "\*.xml"; date 5. Check for harvested files. <http://localhost:8080/registry-ui/>   This lets SRCH.3 show Archive information   1. harvest *testDir*/testHarv/archivePDS3 -c harvest-policy-master.xml -l h.out; grep -v "SUCCESS\|INFO" h.out |
| Test Results | Step 4: The time to harvest this bundle dropped from 214 minutes in build 5b.  Tue Apr 17 15:37:16 PDT 2018  Tue Apr 17 15:46:58 PDT 2018  The bottom of h.out has (the skipped .xml file is the harvest config file):  Summary:  27302 of 27302 file(s) processed, 0 other file(s) skipped  0 error(s), 8 warning(s)  27294 of 27302 products registered.  27307 of 27307 ancillary products registered.  Product Types Registered:  7161 Product\_Context  2184 Product\_Attribute\_Definition  626 Product\_Instrument\_PDS3  5974 Product\_Volume\_PDS3  1541 Product\_Subscription\_PDS3  13 Product\_Collection  4254 Product\_Target\_PDS3  199 Product\_Instrument\_Host\_PDS3  2293 Product\_Data\_Set\_PDS3  27307 Product\_File\_Repository  1 Product\_Bundle  71 Product\_Mission\_PDS3  89 Product\_Class\_Definition  2888 Product\_Volume\_Set\_PDS3  27307 of 27307 associations registered.  End of Log  Step 5:  Step 6:  PDS Harvest Tool Log  Version Version 1.14.0  Time Tue, Apr 17 2018 at 04:14:30 PM  Target(s) [/Users/rchen/Desktop/test/testHarv/archivePDS3]  Registry Location http://localhost:8080/registry-pds3  Registry Package Name Harvest-Package\_20180417161430  Registration Package GUID urn:uuid:6eb0ec8d-5256-49c9-a487-e94e8a1d46eb  Summary:  1 of 1 file(s) processed, 0 other file(s) skipped  0 error(s), 0 warning(s)  1 of 1 products registered.  1 of 1 ancillary products registered.  Product Types Registered:  1 Product\_Context  1 Product\_File\_Repository  1 of 1 associations registered.  End of Log |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| 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. Clean database as described in RESETREGISTRY in Section 3.1 2. harvest *testDir*/bundle\_geo\_ra -c harvestPolicyNoDoc.xml -l h.out -e "\*.xml" 3. grep -v "SUCCESS\|INFO" h.out | uniq 4. In browser,<http://localhost:8080/registry-ui>, to see many products, then set “Object Type” to “Product\_Document” and hit “Refresh”   Repeat to show nothing more gets registered.   1. harvest *testDir*/bundle\_geo\_ra -c harvestPolicyNoDoc.xml -l h.out -e "\*.xml" 2. <http://localhost:8080/registry-ui>   Run harvest with config file that accepts Product\_Document   1. harvest *testDir*/bundle\_geo\_ra –c harvest-policy-master.xml –l h.out -e "\*.xml" 2. grep -v "WARNING\|INFO" h.out | uniq 3. <http://localhost:8080/registry-ui>. Set “Object Type” to “Product\_Document”. Hit “Refresh” 4. Hit the “Packages” tab. Note the packages are unsorted. 5. Click column headers such as “Name” to see sorting on that field 6. Select both Harvest-\*, hit “Delete” 7. Hit the “Products” tab |
| Test Results | Step 3: Note the SKIPs of Product\_Document:  PDS Harvest Tool Log  Version Version 1.14.0  Time Wed, Apr 18 2018 at 10:18:31 AM  Target(s) [/Users/rchen/Desktop/test/bundle\_geo\_ra]  File Inclusions [\*.xml]  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180418101830  Registration Package GUID urn:uuid:39c7f180-98f5-45c0-8f32-3874c7c65dd5  SKIP: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/activity\_table\_desc.xml] 'Product\_Document' is not an object type found in the policy file.  SKIP: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_dataset.xml] 'Product\_Document' is not an object type found in the policy file.  SKIP: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml] 'Product\_Document' is not an object type found in the policy file.  SKIP: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/readme.xml] 'Product\_Document' is not an object type found in the policy file.  Summary:  169 of 169 file(s) processed, 4 other file(s) skipped  0 error(s), 0 warning(s)  169 of 169 products registered.  334 of 334 ancillary products registered.  Product Types Registered:  1 Product\_XML\_Schema  5 Product\_Collection  120 Product\_Observational  38 Product\_Browse  334 Product\_File\_Repository  4 Product\_Context  1 Product\_Bundle  334 of 334 associations registered.  End of Log  Step 4: Note that Total Records = 503 before filtering  Step 6: Note that still only 503 products are registered  Step 8: Many WARNINGs had “Product already exists”  Summary:  PDS Harvest Tool Log  Version Version 1.14.0  Time Wed, Apr 18 2018 at 10:25:40 AM  Target(s) [/Users/rchen/Desktop/test/bundle\_geo\_ra]  File Inclusions [\*.xml]  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180418102540  Registration Package GUID urn:uuid:54e03754-0f62-47bb-a80f-6bd873ea6e2d  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/activity\_table\_desc.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:activity\_table\_desc::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/activity\_table\_desc.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:activity\_table\_desc:activity\_table\_desc\_xml::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/activity\_table\_desc.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:activity\_table\_desc:activity\_table\_desc.txt::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/activity\_table\_desc.xml] Successfully registered association to 'urn:uuid:6c670f37-9397-4169-9084-eff18c786ce0'  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/activity\_table\_desc.xml] Successfully registered association to 'urn:uuid:e13a92e6-3f56-4c77-aeab-1b7c774eb3bb'  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_dataset.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:ra\_dataset::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_dataset.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:ra\_dataset:ra\_dataset\_xml::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_dataset.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:ra\_dataset:ra\_dataset.txt::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_dataset.xml] Successfully registered association to 'urn:uuid:97c0e842-42c4-4f17-81f6-8c7265a306d6'  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_dataset.xml] Successfully registered association to 'urn:uuid:6132e6f7-5fda-4268-8e5b-b2206e3d0a21'  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:ra\_instrument::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:ra\_instrument:ra\_instrument\_xml::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:ra\_instrument:ra\_instrument.txt::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml] Successfully registered association to 'urn:uuid:eb7816d5-2adb-4987-86f5-41cede927c57'  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml] Successfully registered association to 'urn:uuid:4240e0d0-1910-4af6-b28d-079558fef0a5'  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/readme.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:readme::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/readme.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:readme:readme\_xml::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/readme.xml] Successfully registered product: urn:nasa:pds:phx\_ra:document:readme:readme.txt::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/readme.xml] Successfully registered association to 'urn:uuid:7c747225-9726-421c-9fe0-b98702a714e1'  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/readme.xml] Successfully registered association to 'urn:uuid:e44e0ce7-8b2e-46a8-bf8f-1772649cfea5'  Summary:  173 of 173 file(s) processed, 0 other file(s) skipped  0 error(s), 169 warning(s)  4 of 173 products registered.  8 of 8 ancillary products registered.  Product Types Registered:  4 Product\_Document  8 Product\_File\_Repository  8 of 8 associations registered.  End of Log  Step 9: Note that 1) 515 products are registered and 2) there are 4 Product Documents    Step 11:  Step 12:  Step 13: “There is no data to display” |
| Comments | Results met success criteria.  [PDS-166](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 | 2018.04.18 |
| Test Personnel | Richard Chen |

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| 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*   Using the version of harvest that ingests into registry-pds3, get unlabeled files.   1. harvest -c testHarv/harvestDawnNondata.xml 2. <http://localhost:8080/registry-ui/> shows such files.   Using that version of harvest again, harvest the 4 .LBLs and the files they point to.   1. harvest -c testHarv/harvestDawnData.xml 2. <http://localhost:8080/registry-ui/> includes labelled files |
| Test Results | Step 2:  Step 4:  PDS Harvest Tool Log  Version Version 1.14.0  Time Wed, Apr 18 2018 at 01:56:57 PM  Target(s) [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B]  Target Type PDS3 Files Only  File Exclusions [\*.cat, \*.CAT]  Severity Level INFO  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest Package Example PDS3 Unlabeled Files  Registration Package GUID urn:uuid:6a83198d-10d9-43cf-a0e6-a2ebf43531bb  INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/AAREADME.TXT] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/AAREADME.TXT] Successfully registered product: urn:nasa:pds:nondata:aareadme.txt::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/AAREADME.TXT] Product has the following GUID: urn:uuid:480655c0-430f-4ad8-9b9d-05026291d4ce  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/ERRATA.TXT] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/ERRATA.TXT] Successfully registered product: urn:nasa:pds:nondata:errata.txt::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/ERRATA.TXT] Product has the following GUID: urn:uuid:c60a2687-f656-4ef1-a568-607de2540cbb  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/MD5\_CHECKSUM.TXT] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/MD5\_CHECKSUM.TXT] Successfully registered product: urn:nasa:pds:nondata:md5\_checksum.txt::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/MD5\_CHECKSUM.TXT] Product has the following GUID: urn:uuid:1702c912-6e31-4de0-854c-3c1cfc4cb0c0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.TAB] Begin processing.  SKIP: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.TAB] An associated label file exists '/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDXINFO.TXT] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDXINFO.TXT] Successfully registered product: urn:nasa:pds:nondata:index:indxinfo.txt::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDXINFO.TXT] Product has the following GUID: urn:uuid:5941c554-a700-4cd7-bf77-3cb696fcf06f  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/EXTRINFO.TXT] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/EXTRINFO.TXT] Successfully registered product: urn:nasa:pds:nondata:extras:extrinfo.txt::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/EXTRINFO.TXT] Product has the following GUID: urn:uuid:87b33208-3a6a-447f-a16c-cd1430afb9c5  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/GRaND\_Acronyms\_130711.pdf] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/GRaND\_Acronyms\_130711.pdf] Successfully registered product: urn:nasa:pds:nondata:extras:grand\_acronyms\_130711.pdf::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/GRaND\_Acronyms\_130711.pdf] Product has the following GUID: urn:uuid:5f97d92e-acd9-4d67-b692-ac8578ac1d73  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/SOFTWARE/Extras\_Guide\_130711.pdf] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/SOFTWARE/Extras\_Guide\_130711.pdf] Successfully registered product: urn:nasa:pds:nondata:extras:software:extras\_guide\_130711.pdf::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/SOFTWARE/Extras\_Guide\_130711.pdf] Product has the following GUID: urn:uuid:9d761a4f-e79f-4140-836d-e6c4b0ee2598  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/SOFTWARE/plot\_grand\_L2.pro] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/SOFTWARE/plot\_grand\_L2.pro] Successfully registered product: urn:nasa:pds:nondata:extras:software:plot\_grand\_l2.pro::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/EXTRAS/SOFTWARE/plot\_grand\_L2.pro] Product has the following GUID: urn:uuid:6b12b77b-edb4-4286-8ee2-8d6446eb90cd  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_FIG1.JPG] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_FIG1.JPG] Successfully registered product: urn:nasa:pds:nondata:document:sis:dawn\_grand\_sis\_fig1.jpg::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_FIG1.JPG] Product has the following GUID: urn:uuid:2dfa5e1e-5671-4d94-a5ec-9bbb4f09af72  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_FIG2.JPG] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_FIG2.JPG] Successfully registered product: urn:nasa:pds:nondata:document:sis:dawn\_grand\_sis\_fig2.jpg::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_FIG2.JPG] Product has the following GUID: urn:uuid:63202722-1bf1-4ddf-bbe1-8cb439d5c25c  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.HTM] Begin processing.  SKIP: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.HTM] An associated label file exists '/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.PDF] Begin processing.  SKIP: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.PDF] An associated label file exists '/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.TAB] Begin processing.  SKIP: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.TAB] An associated label file exists '/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.TAB] Begin processing.  SKIP: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.TAB] An associated label file exists '/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/CATALOG/CATINFO.TXT] Begin processing.  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/CATALOG/CATINFO.TXT] Successfully registered product: urn:nasa:pds:nondata:catalog:catinfo.txt::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/CATALOG/CATINFO.TXT] Product has the following GUID: urn:uuid:643841bf-3cfe-4e10-ada3-1026f03feb15  Summary:  11 of 11 file(s) processed, 5 other file(s) skipped  0 error(s), 0 warning(s)  0 of 0 products registered.  11 of 11 ancillary products registered.  Product Types Registered:  11 Product\_File\_Repository  0 of 0 associations registered.  End of Log  Step 5:  Step 6:  PDS Harvest Tool Log  Version Version 1.14.0  Time Wed, Apr 18 2018 at 02:04:03 PM  Target(s) [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B]  Target Type PDS3  File Inclusions [\*.LBL, \*.lbl]  Severity Level INFO  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest Package Example PDS3 Labeled Files  Registration Package GUID urn:uuid:8dc1db37-07e2-46d6-9b7d-83a476837ef6  INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Begin processing.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Creating logical identifier.  WARNING: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] DATA\_SET\_ID not found.  WARNING: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] INSTRUMENT\_ID not found.  WARNING: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] PRODUCT\_ID not found.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Created the following logical identifier: urn:nasa:pds:data:index  WARNING: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] DATA\_SET\_ID not found.  WARNING: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] PRODUCT\_ID not found.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Created title:  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Successfully registered product: urn:nasa:pds:data:index::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Product has the following GUID: urn:uuid:3ce799bb-ec32-4c11-904f-b1b8bbd1d6fb  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Capturing file object metadata for INDEX.LBL  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Capturing file object metadata for INDEX.TAB  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Successfully registered product: urn:nasa:pds:data:index:INDEX.LBL::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Product has the following GUID: urn:uuid:9e83b765-4199-4aa9-95c7-37e1b99e5310  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Successfully registered product: urn:nasa:pds:data:index:INDEX.TAB::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Product has the following GUID: urn:uuid:42bb2ba5-7175-4644-94b7-4558a92b367b  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Successfully registered association to 'urn:uuid:9e83b765-4199-4aa9-95c7-37e1b99e5310'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Association has the following GUID: urn:uuid:c74d3bf9-4d8b-494d-bfa9-229aa33af5e9  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Successfully registered association to 'urn:uuid:42bb2ba5-7175-4644-94b7-4558a92b367b'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/INDEX/INDEX.LBL] Association has the following GUID: urn:uuid:4228e3ee-cb37-49c9-ac6e-db9ba47637b8  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Begin processing.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Creating logical identifier.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Created the following logical identifier: urn:nasa:pds:data:dawn-m-grand-2-edr-mars-counts-v1.0:grand:dawn\_grand\_sis:document:sis  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Created title: DAWN-M-GRAND-2-EDR-MARS-COUNTS-V1.0 DAWN\_GRAND\_SIS  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered product: urn:nasa:pds:data:dawn-m-grand-2-edr-mars-counts-v1.0:grand:dawn\_grand\_sis:document:sis::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Product has the following GUID: urn:uuid:74bb6a6e-b677-48fd-b92c-2f1bcd7aa1bf  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Capturing file object metadata for DAWN\_GRAND\_SIS\_R2\_4.LBL  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Capturing file object metadata for DAWN\_GRAND\_SIS\_R2\_4.PDF  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Capturing file object metadata for DAWN\_GRAND\_SIS\_R2\_4.HTM  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Capturing file object metadata for DAWN\_GRAND\_SIS\_FIG1.JPG  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Capturing file object metadata for DAWN\_GRAND\_SIS\_FIG2.JPG  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered product: urn:nasa:pds:data:dawn-m-grand-2-edr-mars-counts-v1.0:grand:dawn\_grand\_sis:document:sis:DAWN\_GRAND\_SIS\_R2\_4.LBL::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Product has the following GUID: urn:uuid:a9f05ceb-2c08-4a00-b16e-8a2f075f0edc  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered product: urn:nasa:pds:data:dawn-m-grand-2-edr-mars-counts-v1.0:grand:dawn\_grand\_sis:document:sis:DAWN\_GRAND\_SIS\_R2\_4.PDF::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Product has the following GUID: urn:uuid:74da2649-bb7b-4ebc-8d22-6ca1720bb666  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered product: urn:nasa:pds:data:dawn-m-grand-2-edr-mars-counts-v1.0:grand:dawn\_grand\_sis:document:sis:DAWN\_GRAND\_SIS\_R2\_4.HTM::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Product has the following GUID: urn:uuid:1f7a2a76-9a6f-4472-8305-033f14160b33  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered product: urn:nasa:pds:data:dawn-m-grand-2-edr-mars-counts-v1.0:grand:dawn\_grand\_sis:document:sis:DAWN\_GRAND\_SIS\_FIG1.JPG::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Product has the following GUID: urn:uuid:f3217547-638c-458d-98f9-6e0037fa0f1b  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered product: urn:nasa:pds:data:dawn-m-grand-2-edr-mars-counts-v1.0:grand:dawn\_grand\_sis:document:sis:DAWN\_GRAND\_SIS\_FIG2.JPG::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Product has the following GUID: urn:uuid:944d24fb-102e-43b4-8f67-a32e4841607b  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered association to 'urn:uuid:a9f05ceb-2c08-4a00-b16e-8a2f075f0edc'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Association has the following GUID: urn:uuid:2e1b0b92-4744-4985-841b-07445dfa7a5c  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered association to 'urn:uuid:74da2649-bb7b-4ebc-8d22-6ca1720bb666'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Association has the following GUID: urn:uuid:8a6dccb3-f5cd-42c2-8f0f-101d030ceaff  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered association to 'urn:uuid:1f7a2a76-9a6f-4472-8305-033f14160b33'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Association has the following GUID: urn:uuid:f33d7483-bd4c-49a4-b94c-58d24d840e05  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered association to 'urn:uuid:f3217547-638c-458d-98f9-6e0037fa0f1b'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Association has the following GUID: urn:uuid:fc3f7618-bec2-41c0-a266-8c731092b6f8  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Successfully registered association to 'urn:uuid:944d24fb-102e-43b4-8f67-a32e4841607b'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DOCUMENT/SIS/DAWN\_GRAND\_SIS\_R2\_4.LBL] Association has the following GUID: urn:uuid:9a284dd4-bb7d-485b-8c8c-3dc6d9b59557  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Begin processing.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Creating logical identifier.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Created the following logical identifier: urn:nasa:pds:data:dawn-a-grand-3-rdr-ceres-counts-v1.0:grand:grd-l1b-151023-151216\_160816-ctl-bgoc:data  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Created title: DAWN-A-GRAND-3-RDR-CERES-COUNTS-V1.0 GRD-L1B-151023-151216\_160816-CTL-BGOC  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Successfully registered product: urn:nasa:pds:data:dawn-a-grand-3-rdr-ceres-counts-v1.0:grand:grd-l1b-151023-151216\_160816-ctl-bgoc:data::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Product has the following GUID: urn:uuid:7ccacd14-4cc4-42f4-a36c-118e6a7ab098  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Capturing file object metadata for GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Capturing file object metadata for GRD-L1B-151023-151216\_160816-CTL-BGOC.TAB  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Successfully registered product: urn:nasa:pds:data:dawn-a-grand-3-rdr-ceres-counts-v1.0:grand:grd-l1b-151023-151216\_160816-ctl-bgoc:data:GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Product has the following GUID: urn:uuid:38256eee-51bc-415a-8270-2c7a60010bee  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Successfully registered product: urn:nasa:pds:data:dawn-a-grand-3-rdr-ceres-counts-v1.0:grand:grd-l1b-151023-151216\_160816-ctl-bgoc:data:GRD-L1B-151023-151216\_160816-CTL-BGOC.TAB::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Product has the following GUID: urn:uuid:3a8e9b0f-6682-453d-8d66-30c28c4ca27d  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Successfully registered association to 'urn:uuid:38256eee-51bc-415a-8270-2c7a60010bee'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Association has the following GUID: urn:uuid:68b89af1-a386-4fb1-8e3b-4f2afc5e0033  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Successfully registered association to 'urn:uuid:3a8e9b0f-6682-453d-8d66-30c28c4ca27d'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Association has the following GUID: urn:uuid:91944baf-ec73-4688-bcce-9b9cf7f04885  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Begin processing.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Creating logical identifier.  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Created the following logical identifier: urn:nasa:pds:data:dawn-a-grand-3-rdr-ceres-counts-v1.0:grand:grd-l1b-151023-151216\_160816-epg:data  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Created title: DAWN-A-GRAND-3-RDR-CERES-COUNTS-V1.0 GRD-L1B-151023-151216\_160816-EPG  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Successfully registered product: urn:nasa:pds:data:dawn-a-grand-3-rdr-ceres-counts-v1.0:grand:grd-l1b-151023-151216\_160816-epg:data::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Product has the following GUID: urn:uuid:9c57538f-51d3-453d-8453-b4f97ff5974e  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Capturing file object metadata for GRD-L1B-151023-151216\_160816-EPG.LBL  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Capturing file object metadata for GRD-L1B-151023-151216\_160816-EPG.TAB  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Successfully registered product: urn:nasa:pds:data:dawn-a-grand-3-rdr-ceres-counts-v1.0:grand:grd-l1b-151023-151216\_160816-epg:data:GRD-L1B-151023-151216\_160816-EPG.LBL::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Product has the following GUID: urn:uuid:e102092d-1a0a-459f-9b83-1abf1fe522d7  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Successfully registered product: urn:nasa:pds:data:dawn-a-grand-3-rdr-ceres-counts-v1.0:grand:grd-l1b-151023-151216\_160816-epg:data:GRD-L1B-151023-151216\_160816-EPG.TAB::1.0  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Product has the following GUID: urn:uuid:57d51a74-b31e-440a-9196-3e8d32b00346  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Successfully registered association to 'urn:uuid:e102092d-1a0a-459f-9b83-1abf1fe522d7'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Association has the following GUID: urn:uuid:e54e3753-7648-4088-a5c8-ee841d7f67b7  SUCCESS: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Successfully registered association to 'urn:uuid:57d51a74-b31e-440a-9196-3e8d32b00346'  INFO: [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Association has the following GUID: urn:uuid:943b9bd9-9a95-49f5-8df2-69ab998a5b96  Summary:  4 of 4 file(s) processed, 0 other file(s) skipped  0 error(s), 5 warning(s)  4 of 4 products registered.  11 of 11 ancillary products registered.  Product Types Registered:  11 Product\_File\_Repository  4 Product\_Proxy\_PDS3  11 of 11 associations registered.  End of Log  Step 7: |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.18 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVT.7 |
| Description | Test bug fixes to harvest. |
| Requirements | PASS No specific functional requirement. |
| Success Criteria | The registry shows the harvested products. |
| Test Steps | Test URL in harvest config file with ‘?’, LID ending in .xml, <title> with many spaces   1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd *testDir* 3. diff harvest-policy-master.xml harvest388.xml ; echo END\_DIFF\_11111 ; diff bundleLID/data\_test/scraping/pit\_test\_scraping.xml bundle\_geo\_ra/data\_test/scraping/pit\_test\_scraping.xml; echo END\_DIFF\_22222 ; diff bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml bundle\_geo\_ra/data\_test/scraping/pit\_test\_scraping\_pic2.xml 4. harvest *testDir*/bundleLID/data\_test/scraping -c harvest388.xml -e "\*.xml" | grep -v INFO: 5. On <http://localhost:8080/registry-ui/>, notice the automatically generated LIDs for label files have “\_xml” 6. Select any row, probably the different one, to see Access URL. 7. Another view, more slot-based: <http://localhost:8080/registry-pds4/extrinsics?lid=urn:nasa:pds:phx_ra:data_test:pit_test_scraping_pic1> shows the two Product\_Browse with the same LID 8. On <http://localhost:8080/registry-ui/>, select the two with LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1 and set one to Approved and one to Deprecated. 9. mkdir x; cp bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.\* x; mv x/pit\_test\_scraping\_pic1.xml x/pit\_test\_scraping\_pic44.xml Then edit the .xml file to change version\_id from 1.0 to 4.4 10. harvest *testDir*/x -c harvest388.xml -e "\*.xml" 11. On <http://localhost:8080/registry-ui/>, see that third entry with LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1 has Status “Submitted”. 12. rm –r x/ 13. Click “Associations”, Note the few with non-null “Source LID”. Click “Packages”. Delete both “Harvest-Package\_…” 14. Click “Associations”. The ones for this harvest should be gone.   For removing schemes and classifications via deleting their package   1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd *testDir* 3. On <http://localhost:8080/registry-ui/>, “Associations”, “Schemes”, “Packages” 4. Delete all 4 packages 5. Click “Associations” and “Schemes” again |
| Test Results | Step 3:  27c27  < <baseUrl>http://localhost:8080</baseUrl>  ---  > <baseUrl>http://testWeirdChars.com/download?x=y&amp;a=b</baseUrl>  END\_DIFF\_11111  10c10  < <logical\_identifier>urn:nasa:pds:phx\_ra:data\_test:pit\_test.xml</logical\_identifier>  ---  > <logical\_identifier>urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping</logical\_identifier>  END\_DIFF\_22222  10,16c10,12  < <logical\_identifier>urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1</logical\_identifier> <!--same as other -->  < <version\_id>1.2</version\_id>  < <title>add uselesss pit\_test\_scraping\_pic2  < and arbitray  < spaces  <  < </title>  ---  > <logical\_identifier>urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic2</logical\_identifier>  > <version\_id>1.0</version\_id>  > <title>pit\_test\_scraping\_pic2</title>  Step 4: harvest rejects LIDs ending in “.xml”.  PDS Harvest Tool Log  Version Version 1.14.0  Time Wed, Apr 18 2018 at 03:01:07 PM  Target(s) [/Users/rchen/Desktop/test/bundleLID/data\_test/scraping]  File Inclusions [\*xml]  Severity Level INFO  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180418150107  Registration Package GUID urn:uuid:d974b9b1-d2db-41e2-8e3b-fb1e692c513b  ERROR: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping.xml] Lid cannot end in '.xml': urn:nasa:pds:phx\_ra:data\_test:pit\_test.xml  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1::1.0  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1:pit\_test\_scraping\_pic1\_xml::1.0  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1:pit\_test\_scraping\_pic1.jpg::1.0  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml] Successfully registered association to 'urn:uuid:84a13dc2-c2ca-46dd-97e6-b8f1f231cc10'  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml] Successfully registered association to 'urn:uuid:cc1a5c28-7819-492e-b1bb-81581a331001'  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1::1.2  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1:pit\_test\_scraping\_pic2\_xml::1.2  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1:pit\_test\_scraping\_pic2.jpg::1.2  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml] Successfully registered association to 'urn:uuid:b23fe26c-605c-4ab1-bd21-13d2688c078a'  SUCCESS: [*testDir*/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml] Successfully registered association to 'urn:uuid:c488e62f-1a66-4ec9-af0f-be355f67d7d4'  Summary:  3 of 3 file(s) processed, 0 other file(s) skipped  1 error(s), 0 warning(s)  2 of 2 products registered.  4 of 4 ancillary products registered.  Product Types Registered:  2 Product\_Browse  4 Product\_File\_Repository  4 of 4 associations registered.  End of Log  Step 5: harvest (registry?) converts automatically generated products with LIDs ending in “\*.xml” to “\_xml”. Field “Name” handles extra spaces.  Step 6: URLs with question marks allowed.    Step 7 shows numFound returns correctly.    Step 8:../../../../../../Desktop/Screen%20Shot%202017-04-20%20at%2  Step 10:  PDS Harvest Tool Log  Version Version 1.14.0  Time Wed, Apr 18 2018 at 04:25:52 PM  Target(s) [/Users/rchen/Desktop/test/x]  File Inclusions [\*.xml]  Severity Level INFO  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180418162552  Registration Package GUID urn:uuid:7c407147-e9df-4e43-9191-e412206ad986  INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Begin processing.  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] line 26: Mapping reference type 'browse\_to\_data' to 'data\_ref'.  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Setting LID-based association, 'urn:nasa:pds:phx\_ra:document:RA\_dataset', under slot name 'data\_ref'.  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Created access url: http://testWeirdChars.com/download?x=y&a=b/x/pit\_test\_scraping\_pic44.xml  SUCCESS: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1::4.4  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Product has the following GUID: urn:uuid:8a51b95c-63d2-444e-b3ea-0b140dd32c0b  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Capturing file information for pit\_test\_scraping\_pic44.xml  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Capturing file object metadata for pit\_test\_scraping\_pic1.jpg  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] line 30: Setting file type for the file object 'pit\_test\_scraping\_pic1.jpg' to 'Browse'  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Created access url: http://testWeirdChars.com/download?x=y&a=b/x/pit\_test\_scraping\_pic44.xml  SUCCESS: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1:pit\_test\_scraping\_pic44\_xml::4.4  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Product has the following GUID: urn:uuid:923123d6-0c6b-4355-980b-11ee70f4fb31  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Created access url: http://testWeirdChars.com/download?x=y&a=b/x/pit\_test\_scraping\_pic1.jpg  SUCCESS: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Successfully registered product: urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1:pit\_test\_scraping\_pic1.jpg::4.4  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Product has the following GUID: urn:uuid:5f6f856d-9e94-47c5-ac25-2b31a845cdc6  SUCCESS: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Successfully registered association to 'urn:uuid:923123d6-0c6b-4355-980b-11ee70f4fb31'  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Association has the following GUID: urn:uuid:340b328f-5917-48d0-b42d-85bd13ff3703  SUCCESS: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Successfully registered association to 'urn:uuid:5f6f856d-9e94-47c5-ac25-2b31a845cdc6'  INFO: [/Users/rchen/Desktop/test/x/pit\_test\_scraping\_pic44.xml] Association has the following GUID: urn:uuid:a5710b4e-c403-4b07-837b-139966303b06  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:  1 Product\_Browse  2 Product\_File\_Repository  2 of 2 associations registered.  End of Log  Step 11: In early versions, the Status was not “Submitted”  Step 13:  Step 14 should show no associations from any harvest  Step 17:  Step 19: Both Schemes and Associations should be empty.  ../../Users/rchen/Desktop/Screen%20Shot%202016-04-21%20at%2011  ../../Users/rchen/Desktop/Screen%20Shot%202016-04-21%20at%2011 |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.18 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVT.8 |
| Description | Test new capabilities of harvest. |
| Requirements | PASS No specific functional requirement. |
| Success Criteria | The registry shows the harvested products. |
| Test Steps | Test URL in harvest config file with ‘?’, LID ending in .xml, <title> with many spaces   1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd *testDir*   harvestAtmV1/ and …V2/ show NAIF’s versioning of a growing ATM dataset.   1. diff harvestAtmV1/checksum.bad harvestAtmV2/checksum.works 2. validate -f -M harvestAtmV1/checksum.bad -t harvestAtmV1 3. harvest *testDir*/harvestAtmV1 -c harvestAtmV1.xml -e "\*.xml" -l h1.out 4. At <http://localhost:8080/registry-ui/>, select registry-pds4/, then “Object Type” to “Product\_Observational”, then hit “Refresh” 5. validate -f -M harvestAtmV2/checksum.works -t harvestAtmV2 6. harvest *testDir*/harvestAtmV2 -c harvestAtmV2.xml -e "\*.xml" -l h2.out 7. repeat step 6 |
| Test Results | Step 3: line 1 has the debateable leading \. One line has an all CAPS checksum  1c1  < a9e18e8e7bc034f69c77e7aeee114fa0 \bundle\_v001.xml  ---  > 3d20c6cecfb18f6f2421d72a031b1e1d bundle\_v002.xml  3a4,5  > 9209d2f4b6b55b9391686c2c9567f04e data\_mer1\collection\_v002.csv  > e8d92e26de80b508be15833a1dc1f25c data\_mer1\collection\_v002.xml  10,13c12,17  < 7b69a8dc6136ddd98b4da378441dbc3c data\_mer2\sol0013\a0013\_p236402\_01\_01v04.qub  < 194601535dca45f7b587b7786790d7eb data\_mer2\sol0013\a0013\_p236402\_01\_01v04.xml  < ed1398a702ae0dae28ed13a98ceb832e data\_mer2\sol1245\a1245\_p276309\_02\_02v01.qub  < 5d013088de380339795b8627b50d97b1 data\_mer2\sol1245\a1245\_p276309\_02\_02v01.xml  ---  > 1c095f0a7cfc33908e29d8860c6cbd7a data\_mer2\collection\_v002.csv  > 5dea8f9e6af0adfc2d3bfcd0bdb351a9 data\_mer2\collection\_v002.xml  > 7b69a8dc6136ddd98b4da378441dbc3c data\_mer2\sol0013/a0013\_p236402\_01\_01v04.qub  > 194601535dca45f7b587b7786790d7eb data\_mer2\sol0013/a0013\_p236402\_01\_01v04.xml  > ed1398a702ae0dae28ed13a98ceb832e data\_mer2\sol1245/a1245\_p276309\_02\_02v01.qub  > 5d013088de380339795b8627b50d97b1 data\_mer2\sol1245/a1245\_p276309\_02\_02v01.xml  Step 4:  PDS Validate Tool Report  Version 1.13.0  Date 2018-04-19T07:56:39Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/harvestAtmV1/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Checksum Manifest File file:/Users/rchen/Desktop/test/harvestAtmV1/checksum.bad  Manifest File Base Path file:/Users/rchen/Desktop/test/harvestAtmV1/  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/harvestAtmV1/bundle\_v001.xml  ERROR No checksum found in the manifest for 'file:/Users/rchen/Desktop/test/harvestAtmV1/bundle\_v001.xml'  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/data\_mer1/collection\_v001.xml  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/data\_mer1/sol0011/b0011\_p237201\_01\_01v02.xml  FAIL: file:/Users/rchen/Desktop/test/harvestAtmV1/data\_mer2/collection\_v001.xml  ERROR Generated checksum '0d0ddeeaa2036ebb69cc4aeb30e11203' does not match supplied checksum '0D0DDEEAA2036EBB69CC4AEB30E11203' in the manifest for 'file:/Users/rchen/Desktop/test/harvestAtmV1/data\_mer2/collection\_v001.xml'  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/data\_mer2/sol0013/a0013\_p236402\_01\_01v04.xml  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/document/collection\_document\_inventory.xml  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/document/pancam\_instrument\_description.xml  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/miscellaneous/collection\_misc\_inventory.xml  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/miscellaneous/mer1\_cube\_list.xml  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/miscellaneous/mer2\_cube\_list.xml  Summary:  2 error(s)  0 warning(s)  End of Report  Step 5: The interesting parts of h1.out:  PDS Harvest Tool Log  Version Version 1.14.0  Time Thu, Apr 19 2018 at 12:59:19 AM  Target(s) [/Users/rchen/Desktop/test/harvestAtmV1]  File Inclusions [\*.xml]  Severity Level INFO  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180419005918  Registration Package GUID urn:uuid:5892a21d-4139-4720-9f7c-35341b4e31e2  Checksum Manifest File /Users/rchen/Desktop/test/harvestAtmV1/checksum.bad  Manifest File Base Path /Users/rchen/Desktop/test/harvestAtmV1INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1  INFO: [/Users/rchen/Desktop/test/harvestAtmV1/checksum.bad] Processing checksum manifest.  INFO: [/Users/rchen/Desktop/test/harvestAtmV1/bundle\_v001.xml] Begin processing.  INFO: [/Users/rchen/Desktop/test/harvestAtmV1/bundle\_v001.xml] line 54: Mapping reference type 'bundle\_to\_investigation' to 'investigation\_ref'.  [snip…]  WARNING: [/Users/rchen/Desktop/test/harvestAtmV1/data\_mer2/collection\_v001.xml] Generated checksum '0d0ddeeaa2036ebb69cc4aeb30e11203' does not match supplied checksum '0D0DDEEAA2036EBB69CC4AEB30E11203' in the manifest for file object '/Users/rchen/Desktop/test/harvestAtmV1/data\_mer2/collection\_v001.xml'.  [snip…]  SUCCESS: [/Users/rchen/Desktop/test/harvestAtmV1/data\_mer1/sol0011/b0011\_p237201\_01\_01v02.xml] Successfully registered association to 'urn:uuid:0746d9df-54ca-4858-9373-e129b51ed7a7'  INFO: [/Users/rchen/Desktop/test/harvestAtmV1/data\_mer1/sol0011/b0011\_p237201\_01\_01v02.xml] Association has the following GUID: urn:uuid:1372402a-4c77-4d6e-971e-02c30c6aa9a1  Summary:  10 of 10 file(s) processed, 0 other file(s) skipped  0 error(s), 1 warning(s)  10 of 10 products registered.  19 of 19 ancillary products registered.  Product Types Registered:  4 Product\_Collection  1 Product\_Document  2 Product\_Observational  2 Product\_Ancillary  19 Product\_File\_Repository  1 Product\_Bundle  18 of 19 generated checksums matched their supplied value in the manifest, 0 value(s) not checked.  0 of 0 generated checksums matched the supplied value in their product label, 19 value(s) not checked.  19 of 19 associations registered.  End of Log  Step 6: (snipped from bottom: “Total Records: 29”)  Step 7: very similar to the output of step 4  Step 8:The interesting parts of h2.out:  PDS Harvest Tool Log  Version Version 1.14.0  Time Thu, Apr 19 2018 at 01:04:49 AM  Target(s) [/Users/rchen/Desktop/test/harvestAtmV2]  File Inclusions [\*.xml]  Severity Level INFO  Registry Location http://localhost:8080/registry-pds4  Registry Package Name Harvest-Package\_20180419010449  Registration Package GUID urn:uuid:e690a716-faf6-4ddf-ac98-bbca741e4f0e  Checksum Manifest File /Users/rchen/Desktop/test/harvestAtmV2/checksum.works  Manifest File Base Path /Users/rchen/Desktop/test/harvestAtmV2  INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1  INFO: [/Users/rchen/Desktop/test/harvestAtmV2/checksum.works] Processing checksum manifest.  INFO: [/Users/rchen/Desktop/test/harvestAtmV2/bundle\_v001.xml] Begin processing.  [snip…]  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/bundle\_v001.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/miscellaneous/collection\_misc\_inventory.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:misc::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/miscellaneous/mer1\_cube\_list.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:misc:mer1\_cube\_list::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/miscellaneous/mer2\_cube\_list.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:misc:mer2\_cube\_list::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/document/collection\_document\_inventory.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:document::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/document/pancam\_instrument\_description.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:document:pancam\_inst::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/data\_mer2/collection\_v001.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:mer2::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/data\_mer2/sol0013/a0013\_p236402\_01\_01v04.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:mer2:a0013\_p236402\_01\_01v04::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/data\_mer1/collection\_v001.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:mer1::1.0  WARNING: [/Users/rchen/Desktop/test/harvestAtmV2/data\_mer1/sol0011/b0011\_p237201\_01\_01v02.xml] Product already exists: urn:nasa:pds:mer\_pancam\_photometry:mer1:b0011\_p237201\_01\_01v02::1.0  [snip…]  Summary:  15 of 15 file(s) processed, 0 other file(s) skipped  0 error(s), 10 warning(s)  5 of 15 products registered.  9 of 9 ancillary products registered.  Product Types Registered:  2 Product\_Collection  2 Product\_Observational  9 Product\_File\_Repository  1 Product\_Bundle  9 of 9 generated checksums matched their supplied value in the manifest, 0 value(s) not checked.  0 of 0 generated checksums matched the supplied value in their product label, 9 value(s) not checked.  9 of 9 associations registered.  End of Log  Step 9: (snipped from bottom: “Total Records: 43”) |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.19 |
| Test Personnel | Richard Chen |

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| Test Case ID | MOD.1 |
| Description | Use LDDTool to create local data dictionaries |
| Requirements | PASS L5.SCH.1: The service shall provide a user interface for entering of queries and display of search results |
| Success Criteria | Validate uses the created local data dictionary to validate a label. |
| Test Steps | 1. cd *testDir*/testLDD 2. validate -x ../PDS4\_PDS\_1A00.xsd -S ../PDS4\_PDS\_1A00.sch -t nsyt\_maro.xml 3. lddtool -pl ingest\_ldd.xml   At line 25 of ingest\_ldd\_INSIGHT\_0510.xsd (i.e. before <xs:complexType name="Observation\_Information">), insert:  <xs:element name="Observation\_Information" type="insight:Observation\_Information"/>   1. validate -x ../PDS4\_PDS\_1A00.xsd ingest\_ldd\_INSIGHT\_0510.xsd -S ../PDS4\_PDS\_1A00.sch ingest\_ldd\_INSIGHT\_0510.sch -t nsyt\_maro.xml 2. rm ingest\_ldd\_INSIGHT\* |
| Test Results | Step 2:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-19T08:18:53Z  Parameters:  Targets [file:*testDir*/testLDD/nsyt\_maro.xml]  User Specified Schemas [file:*testDir*/PDS4\_PDS\_1A00.xsd]  User Specified Schematrons [file:*testDir*/PDS4\_PDS\_1A00.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:*testDir*/testLDD/nsyt\_maro.xml  ERROR line 113, 46: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'insight:Observation\_Information'.  Summary:  1 error(s)  0 warning(s)  End of Report  Step 3:  >>info - LDDTOOL Version: 0.2.1.3  >>info - Date: Mon Apr 30 16:14:55 PDT 2018  >>info - JAVAHOME: /Library/Java/JavaVirtualMachines/jdk1.8.0\_101.jdk/Contents/Home  >>info - PARENT\_DIR: /PDS4tools/lddtool  >>info - SCRIPT\_DIR: /PDS4tools/lddtool/bin  >>info - LIB\_DIR: /PDS4tools/lddtool/lib  >>info - Found input file: ingest\_ldd.xml  >>info - Found required file: /PDS4tools/lddtool/Data/MDPTNConfigClassDisp.xml  >>info - Configured Steward/NameSpaceId Pairs  >>info - cart - cart  >>info - cart - pds  >>info - geo - geom  >>info - img - disp  >>info - img - img  >>info - img - pds  >>info - msn - msn  >>info - ops - pds  >>info - pds - pds  >>info - rings - rings  finding identifier: ---->rings  finding identifier: ---->cart  finding identifier: ---->sbn  finding identifier: ---->msn  finding identifier: ---->ppi  finding identifier: ---->geom  finding identifier: ---->naif  finding identifier: ---->disp  finding identifier: ---->atm  finding identifier: ---->pds  ADDING master:pds  >>info - Found required file: /PDS4tools/lddtool/Data/dd11179.pins  >>info - Found required file: /PDS4tools/lddtool/Data/DMDocument.pins  >>info - Found required file: /PDS4tools/lddtool/Data/UpperModel.pont  >>info - Found required file: /PDS4tools/lddtool/Data/Glossary.pins  >>info - getMasterObjectDict - Found LDDToolSingletonClass - DMDocument.LDDToolSingletonClass.title:Discipline\_Area  >>info - Found required file: /PDS4tools/lddtool/Data/UpperModel.pins  >>info - Generate Schematron Rules - Custom Rule Counts - Before generation  >>info - Rule count for Arr: 60  >>info - Rule count for Map: 60  >>info - Rule count for Id Map: 60  WARNING Header: - New namespace id has been specified:insight  INFO Attribute: <mission\_phase\_name> - This local attribute has a duplicate in the PDS4 data dictionary.  INFO Attribute: <release\_number> - The default minimum value provided by the attribute's data type is being overridden with 1  INFO Attribute: <software\_name> - The default minimum characters provided by the attribute's data type is being overridden with 1  INFO Attribute: <software\_name> - The default maximum characters provided by the attribute's data type is being overridden with 255  INFO Attribute: <software\_version\_id> - The default minimum characters provided by the attribute's data type is being overridden with 1  INFO Attribute: <software\_version\_id> - The default maximum characters provided by the attribute's data type is being overridden with 255  INFO Attribute: <software\_version\_id> - This local attribute has a duplicate in the PDS4 data dictionary.  INFO Attribute: <sol\_number> - The default minimum value provided by the attribute's data type is being overridden with 0  INFO Attribute: <spacecraft\_clock\_start\_count> - The default minimum characters provided by the attribute's data type is being overridden with 1  INFO Attribute: <spacecraft\_clock\_start\_count> - The default maximum characters provided by the attribute's data type is being overridden with 255  INFO Attribute: <spacecraft\_clock\_start\_count> - This local attribute has a duplicate in the PDS4 data dictionary.  INFO Attribute: <spacecraft\_clock\_stop\_count> - The default minimum characters provided by the attribute's data type is being overridden with 1  INFO Attribute: <spacecraft\_clock\_stop\_count> - The default maximum characters provided by the attribute's data type is being overridden with 255  INFO Attribute: <spacecraft\_clock\_stop\_count> - This local attribute has a duplicate in the PDS4 data dictionary.  INFO Attribute: <start\_local\_mean\_solar\_time> - The default minimum characters provided by the attribute's data type is being overridden with 8  INFO Attribute: <start\_local\_mean\_solar\_time> - The default maximum characters provided by the attribute's data type is being overridden with 255  INFO Attribute: <start\_local\_true\_solar\_time> - The default minimum characters provided by the attribute's data type is being overridden with 8  INFO Attribute: <start\_local\_true\_solar\_time> - The default maximum characters provided by the attribute's data type is being overridden with 255  INFO Attribute: <start\_sol\_number> - The default minimum value provided by the attribute's data type is being overridden with 0  INFO Attribute: <start\_solar\_longitude> - The default minimum value provided by the attribute's data type is being overridden with 0  INFO Attribute: <start\_solar\_longitude> - The default maximum value provided by the attribute's data type is being overridden with 360  INFO Attribute: <stop\_local\_mean\_solar\_time> - The default minimum characters provided by the attribute's data type is being overridden with 8  INFO Attribute: <stop\_local\_mean\_solar\_time> - The default maximum characters provided by the attribute's data type is being overridden with 255  INFO Attribute: <stop\_local\_true\_solar\_time> - The default minimum characters provided by the attribute's data type is being overridden with 8  INFO Attribute: <stop\_local\_true\_solar\_time> - The default maximum characters provided by the attribute's data type is being overridden with 255  INFO Attribute: <stop\_sol\_number> - The default minimum value provided by the attribute's data type is being overridden with 0  INFO Attribute: <stop\_solar\_longitude> - The default minimum value provided by the attribute's data type is being overridden with 0  INFO Attribute: <stop\_solar\_longitude> - The default maximum value provided by the attribute's data type is being overridden with 360  INFO Attribute: <instrument\_clock\_start\_count> - The default minimum characters provided by the attribute's data type is being overridden with 1  INFO Attribute: <instrument\_clock\_start\_count> - The default maximum characters provided by the attribute's data type is being overridden with 255  >>info - Checking for attribute consistency - checkSameNameOverRide  >>info - Counts  >>info - Classes: 380  >>info - Attributes: 1438  >>info - Rules: 273    >>info - LDDTOOL Exit  Step 4:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-30T23:18:54Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testLDD/nsyt\_maro.xml]  User Specified Schemas [file:/Users/rchen/Desktop/test/PDS4\_PDS\_1A00.xsd, file:/Users/rchen/Desktop/test/testLDD/ingest\_ldd\_INSIGHT\_0510.xsd]  User Specified Schematrons [file:/Users/rchen/Desktop/test/PDS4\_PDS\_1A00.sch, file:/Users/rchen/Desktop/test/testLDD/ingest\_ldd\_INSIGHT\_0510.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testLDD/nsyt\_maro.xml  Summary:  0 error(s)  0 warning(s)  End of Report |
| Comments | Results met success criteria.  [PDS-518](https://oodt.jpl.nasa.gov/jira/browse/PDS-518), created during testing of build 8a, asks for an explanation of the \*\*\*error\*\*\* output messages. Resolved in 8b.  [PDS-558](https://oodt.jpl.nasa.gov/jira/browse/PDS-558), created during testing of build 8b, complains that this tool produces useless output. Resolved in 8b. |
| Date of Testing | 2018.04.30 |
| Test Personnel | Richard Chen |

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| Test Case ID | POR.1 |
| Description | Use Data Set View (not Search) to browse products |
| Requirements | PASS L5.SCH.1: The service shall provide a user interface for entering of queries and display of search results |
| Success Criteria | Access any registered, individual PDS3 data set (a context product) |
| Test Steps | The registry must have data, and Harvest must have gotten absolute paths as inputs.  Test cases SRCH.3, SRCH.5, or SRCH.6 (typically run after HVT.3) leave PDS3 context products in the registry.   1. In a browser, http://localhost:8080/ds-view/query?identifier=MSL-M-CHEMCAM-LIBS-4/5-RDR-V1.0&resclass=data.dataset |
| Test Results | Step 1: |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.18 |
| Test Personnel | Richard Chen |

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| Test Case ID | POR.2 |
| Description | Submit and browse tools and services. |
| Requirements | PASS 4.2.2: Develop and implement procedures for periodically monitoring the user community interests and practices and verifying the usability of the products in the archive |
| Success Criteria | Upload and download non-core tools |
| Test Steps | Use the web site for EN development   1. ssh pds-gamma 2. ls /home/pds4/staging 3. In a browser, <http://pds-gamma.jpl.nasa.gov/tools/tool-registry/>. Browse. 4. Choose tab “Submit a Tool”. Fill in various false info, e.g. “espn.com” 5. repeat step 2 6. inspect newly created .xml file, which includes “espn.com” |
| Test Results | Step 6:  <?xml version="1.0" encoding="UTF-8"?>  <?xml-model href="http://pds.jpl.nasa.gov/pds4/pds/v1/PDS4\_PDS\_1600.sch" schematypens="http://purl.oclc.org/dsdl/schematron"?>  <Product\_Service  xmlns="http://pds.nasa.gov/pds4/pds/v1"  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://pds.nasa.gov/pds4/pds/v1 https://pds.nasa.gov/pds4/pds/v1/PDS4\_PDS\_1600.xsd">  <Identification\_Area>  <logical\_identifier>urn:nasa:pds:context\_pds3:service:richard's\_test</logical\_identifier>  <version\_id>1.0</version\_id>  <title>Richard's test</title>  <information\_model\_version>1.6.0.0</information\_model\_version>  <product\_class>Product\_Service</product\_class>  <Modification\_History>  <Modification\_Detail>  <modification\_date>2018-04-19</modification\_date>  <version\_id>1.0</version\_id>  <description>A new version.</description>  </Modification\_Detail>  </Modification\_History>  </Identification\_Area>  <Service>  <name>Richard's test</name>  <abstract\_desc>This should show up on pds-gamma</abstract\_desc>  <version\_id>1.0</version\_id>  <url>https://espn.com</url>  <release\_date>2018-04-21</release\_date>  <service\_type>Tool</service\_type>  <interface\_type>API</interface\_type>  <category>Analysis</category>  <description>I told Emily I'd finish testing by Friday. Whoops</description>  </Service>  <!--  Submitter Information  Submitter Name: Richard Chen  Submitter Institution: JPL  Submitter Email: richard.chen@jpl.nasa.gov  --> |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.19 |
| Test Personnel | Richard Chen |

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| 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*/testPrep 2. generate -p gendoc.lbl -t gendoc.vm 3. diff -w gendoc.xml gendoc.baseline.xml 4. rm gendoc.xml 5. generate -p gen\_ELE\_MOM1.LBL gen\_ELE\_MOM2.LBL gen\_ELE\_MOM3.LBL -t gen\_data.vm 6. diff -w gen\_ELE\_MOM1.xml gen\_ele\_baseline.xml 7. diff gen\_ELE\_MOM[13].LBL 8. diff gen\_ELE\_MOM[13].xml 9. rm gen\_ELE\_MOM?.xml   Test new functionality from build 6a   1. cd genmpf 2. generate -p i455934l.drk -t mpf\_imp\_raw\_template\_1400.xml 3. generate -p i646954r.img -t mpf\_imp\_raw\_template\_1400.xml 4. diff i455934l.xml i455934l.baseline.xml; diff i646954r.xml i646954r.baseline.xml 5. rm i455934l.xml i646954r.xml |
| Test Results | Step 2:  New PDS4 Label: *testDir*/testPrep/gendoc.xml  Step 3: Differences only in spacing  Step 5: Note that generate used to (erroneously) require –d or –o  New PDS4 Label: *testDir*/testPrep/gen\_ELE\_MOM1.xml  New PDS4 Label: *testDir*/testPrep/gen\_ELE\_MOM2.xml  New PDS4 Label: *testDir*/testPrep/gen\_ELE\_MOM3.xml  Step 6: Differences only in spacing.  Step 7: diff the inputs  12c12  < PRODUCT\_ID = "ELE\_MOM1.TAB"  ---  > PRODUCT\_ID = "ELE\_MOM3.TAB"  21c21  < ^TABLE = "ELE\_MOM1.TAB"  ---  > ^TABLE = "ELE\_MOM3.TAB"  Step 8: diff the outputs  83,84c83,84  < <file\_name>ELE\_MOM1.TAB</file\_name>  < <local\_identifier>ELE\_MOM1.TAB</local\_identifier>  ---  > <file\_name>ELE\_MOM3.TAB</file\_name>  > <local\_identifier>ELE\_MOM3.TAB</local\_identifier>  Step 11  New PDS4 Label: *testDir*/testPrep/genmpf/i455934l.xml  Step 12:  New PDS4 Label: *testDir*/testPrep/genmpf/i646954r.xml  Step 13: Differences only in spacing except for modification\_date (for each pair).  42c28  < <modification\_date>2017-10-19</modification\_date>  ---  > <modification\_date>2015-10-22</modification\_date> |
| Comments | Generate converts most constructs in a PDS3 label into a PDS4 label.  Results met success criteria.  [PDS-113](https://oodt.jpl.nasa.gov/jira/browse/PDS-113), created during testing of build 2c, requests handling carets in PDS3 labels used for detached labels.  [PDS-398](https://oodt.jpl.nasa.gov/jira/browse/PDS-398), created during testing of build 6a, requests that `generate -o .` write output to a different directory. |
| Date of Testing | 2018.04.19 |
| Test Personnel | Richard Chen |

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| Test Case ID | PRI.1 |
| Description | Inspect PDS4 data |
| Requirements | PASS L4?.???.? |
| Success Criteria | Visualize various structres of Product\_Observational data |
| Test Steps | The “Installation” page for 8b states: “In the future the code will be make into a standalone executable.” The current 8b procedure requires the installation of 10 modules, some apparently non-trivial (“There are possible errors and workarounds listed below. If you get stuck feel free to send an email to…”). Until the installation is simplified, this step tests the underlying module pds4\_tools, which does have a standalone viewer, PDS4 Viewer. Start the pds4\_viewer app (not via command line), then “File” > “Open in New Window”, each of these files in *testDir*   1. bundle\_geo\_ra/data\_derived/sol007.xml (Table\_Delimited) 2. harvestAtmV2/data\_mer2/sol1245/a1245\_p276309\_02\_02v01.xml (Array\_2D\_Image) 3. testPrep/cara\_data/cara\_data/data/C2004Q2.xml (Table\_Character) |
| Test Results | Step 1:  Step 2:  Step 3: |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.19 |
| Test Personnel | Richard Chen |

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| Test Case ID | PRP.1 |
| Description | Extract tabular data from a PDS4 product. |
| Requirements | PASS L4?.???.? |
| Success Criteria | Produce equivalent data in fixed width or csv. |
| Test Steps | 1. cd *testDir*/testPrep 2. java -version 3. extract-table extr\_hp3.xml 4. Operate on label pointing to multiple data files: extract-table -l extr3.xml 5. extract-table -t^ maven\_events\_20140801.xml 6. extract-table https://sbn.psi.edu/archive/bundles/ast\_lightcurve\_derived/data/lc\_binary.xml |
| Test Results | Step 2:  java version "1.8.0\_101"  Java(TM) SE Runtime Environment (build 1.8.0\_101-b13)  Java HotSpot(TM) 64-Bit Server VM (build 25.101-b13, mixed mode)  Step 3:  Spacecraft Clock Time Tilt X Tilt Y Tilt A Tilt B Sol Number  527817604.00000 90823 -215633 372377 1118264 0029  527817614.00000 90210 -215075 372241 1118067 0029  527817624.00000 91265 -215667 373688 1118125 0029  …  Step 4:  file: extr3.TAB  table 1: fixed-width character table  field 1: SOL (ASCII\_Integer)  field 2: LTST (ASCII\_Real)  field 3: LMST (ASCII\_Real)  field 4: V (ASCII\_Real)  field 5: DV+ (ASCII\_Real)  field 6: DV- (ASCII\_Real)  field 7: DIR (ASCII\_Real)  field 8: DDIR (ASCII\_Real)  field 9: EXPOSURE TIME (ASCII\_Real)  field 10: FILE NAME (ASCII\_File\_Name)  file: extr3.csv  table 1: delimited table  field 1: CHANNEL\_NUMBER (ASCII\_Integer)  field 2: SPECTRA\_01 (ASCII\_Integer)  field 3: SPECTRA\_02 (ASCII\_Integer)  field 4: SPECTRA\_03 (ASCII\_Integer)  field 5: SPECTRA\_04 (ASCII\_Integer)  field 6: SPECTRA\_05 (ASCII\_Integer)  field 7: SPECTRA\_06 (ASCII\_Integer)  field 8: SPECTRA\_07 (ASCII\_Integer)  field 9: SPECTRA\_08 (ASCII\_Integer)  field 10: SPECTRA\_09 (ASCII\_Integer)  field 11: SPECTRA\_10 (ASCII\_Integer)  field 12: SPECTRA\_11 (ASCII\_Integer)  field 13: SPECTRA\_12 (ASCII\_Integer)  file: extr3.dat  table 1: fixed-width binary table  field 1: SCLK\_SECONDS (UnsignedMSB4)  field 2: SCLK\_SUBSECONDS (UnsignedMSB2)  field 3: SPARE (UnsignedMSB2)  field 4: ROTATION\_MOTOR\_POSITION (IEEE754MSBDouble)  field 5: ROTATION\_MOTOR\_CURRENT\_SENSOR (IEEE754MSBDouble)  field 6: REVOLUTION\_MOTOR\_POSITION (IEEE754MSBDouble)  field 7: REVOLUTION\_MOTOR\_CURRENT\_SENSOR (IEEE754MSBDouble)  field 8: Z\_MOTOR\_POSITION (IEEE754MSBDouble)  field 9: Z\_MOTOR\_CURRENT\_SENSOR (IEEE754MSBDouble)  field 10: TEMPERATURE\_SENSOR (IEEE754MSBDouble)  field 11: BUTTERFLY\_SWITCH\_1 (UnsignedMSB4)  field 12: BUTTERFLY\_SWITCH\_2 (UnsignedMSB4)  field 13: RAT\_OVER\_CURRENT\_ALARM (UnsignedMSB4)  field 14: Z\_AXIS\_MOTOR\_CONTROLLER\_STATUS (UnsignedByte)  field 15: REVOLVE\_MOTOR\_CONTROLLER\_STATUS (UnsignedByte)  field 16: GRIND\_MOTOR\_CONTROLLER\_STATUS (UnsignedByte)  field 17: SPARE (UnsignedByte)  field 18: ROVER\_BUS\_VOLTAGE (IEEE754MSBDouble)  field 19: ALGORITHM\_STATE (UnsignedMSB4)  field 20: ANOMALY\_FLAG (UnsignedMSB4)  Step 5:  Event ID^event\_type\_id^start\_time^end\_time^source^description^discussion^modified\_time^mission\_event\_id  13642^ 122^2014-11-23T18:15:39-07:00^2014-11-23T18:15:39-07:00^Integrated Report^Start of outbound side orbit segment.^['VM\_10', 'VM\_GV\_SET\_STR', 'vm\_gv=GV\_ORBIT\_SEGMENT', '(152),vm\_string=OB\_SIDE'] FILENAME:report\_integrated.MVN.txt^2014-12-19T11:31:41.566628^ 140997  13646^ 121^2014-11-18T04:26:15-07:00^2014-11-18T04:26:15-07:00^Integrated Report^Start of periapse orbit segment.^['VM\_10', 'VM\_GV\_SET\_STR', 'vm\_gv=GV\_ORBIT\_SEGMENT', '(152),vm\_string=PERIAPSE'] FILENAME:report\_integrated.MVN.txt^2014-12-19T11:31:41.597141^ 122415  [snip…]  24062^ 131^2015-02-14T21:34:37-07:00^2015-02-14T21:34:37-07:00^SPICE ^Spacecraft entered eclipse^Generated using mvn\_spk\_2015\_050\_20\_00\_02.bsp^2015-02-22T02:30:13.515326^ 594473  24063^ 130^2015-02-14T17:27:26-07:00^2015-02-14T17:27:26-07:00^SPICE ^Spacecraft exited eclipse^Generated using mvn\_spk\_2015\_050\_20\_00\_02.bsp^2015-02-22T02:30:13.916244^ 594472  Step 6: demonstrate URL support  AST\_NUMBER AST\_NAME PROV\_DESIG REF\_ID TYPE FLAG PERIOD1 AMP1 PERIOD2 AMP2 PORB DS\_DP\_RATIO A\_DP\_RATIO  22 Kalliope - summary - - 4.1483 0.53 -999.99999999 -.99 -999.99999999 -.99 -9.999  22 Kalliope - Descamps 2008a B A -99999.99999999 -.99 -999.99999999 -.99 -999.99999999 -.99 -9.999  [snip ...]  0 - 2016 BU13 summary - - 39.5 0.24 -999.99999999 -.99 -999.99999999 -.99 -9.999  0 - 2016 BU13 Warner 2016m ? A 39.5 0.24 2.4499 0.11 -999.99999999 -.99 -9.999 |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.19 |
| Test Personnel | Richard Chen |

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| Test Case ID | PRS.1 |
| Description | Run webapps in tools-service |
| Requirements | PASS L4.PRP.4: The system shall provide a tool for transforming PDS products as follows… |
| Success Criteria | Contents and checksums of the registry artifacts match what have been ingested. |
| Test Steps | 1. In a browser, <http://localhost:8080/tools-service/> 2. Click “Browse”. Navigate to *testDir*/testPrep/TFM\_GRAND1A.\*. Click “Upload File(s)”, then “Continue” 3. On new page, “Format” = csv. Click “Transform” 4. Run this after PRT.1, which runs transform on the command line   diff *testDir*/testPrep/tfm\_grand1a\_delimited\_csv.xml /tmp/;  diff *testDir*/testPrep/tfm\_grand1a.xml /tmp/; diff *testDir*/testPrep/TFM\_GRAND1a.csv /tmp/ |
| Test Results | Step 2:  Step 3: |
| Comments | [PDS-559](https://oodt.jpl.nasa.gov/jira/browse/PDS-559), created during testing of build 8b, noted installation errors. It has already been resolved. |
| Date of Testing | 2018.04.23 |
| Test Personnel | Richard Chen |

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| 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 ./ -f jpg 3. transform testPrep/tfm\_FF01.LBL -o ./ -f jp2 4. transform testPrep/tfm\_ELE\_MOM.LBL -f pds4-label 5. grep -H NAME testPrep/tfm\_ELE\_MOM.LBL | grep , ; grep -H name testPrep/tfm\_ELE\_MOM.xml | grep , 6. diff -w tfm\_ele\_mom.xml testPrep/tfm\_ELE\_MOM.xml 7. transform testPrep/tfm\_414.xml -f jpg 8. transform testPrep/TFM\_GRAND1A.LBL -f csv 9. Edit output file TFM\_GRAND1A..csv to replace all commas with spaces 10. diff -w TFM\_GRAND1A..csv testPrep/TFM\_GRAND1A.TAB   Also check that the generated .xml file is good, and that transform to pds3 works   1. transform tfm\_grand1a.xml -f pds3-label 2. ln -s testPrep/tfm\_grand1a.tab . 3. Run NASAView to show TFM\_GRAND1A.LBL == testPrep/tfmgrand1A.lbl   == tfm\_grand1a\_delimited\_csv.xml (through pds\_viewer)   1. transform -f csv https://sbn.psi.edu/archive/bundles/ast\_lightcurve\_derived/data/lc\_binary.xml 2. Use pds4\_viewer to examine local file lc\_binary\_delimited\_csv.xml |
| Test Results | Step 2:  PDS Transform Tool Log  Version Version 1.7.0  Time Thu, Apr 19 2018 at 11:55:03 PM  Target [file:/Users/rchen/Desktop/test/testPrep/i943630r.xml]  Output Directory .  Index 1  Format Type jpg  INFO: [*testDir*/testPrep/i943630r.xml] Transforming image '1' of file 'i943630r.raw'  INFO: [TwoDImageExporter:setImageStatistics] No display settings found for identifier 'MPFL-M-IMP\_IMG\_GRAYSCALE'.  INFO: [*testDir*/testPrep/i943630r.xml] Successfully transformed image '1' of file 'i943630r.raw' to the following output: ./i943630r.jpg  i943630r.jpg:  i943630r.jpg  Step 3: transform VICAR IO  Image write Done  JConvertIIO  0) INP = *testDir*/testPrep/tfm\_FF01.LBL  1) OUT = ../TFM\_FF01.jp2  2) FORMAT = jpeg2000  3) RI = true  4) OFORM = BYTE  outputs = [./TFM\_FF01.jp2]  PDS Transform Tool Log  Version Version 1.7.0  Time Fri, Apr 20 2018 at 07:04:59 PM  Target [file:*testDir*/testPrep/tfm\_FF01.LBL]  Output Directory .  Index 1  Format Type jp2  INFO: [*testDir*/testPrep/tfm\_FF01.LBL] Transforming image file: *testDir*/testPrep/TFM\_FF01.IMG  INFO: [*testDir*/testPrep/tfm\_FF01.LBL] Successfully transformed image file '*testDir*/testPrep/TFM\_FF01.IMG' to the following output: ../TFM\_FF01.jp2  TFM\_FF01.jp2:  Step 4:  New PDS4 Label: /Users/rchen/Desktop/test/tfm\_ele\_mom.xml  outputs = [/Users/rchen/Desktop/test/tfm\_ele\_mom.xml]  PDS Transform Tool Log  Version Version 1.7.0  Time Fri, Apr 20 2018 at 07:11:16 PM  Target [file:*testDir*/testPrep/tfm\_ELE\_MOM.LBL]  Output Directory *testDir*  Index 1  Format Type pds4-label  INFO: [*testDir*/testPrep/tfm\_ELE\_MOM.LBL] Transforming label file: *testDir*/testPrep/tfm\_ELE\_MOM.LBL  INFO: [*testDir*/testPrep/tfm\_ELE\_MOM.LBL] Finished transforming PDS3 label '*testDir*/testPrep/tfm\_ELE\_MOM.LBL' to a PDS4 label ' *testDir*/tfm\_ele\_mom.xml'  Step 5 shows proper handling of commas in column name.  testPrep/tfm\_ELE\_MOM.LBL: NAME = "ELE\_TEMP,OK,COMMA"  testPrep/tfm\_ELE\_MOM.xml: <name>ele\_temp,ok,comma</name>  Step 6: Differences not related to spacing:  1,9c1,2  < <?xml version="1.0" encoding="UTF-8" standalone="no"?>  <  < <?xml-model href="https://pds.nasa.gov/pds4/pds/v1/PDS4\_PDS\_1A00.sch"  < schematypens="http://purl.oclc.org/dsdl/schematron"?>  <  < <Product\_Observational xmlns="http://pds.nasa.gov/pds4/pds/v1"  < xmlns:pds="http://pds.nasa.gov/pds4/pds/v1"  < xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"  < xsi:schemaLocation="http://pds.nasa.gov/pds4/pds/v1 https://pds.nasa.gov/pds4/pds/v1/PDS4\_PDS\_1A00.xsd">  ---  > <?xml version="1.0" encoding="UTF-8"?>  > <Product\_Observational xmlns="http://pds.nasa.gov/pds4/pds/v1" xmlns:pds="http://pds.nasa.gov/pds4/pds/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="">  14c7  < <information\_model\_version>1.A.0.0</information\_model\_version>  ---  > <information\_model\_version>1.2.0.1</information\_model\_version>  18c11  < <modification\_date>2018-04-20</modification\_date>  ---  > <modification\_date>2014-04-07</modification\_date>  Step 7:  testPrep/tfm_414.jpg  Step 8:  New PDS4 Label: /Users/rchen/Desktop/test/tfm\_grand1a.xml  outputs = [/Users/rchen/Desktop/test/tfm\_grand1A.csv, /Users/rchen/Desktop/test/tfm\_grand1a\_delimited\_csv.xml]  PDS Transform Tool Log  Version Version 1.7.0  Time Fri, Apr 20 2018 at 07:22:27 PM  Target [file:/Users/rchen/Desktop/test/testPrep/tfm\_grand1A.lbl]  Output Directory /Users/rchen/Desktop/test  Index 1  Format Type csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/tfm\_grand1A.lbl] Transforming label file: file:/Users/rchen/Desktop/test/testPrep/tfm\_grand1A.lbl  INFO: [file:/Users/rchen/Desktop/test/testPrep/tfm\_grand1A.lbl] Finished transforming PDS3 label 'file:/Users/rchen/Desktop/test/testPrep/tfm\_grand1A.lbl' to a PDS4 label '/Users/rchen/Desktop/test/tfm\_grand1a.xml'  INFO: [file:/Users/rchen/Desktop/test/tfm\_grand1a.xml] Transforming table '1' of file: file:/Users/rchen/Desktop/test/testPrep/tfm\_grand1A.tab  INFO: [file:/Users/rchen/Desktop/test/tfm\_grand1a.xml] Successfully transformed table '1' to the following output: /Users/rchen/Desktop/test/tfm\_grand1A.csv  INFO: [file:/Users/rchen/Desktop/test/tfm\_grand1a.xml] Successfully created Table\_Delimited label: /Users/rchen/Desktop/test/tfm\_grand1a\_delimited\_csv.xml  Step 10: no differences  Step 11:  outputs = [/PDS/PDS4test.build8a/TFM\_GRAND1A.LBL]  PDS Transform Tool Log  Version Version 1.7.0  Time Fri, Apr 20 2018 at 07:25:08 PM  Target [file:/Users/rchen/Desktop/test/tfm\_grand1a.xml]  Output Directory /Users/rchen/Desktop/test  Index 1  Format Type pds3-label  INFO: [file:/Users/rchen/Desktop/test/tfm\_grand1a.xml] Transforming label file: file:/Users/rchen/Desktop/test/tfm\_grand1a.xml  INFO: [/Users/rchen/Desktop/test/tfm\_grand1a.xml] Successfully transformed target label to a PDS3 label: /Users/rchen/Desktop/test/TFM\_GRAND1A.LBL  Step 14: URL as input. Then inspect output file lc\_binary.csv  outputs outputs = [/Users/rchen/Desktop/test/lc\_binary.csv, /Users/rchen/Desktop/test/lc\_binary\_delimited\_csv.xml]  PDS Transform Tool Log  Version Version 1.7.0  Time Fri, Apr 20 2018 at 07:33:04 PM  Target [https://sbn.psi.edu/archive/bundles/ast\_lightcurve\_derived/data/lc\_binary.xml]  Output Directory /Users/rchen/Desktop/test  Index 1  Format Type csv  INFO: [https://sbn.psi.edu/archive/bundles/ast\_lightcurve\_derived/data/lc\_binary.xml] Transforming table '1' of file: https://sbn.psi.edu/archive/bundles/ast\_lightcurve\_derived/data/lc\_binary.tab  INFO: [https://sbn.psi.edu/archive/bundles/ast\_lightcurve\_derived/data/lc\_binary.xml] Successfully transformed table '1' to the following output: /Users/rchen/Desktop/test/lc\_binary.csv  INFO: [https://sbn.psi.edu/archive/bundles/ast\_lightcurve\_derived/data/lc\_binary.xml] Successfully created Table\_Delimited label: /Users/rchen/Desktop/test/lc\_binary\_delimited\_csv.xml  Step 15: |
| Comments | Results met success criteria.  <https://oodt.jpl.nasa.gov/jira/browse/PDS-343> (formerly PDS-349), created during testing of build 5b, requests friendlier warning messages  Step 13 verifies <https://oodt.jpl.nasa.gov/jira/browse/PDS-544>, that transform creates a valid table\_delimited label, <https://oodt.jpl.nasa.gov/jira/browse/PDS-546>, that transform correctly output “Comma” not “comma” and “PDS DSV 1”, and  <https://oodt.jpl.nasa.gov/jira/browse/PDS-545>, that transform still works despite underlying source code changes |
| Date of Testing | 2018.04.20 |
| Test Personnel | Richard Chen |

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| Test Case ID | PRT.2 |
| Description | Transform PDS4 Array\_3D products into other formats. |
| 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 | If browse product exists, compare output against it. |
| Test Steps | 1. cd *testDir*/testPrep   Files tfm\_d00.\* were d000m5240t494053574edr\_f0000\_0501m1.\* from an Insight review   1. transform tfm\_d00.xml -f jpg 2. rm tfm\_d00.jpg   Transform an unsignedLSB2 and a signedLSB2.   1. transform tfm\_434u.xml -f png 2. transform tfm\_434s.xml -f gif 3. rm tfm\_434.png tfm\_434.gif |
| Test Results | Step 2:  PDS Transform Tool Log  Version Version 1.7.0  Time Fri, Apr 20 2018 at 07:42:56 PM  Target [file:/Users/rchen/Desktop/test/testPrep/tfm\_d00.xml]  Output Directory /Users/rchen/Desktop/test/testPrep  Index 1  Format Type jpg  INFO: [/Users/rchen/Desktop/test/testPrep/tfm\_d00.xml] Transforming image '1' of file 'tfm\_d00.vic'  INFO: [ThreeDImageExporter:setImageStatistics] No display settings found for identifier 'IMAGE DATA'.  INFO: [/Users/rchen/Desktop/test/testPrep/tfm\_d00.xml] Successfully transformed image '1' of file 'tfm\_d00.vic' to the following output: /Users/rchen/Desktop/test/testPrep/tfm\_d00.jpg  Output looks good and matches browse product tfm\_d00.png../../Users/rchen/Desktop/d000m5240t494053574edr_f0000_0501m  Step 4:testPrep/tfm_434.png  Step 5:testPrep/tfm_434.gif |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.20 |
| Test Personnel | Richard Chen |

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| Test Case ID | PRT.3 |
| Description | Test various capabilities described in release documents:   * Transform PDS4 Array\_3D\_Spectrum into other formats. * Use scaling\_factor, value\_offset, and orientation values. * Transform label with multiple images * pds3 with groups to pds4 counted pds4 fields and groups incorrectly |
| Requirements | PASS L4.PRP.4: The system shall provide a tool for transforming PDS products as follows… |
| Success Criteria | Visually inspect output product |
| Test Steps | 1. cd *testDir*/testPrep   A. Transform PDS4 Array\_3D\_Spectrum into other formats. Note, tfm\_spec.xml is tfm\_d00.xml with “…\_Spectrum” replacing “…\_Image”   1. transform tfm\_spec.xml -f jpg 2. rm tfm\_d00.jpg   B. Use scaling\_factor, value\_offset, and orientation values. Note, the input files tfm\_433\*.xml, are all variations of tfm\_d00.xml   1. diff tfm\_433a.xml tfm\_433b.xml 2. diff tfm\_433a.xml tfm\_433c.xml 3. transform tfm\_433a.xml -f gif 4. transform tfm\_433b.xml -f jpg 5. transform tfm\_433c.xml -f png 6. rm tfm\_433.gif tfm\_433.jpg tfm\_433.png   C. File pancam.qub has many images and uses <disp:\*display\_direction>   1. mkdir xA ; transform pancamA.xml -f jpg -a -o xA 2. mkdir xB ; transform pancamB.xml -f jpg -a -o xB 3. ls -l xA 4. diff pancamA.xml pancamB.xml 5. diff -r xA xB 6. view the two first files (and any other so desired) 7. rm -r xA xB 8. transform -O pancamA.xml   C. Prior to 8b, the -a on this caused an error   1. transform -a -f csv -t mvn\_rse\_l2.xml   D. Count pds3 groups correctly; no warning for missing .fmt files; avoid deprecateds   1. mkdir x ; mv APXS\_\*.FMT x ; transform -f pds4-label APXS.LBL 2. validate -f apxs.xml 3. mv x/\* .; rmdir x; transform -f pds4-label APXS.LBL 4. validate -f apxs.xml 5. grep "APXS.DAT" APXS.LBL; grep offset apxs.xml 6. Verify apxs.xml, e.g. pds4\_viewer shows 4 tables of 1, 13, 1, and 1 rows |
| Test Results | Step 2:  PDS Transform Tool Log  Version Version 1.7.0  Time Fri, Apr 20 2018 at 07:51:29 PM  Target [file:/Users/rchen/Desktop/test/testPrep/tfm\_spec.xml]  Output Directory /Users/rchen/Desktop/test/testPrep  Index 1  Format Type jpg  INFO: [/Users/rchen/Desktop/test/testPrep/tfm\_spec.xml] Transforming image '1' of file 'tfm\_d00.vic'  INFO: [ThreeDSpectrumExporter:setImageStatistics] No display settings found for identifier 'IMAGE DATA'.  INFO: [/Users/rchen/Desktop/test/testPrep/tfm\_spec.xml] Successfully transformed image '1' of file 'tfm\_d00.vic' to the following output: /Users/rchen/Desktop/test/testPrep/tfm\_d00.jpg  ../../Users/rchen/Desktop/tfm_d0  Step 4:  118,119c118,119  < <line\_display\_direction>Down</line\_display\_direction>  < <sample\_display\_direction>Right</sample\_display\_direction>  ---  > <line\_display\_direction>Up</line\_display\_direction>  > <sample\_display\_direction>Left</sample\_display\_direction>  Step 5:  105c105  < <scaling\_factor>1</scaling\_factor>  ---  > <scaling\_factor>0</scaling\_factor>  Steps 6,7,8 (images have been shrunk to fit 3-wide on this page)  ../../Users/rchen/Desktop/../../Users/rchen/Desktop/../../Users/rchen/Desktop/  Step 10 (Step 11 is very similar):  outputs = [xA/pancam\_1.jpg, xA/pancam\_2.jpg, xA/pancam\_3.jpg, xA/pancam\_4.jpg, xA/pancam\_5.jpg, xA/pancam\_6.jpg, xA/pancam\_7.jpg, xA/pancam\_8.jpg, xA/pancam\_9.jpg, xA/pancam\_10.jpg, xA/pancam\_11.jpg, xA/pancam\_12.jpg, xA/pancam\_13.jpg, xA/pancam\_14.jpg, xA/pancam\_15.jpg, xA/pancam\_16.jpg, xA/pancam\_17.jpg, xA/pancam\_18.jpg, xA/pancam\_19.jpg, xA/pancam\_20.jpg]  PDS Transform Tool Log  Version Version 1.7.0  Time Fri, Apr 20 2018 at 07:59:43 PM  Target [file:/Users/rchen/Desktop/test/testPrep/pancamA.xml]  Output Directory xA  Transform All true  Format Type jpg  INFO: [/Users/rchen/Desktop/test/testPrep/pancamA.xml] Transforming image '1' of file 'pancam.qub'  INFO: [/Users/rchen/Desktop/test/testPrep/pancamA.xml] Successfully transformed image '1' of file 'pancam.qub' to the following output: xA/pancam\_1.jpg  INFO: [/Users/rchen/Desktop/test/testPrep/pancamA.xml] Transforming image '2' of file 'pancam.qub'  [snip...]  INFO: [/Users/rchen/Desktop/test/testPrep/pancamA.xml] Transforming image '20' of file 'pancam.qub'  INFO: [TwoDImageExporter:setImageStatistics] No display settings found. Missing local\_identifier element in the Array\_2D\_Image area.  INFO: [/Users/rchen/Desktop/test/testPrep/pancamA.xml] Successfully transformed image '20' of file 'pancam.qub' to the following output: xA/pancam\_20.jpg  Step 12:  total 2928  -rw-rw-r-- 1 rchen 703763885 96617 Apr 20 19:59 pancam\_1.jpg  -rw-rw-r-- 1 rchen 703763885 38511 Apr 20 19:59 pancam\_10.jpg  -rw-rw-r-- 1 rchen 703763885 51693 Apr 20 19:59 pancam\_11.jpg  -rw-rw-r-- 1 rchen 703763885 63297 Apr 20 19:59 pancam\_12.jpg  -rw-rw-r-- 1 rchen 703763885 72366 Apr 20 19:59 pancam\_13.jpg  -rw-rw-r-- 1 rchen 703763885 98680 Apr 20 19:59 pancam\_14.jpg  -rw-rw-r-- 1 rchen 703763885 73826 Apr 20 19:59 pancam\_15.jpg  -rw-rw-r-- 1 rchen 703763885 115606 Apr 20 19:59 pancam\_16.jpg  -rw-rw-r-- 1 rchen 703763885 113894 Apr 20 19:59 pancam\_17.jpg  -rw-rw-r-- 1 rchen 703763885 68505 Apr 20 19:59 pancam\_18.jpg  -rw-rw-r-- 1 rchen 703763885 80052 Apr 20 19:59 pancam\_19.jpg  -rw-rw-r-- 1 rchen 703763885 89209 Apr 20 19:59 pancam\_2.jpg  -rw-rw-r-- 1 rchen 703763885 64422 Apr 20 19:59 pancam\_20.jpg  -rw-rw-r-- 1 rchen 703763885 76261 Apr 20 19:59 pancam\_3.jpg  -rw-rw-r-- 1 rchen 703763885 71655 Apr 20 19:59 pancam\_4.jpg  -rw-rw-r-- 1 rchen 703763885 68849 Apr 20 19:59 pancam\_5.jpg  -rw-rw-r-- 1 rchen 703763885 71295 Apr 20 19:59 pancam\_6.jpg  -rw-rw-r-- 1 rchen 703763885 63583 Apr 20 19:59 pancam\_7.jpg  -rw-rw-r-- 1 rchen 703763885 29191 Apr 20 19:59 pancam\_8.jpg  -rw-rw-r-- 1 rchen 703763885 52468 Apr 20 19:59 pancam\_9.jpg  Step 13:  71c71  < <disp:horizontal\_display\_direction>Left to Right</disp:horizontal\_display\_direction>  ---  > <disp:horizontal\_display\_direction>Right to Left</disp:horizontal\_display\_direction>  73c73  < <disp:vertical\_display\_direction>Top to Bottom</disp:vertical\_display\_direction>  ---  > <disp:vertical\_display\_direction>Bottom to Top</disp:vertical\_display\_direction>  Step 14: The two images with <local\_identifier>Spectral\_Qube\_Object</…> differ:  Binary files xA/pancam\_1.jpg and xB/pancam\_1.jpg differ  Binary files xA/pancam\_3.jpg and xB/pancam\_3.jpg differ  Step 15: (images have been shrunk to fit 2-wide on this page)  ../../../../../../Desktop/pancam_ ../../../../../../Desktop/pancam_  Step 17:  Supported Images:  Data file: pancam.qub  index = 1  object type = Array\_3D\_Spectrum  name = null  local identifier = Spectral\_Qube\_Object  data type = SignedMSB2  lines = 1024  samples = 1024  index = 2  object type = Array\_2D\_Image  name = iof\_r2  local identifier = null  data type = SignedMSB2  lines = 1024  samples = 1024  [snip…]  index = 20  object type = Array\_2D\_Image  name = approx\_phase\_angle  local identifier = null  data type = SignedMSB2  lines = 1024  samples = 1024  Supported Tables:  None Found  Step 18:  outputs = [/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2\_1.csv, /Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2\_2.csv, /Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2\_delimited\_csv.xml]  PDS Transform Tool Log  Version Version 1.7.0  Time Mon, Apr 23 2018 at 02:22:34 AM  Target [file:/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2.xml]  Output Directory /Users/rchen/Desktop/test/testPrep  Transform All true  Format Type csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2.xml] Transforming table '1' of file: file:/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2.tab  INFO: [file:/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2.xml] Successfully transformed table '1' to the following output: /Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2\_1.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2.xml] Transforming table '2' of file: file:/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2.tab  INFO: [file:/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2.xml] Successfully transformed table '2' to the following output: /Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2\_2.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2.xml] Successfully created Table\_Delimited label: /Users/rchen/Desktop/test/testPrep/mvn\_rse\_l2\_delimited\_csv.xml  Step 19: This should warn that the APXS\_\*.FMT files are missing. PDS-548  New PDS4 Label: /Users/rchen/Desktop/test/testPrep/apb\_m1.xml  outputs = [/Users/rchen/Desktop/test/testPrep/apb\_m1.xml]  PDS Transform Tool Log  Version Version 1.7.0  Time Mon, Apr 23 2018 at 02:11:12 AM  Target [file:/Users/rchen/Desktop/test/testPrep/apb\_m1.lbl]  Output Directory /Users/rchen/Desktop/test/testPrep  Index 1  Format Type pds4-label  INFO: [/Users/rchen/Desktop/test/testPrep/apb\_m1.lbl] Transforming label file: /Users/rchen/Desktop/test/testPrep/apb\_m1.lbl  INFO: [/Users/rchen/Desktop/test/testPrep/apb\_m1.lbl] Finished transforming PDS3 label '/Users/rchen/Desktop/test/testPrep/apb\_m1.lbl' to a PDS4 label '/Users/rchen/Desktop/test/testPrep/apb\_m1.xml'  Step 20:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-25T22:49:30Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/apxs.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/apxs.xml  ERROR line 60, 22: cvc-complex-type.2.4.b: The content of element 'Record\_Binary' is not complete. One of '{"http://pds.nasa.gov/pds4/pds/v1":Field\_Binary, "http://pds.nasa.gov/pds4/pds/v1":Group\_Field\_Binary}' is expected.  ERROR line 69, 22: cvc-complex-type.2.4.b: The content of element 'Record\_Binary' is not complete. One of '{"http://pds.nasa.gov/pds4/pds/v1":Field\_Binary, "http://pds.nasa.gov/pds4/pds/v1":Group\_Field\_Binary}' is expected.  ERROR line 78, 22: cvc-complex-type.2.4.b: The content of element 'Record\_Binary' is not complete. One of '{"http://pds.nasa.gov/pds4/pds/v1":Field\_Binary, "http://pds.nasa.gov/pds4/pds/v1":Group\_Field\_Binary}' is expected.  ERROR line 60, 22: The values for 'fields' and 'groups' must not both be '0'. The number of fields found: (0). The number of groups found: (0).  ERROR line 69, 22: The values for 'fields' and 'groups' must not both be '0'. The number of fields found: (0). The number of groups found: (0).  ERROR line 78, 22: The values for 'fields' and 'groups' must not both be '0'. The number of fields found: (0). The number of groups found: (0).  Summary:  6 error(s)  0 warning(s)  End of Report  Step 21:  PDS Transform Tool Log  Version Version 1.7.0  Time Wed, Apr 25 2018 at 03:56:13 PM  Target [file:/Users/rchen/Desktop/test/testPrep/APXS.LBL]  Output Directory /Users/rchen/Desktop/test/testPrep  Index 1  Format Type pds4-label  INFO: [/Users/rchen/Desktop/test/testPrep/APXS.LBL] Transforming label file: /Users/rchen/Desktop/test/testPrep/APXS.LBL  INFO: [/Users/rchen/Desktop/test/testPrep/APXS.LBL] Finished transforming PDS3 label '/Users/rchen/Desktop/test/testPrep/APXS.LBL' to a PDS4 label '/Users/rchen/Desktop/test/testPrep/apxs.  Step 22: This is the good version, but output has deprecated constructs. PDS-560  Configuration:  Version 1.13.0  Date 2018-04-25T22:24:13Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/apxs.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/apxs.xml  ERROR line 64, 23: When Field\_Binary has a child Packed\_Data\_Fields, "pds:Field\_Binary/pds:data\_type" must have a value of 'UnsignedBitString'.  ERROR line 133, 23: When Field\_Binary has a child Packed\_Data\_Fields, "pds:Field\_Binary/pds:data\_type" must have a value of 'UnsignedBitString'.  ERROR line 250, 23: When Field\_Binary has a child Packed\_Data\_Fields, "pds:Field\_Binary/pds:data\_type" must have a value of 'UnsignedBitString'.  WARNING line 73, 26: pds:Field\_Bit/pds:start\_bit is deprecated and should not be used.  WARNING line 79, 26: pds:Field\_Bit/pds:start\_bit is deprecated and should not be used.  [snip…]  WARNING line 350, 25: pds:Field\_Bit/pds:stop\_bit is deprecated and should not be used.  Summary:  3 error(s)  74 warning(s)  End of Report  Step 23:  ^SCI\_HEADER\_TABLE = ("APXS.DAT", 1)  ^SCIENCE\_TABLE = ("APXS.DAT", 43 <BYTES>)  ^ENGINEERING\_TABLE = ("APXS.DAT", 27317 <BYTES>)  ^ERROR\_CONTROL\_TABLE = ("APXS.DAT", 29815 <BYTES>)  <offset unit="byte">0</offset>  <offset unit="byte">42</offset>  <offset unit="byte">27316</offset>  <offset unit="byte">29814</offset> |
| Comments | Results met success criteria.  Step 18 verifies [PDS-532](https://oodt.jpl.nasa.gov/jira/browse/PDS-532), the -a option. Step 20 verifies [PDS-533](https://oodt.jpl.nasa.gov/jira/browse/PDS-533), invalid output with PDS3 construct GROUP. Step 23 verifies [PDS-534](https://oodt.jpl.nasa.gov/jira/browse/PDS-534), correct offsets relative to PDS3 and PDS4.  In 8b, step 19 opens [PDS-548](https://oodt.jpl.nasa.gov/jira/browse/PDS-548), halt generate and notify when input files are missing.  In 8b, step 22 opens [PDS-560](https://oodt.jpl.nasa.gov/jira/browse/PDS-560), update outputted xml to reflect IM 1.A.0.0 |
| Date of Testing | 2018.04.23 |
| Test Personnel | Richard Chen |

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| 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*/bundle\_psi 2. validate -x xml\_schema/\*xsd -S xml\_schema/\*sch -R pds4.bundle -t .   Some files need local data dictionary img.   1. validate -x xml\_schema/\*xsd ../bundle\_psi2/\*xsd -S xml\_schema/\*sch ../bundle\_psi2/\*sch -R pds4.bundle -t . |
| Test Results | Step 2:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T06:05:07Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_psi/]  Rule Type pds4.bundle  User Specified Schemas [file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xsd]  User Specified Schematrons [file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/bundle\_mars\_spectra\_reddy.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/collection\_mars\_spectra\_reddy\_data.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/data/2001/1916\_boreas.xml  ERROR line 69, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging\_Instrument\_Parameters'.  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/163000\_2001sw169.xml  ERROR line 69, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging\_Instrument\_Parameters'.  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/2008rw24.xml  ERROR line 69, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging\_Instrument\_Parameters'.  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/39572\_1993dq1.xml  ERROR line 69, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging\_Instrument\_Parameters'.  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/446791\_1998sj70.xml  ERROR line 69, 42: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'img:Imaging\_Instrument\_Parameters'.  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/AA\_Document\_Index.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/allspectra.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/bundle\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/collection\_mars\_spectra\_reddy\_document.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/host\_OBS376T3\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/instrument\_I0046\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/ref.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/collection.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xml  PDS4 Bundle Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/collection\_mars\_spectra\_reddy\_data.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/collection\_mars\_spectra\_reddy\_document.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/collection.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/bundle\_mars\_spectra\_reddy.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/ref.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/163000\_2001sw169.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/2008rw24.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/39572\_1993dq1.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/host\_OBS376T3\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2001/1916\_boreas.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/instrument\_I0046\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/446791\_1998sj70.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/AA\_Document\_Index.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/allspectra.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/bundle\_description.xml  Summary:  5 error(s)  0 warning(s)  End of Report  Step 3:  Oct 20, 2017 4:14:27 PM gov.nasa.pds.tools.label.LocationValidator validate  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T06:19:06Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_psi/]  Rule Type pds4.bundle  User Specified Schemas [file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xsd, file:/Users/rchen/Desktop/test/bundle\_psi2/PDS4\_IMG\_1100.xsd]  User Specified Schematrons [file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.sch, file:/Users/rchen/Desktop/test/bundle\_psi2/PDS4\_IMG\_1100.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/bundle\_mars\_spectra\_reddy.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/collection\_mars\_spectra\_reddy\_data.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2001/1916\_boreas.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/163000\_2001sw169.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/2008rw24.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/39572\_1993dq1.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/446791\_1998sj70.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/AA\_Document\_Index.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/allspectra.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/bundle\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/collection\_mars\_spectra\_reddy\_document.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/host\_OBS376T3\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/instrument\_I0046\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/ref.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/collection.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xml  PDS4 Bundle Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/collection\_mars\_spectra\_reddy\_data.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/collection\_mars\_spectra\_reddy\_document.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/collection.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/bundle\_mars\_spectra\_reddy.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/ref.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/163000\_2001sw169.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/2008rw24.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/39572\_1993dq1.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/host\_OBS376T3\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2001/1916\_boreas.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/instrument\_I0046\_description.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/446791\_1998sj70.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/AA\_Document\_Index.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/allspectra.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/bundle\_description.xml  Summary:  0 error(s)  0 warning(s)  End of Report |
| Comments | Results met success criteria.  [PDS-486](https://oodt.jpl.nasa.gov/jira/browse/PDS-486), request not to ignore -e when -R pds4.bundle is specified, was rejected in 8b.  Build 8a opened [PDS-520](https://oodt.jpl.nasa.gov/jira/browse/PDS-520), where validate does not catch a ‘+’ in a text field format. |
| Date of Testing | 2018.04.20 |
| Test Personnel | Richard Chen |

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| 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\_psi/data/science\_index.tab . 2. validate -f bundle\_psi/data/science\_index.xml 3. mv science\_index.tab bundle\_psi/data/ 4. repeat step 2   References also consider <directory\_path\_name>, which can be absolute, relative, and with or without a trailing ‘/’.   1. diff testPrep/product\_document/Product\_Doc\_bad.xml testPrep/product\_document/Product\_Doc\_good.xml 2. validate -t testPrep/product\_document/Product\_Doc\_bad.xml -f 3. validate -t testPrep/product\_document/Product\_Doc\_good.xml -f |
| Test Results | Step 2: the referenced file was removed in step 1  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T06:53:04Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml  ERROR URI reference does not exist: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.tab  Begin Content Validation: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.tab  ERROR table 1: Error occurred while trying to read table: /Users/rchen/Desktop/test/bundle\_psi/data/science\_index.tab (No such file or directory)  End Content Validation: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.tab  Summary:  2 error(s)  0 warning(s)  End of Report  Step 4: the referenced file was restored in step 3  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T06:55:22Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml  Summary:  0 error(s)  0 warning(s)  End of Report  Step 5: the first difference (trailing /) doesn’t matter. The second does.  94c94  < <directory\_path\_name>meca\_rdr\_sis\_files/</directory\_path\_name>  ---  > <directory\_path\_name>meca\_rdr\_sis\_files</directory\_path\_name>  103c103  < <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 should fail because of a non-existent path.  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T06:57:47Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_bad.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_bad.xml  ERROR URI reference does not exist: file:/replaceWithFullPath/image002.gif  Summary:  1 error(s)  0 warning(s)  End of Report  Step 7: non-existent path has been replaced by a real path  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T06:59:24Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_good.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_good.xml  Summary:  0 error(s)  0 warning(s)  End of Report |
| Comments | Results met success criteria.  [PDS-522](https://oodt.jpl.nasa.gov/jira/browse/PDS-522), opened in 8a about excessive error messages, was confirmed resolved in 8b. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| Test Case ID | PRV.3 |
| Description | Validate aggregate products’ integrity of LID references. This differs from validating a directory by 1) hierarchically validating based on bundle.xml’s lid\_reference and/or collection.tab’s inventory, and 2) validating only the references, not other syntax. |
| Requirements | PASS L5.PRP.VA.3: The tool shall validate aggregate products and all products referenced by such products.  PASS L5.PRP.VA.7: The tool shall accept the following as input for specifying the associated schema file(s)… |
| Success Criteria | Find no bugs in bundle\_geo\_ra/. Find some bugs in bundleLID/. |
| Test Steps | 1. cd *testDir/* 2. validate -R pds4.bundle -t bundle\_geo\_ra -f 3. validate -R pds4.bundle -t bundleLID -f where bundleLID == bundle\_geo\_ra with some files removed except: 4. data\_test/data\_test\_collection\_1.xml has another collection’s logical\_identifier 5. context/context\_collection\_1.xml has a typo in its logical\_identifier 6. data\_derived/sol149b.xml has another product’s LIDVID 7. data\_test/scraping/pit\_test\_scraping\_pic[12].xml have the same LID but different VIDs, which should not be flagged. 8. data\_test/scraping/pit\_test\_scraping.xml’s LID changed to “<xxx>.xml” 9. data\_test/scraping/pit\_test\_scraping.xml’s <title> added various spaces 10. validate -R pds4.bundle -t bundle\_geo\_ra/bundle\_1.xml Integrity checking only 1 file is illogical since references point to other files |
| Test Results | Step 2:  PDS Validate Tool Report  Version 1.13.0  Date 2018-04-21T07:47:59Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_geo\_ra/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/bundle\_1.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/context/context\_collection\_1.xml  [snip…]  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/data\_derived/sol090.xml  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml  Summary:  0 error(s)  0 warning(s)  End of Report  Step 3: flagging duplicate u:n:p:phx\_ra:data\_derived:sol149a::1.0 and not flagging pit\_test\_scraping\_pic[23].xml are correct.  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T08:15:26Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundleLID/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundleLID/bundle\_1.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/context\_collection\_1.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/PDS4\_host\_PHX\_1.0.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/PDS4\_inst\_RA\_\_PHX.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/PDS4\_mission\_PHOENIX\_1.0.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/PDS4\_target\_MARS\_1.0.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/data\_derived\_collection\_1.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol006.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol149a.xml  FAIL: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol149b.xml  ERROR Identifier urn:nasa:pds:phx\_ra:data\_derived:sol149a::1.0 already defined (old location: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol149a.xml)  FAIL: file:/Users/rchen/Desktop/test/bundleLID/data\_test/data\_test\_collection\_1.xml  ERROR Identifier urn:nasa:pds:phx\_ra:data\_derived::1.0 already defined (old location: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/data\_derived\_collection\_1.xml)  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig1\_pic1.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig2\_pic13.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml  PDS4 Bundle Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/context\_collection\_1.xml  WARNING Identifier 'urn:nasa:pds:phx\_ra:context\_typo::1.0' is not a member of any collection within the given target  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/data\_derived\_collection\_1.xml  WARNING The member 'urn:nasa:pds:phx\_ra:data\_derived:sol149b::1.0' could not be found in any product within the given target.  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/data\_test\_collection\_1.xml  FAIL: file:/Users/rchen/Desktop/test/bundleLID/x  ERROR File is not valid in bundle root directory  PASS: file:/Users/rchen/Desktop/test/bundleLID/bundle\_1.xml  WARNING The member 'urn:nasa:pds:phx\_ra:data\_test' could not be found in any product within the given target.  WARNING The member 'urn:nasa:pds:phx\_ra:context' could not be found in any product within the given target.  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol149a.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol006.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/PDS4\_host\_PHX\_1.0.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/PDS4\_inst\_RA\_\_PHX.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig1\_pic1.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/PDS4\_mission\_PHOENIX\_1.0.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig2\_pic13.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/PDS4\_target\_MARS\_1.0.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml  Summary:  3 error(s)  4 warning(s)  End of Report  Step 4:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T15:41:32Z  Core Schemas [PDS4\_PDS\_1A00.xsd]  Core Schematrons [PDS4\_PDS\_1A00.sch]  Model Version 1A00  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_geo\_ra/bundle\_1.xml]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  Summary:  0 error(s)  0 warning(s)  End of Report |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| Test Case ID | PRV.4 |
| Description | Merge label fragments |
| Requirements | PASS 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 | As of build 7b, this functionality (merging via xinculde) is gone, i.e. this should fail. The requirement above no longer applies, for [PDS-488](https://oodt.jpl.nasa.gov/jira/browse/PDS-488), removes support for xinclude. |
| Test Steps | 1. cd *testDir*/testPrep/product\_document 2. validate -x ../../PDS4\_PDS\_1A00.xsd -t Product\_Doc\_part1.xml |
| Test Results | Step 2:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T18:36:07Z  Core Schematrons [PDS4\_PDS\_1A00.sch]  Model Version 1A00  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_part1.xml]  User Specified Schemas [file:/Users/rchen/Desktop/test/PDS4\_PDS\_1A00.xsd]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_part1.xml  ERROR line 96, 56: cvc-complex-type.2.4.a: Invalid content was found starting with element 'xi:include'. One of '{"http://pds.nasa.gov/pds4/pds/v1":comment, "http://pds.nasa.gov/pds4/pds/v1":directory\_path\_name, "http://pds.nasa.gov/pds4/pds/v1":document\_standard\_id}' is expected.  WARNING No schematron specification found in the label.  ERROR URI reference does not exist: file:/Users/rchen/Desktop/test/testPrep/product\_document/image001.gif  Summary:  2 error(s)  1 warning(s)  End of Report |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| 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\_1800.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\_1A00.xsd -S PDS4\_PDS\_1A00.sch 2. diff -w PDS4\_PDS\_1A00.xsd testPrep/PDS4\_PDS\_1A00.bad.xsd 3. validate bundle\_geo\_ra/bundle\_1.xml -x testPrep/PDS4\_PDS\_1A00.bad.xsd -S PDS4\_PDS\_1A00.sch   Give validate a non-existent schema   1. validate bundle\_geo\_ra/bundle\_1.xml -x xxx.xsd -S PDS4\_PDS\_1700.sch |
| Test Results | Step 1: a normal validation with a schema specified on the command line  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T18:56:58Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_geo\_ra/bundle\_1.xml]  User Specified Schemas [file:/Users/rchen/Desktop/test/PDS4\_PDS\_1A00.xsd]  User Specified Schematrons [file:/Users/rchen/Desktop/test/PDS4\_PDS\_1A00.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/bundle\_1.xml  Summary:  0 error(s)  0 warning(s)  End of Report  Step 2: the first schema is good; the second has an important line commented out  15c15  < </xs:annotation>  ---  > <!--/xs:annotation-->  Step 3: validate fails because of the schema’s syntactic problems  Error while getting targetNamespace of schema 'file:/Users/rchen/Desktop/test/testPrep/PDS4\_PDS\_1A00.bad.xsd': org.xml.sax.SAXParseException; systemId: file:/Users/rchen/Desktop/test/testPrep/PDS4\_PDS\_1A00.bad.xsd; lineNumber: 8156; columnNumber: 3; The element type "xs:annotation" must be terminated by the matching end-tag "</xs:annotation>".  Step 4: validate throws a normal java exception. Weird copy/paste below into Word.  java.io.IOException: /Users/rchen/Desktop/test/xxx.xsd (No such file or directory)  at gov.nasa.pds.tools.util.Utility.openConnection(Utility.java:123)  at gov.nasa.pds.tools.label.CachedLSResourceResolver.resolveResource(CachedLSResourceResolver.java:197)  at gov.nasa.pds.validate.ValidateLauncher.validateSchemas(ValidateLauncher.java:856)  at gov.nasa.pds.validate.ValidateLauncher.processMain(ValidateLauncher.java:945)  at gov.nasa.pds.validate.ValidateLauncher.main(ValidateLauncher.java:989)  Error while trying to read in 'file:/Users/rchen/Desktop/test/xxx.xsd'  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T19:05:05Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_geo\_ra/bundle\_1.xml]  User Specified Schemas [file:/Users/rchen/Desktop/test/xxx.xsd]  User Specified Schematrons [file:/Users/rchen/Desktop/test/PDS4\_PDS\_1700.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/PDS4\_PDS\_1700.sch  FATAL\_ERROR /Users/rchen/Desktop/test/PDS4\_PDS\_1700.sch (No such file or directory)  Summary:  1 error(s)  0 warning(s)  End of Report |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| Test Case ID | PRV.7 |
| Description | Test various capabilities described in release documents: |
| Requirements | PASS L5.PRP.VA.3: The tool shall validate aggregate products and all products referenced by such products. |
| Success Criteria | Besides validating w.r.t. the schema, catch the 1 bad checksum |
| Test Steps | 1. cd *testDir*/testPrep   Validate multiple files via a checksum manifest   1. validate -m1400 -t cara\_data -M cara\_data/checksum.tab 2. cp cara\_data/checksum.tab /tmp 3. validate -m1400 -t cara\_data -M /tmp/checksum.tab 4. validate -f -t vld\_415   -R pds4.bundle and pds4.collection   1. validate -m1400 -t cara\_data -R pds4.collection 2. validate -m1400 -t cara\_data/cara\_documents -R pds4.bundle   -D disable data check   1. validate -f -t twins\_raw\_0015\_01.xml 2. validate -f -D -t twins\_raw\_0015\_01.xml   Content validation on arrays. I can test size, but how to test statistics?   1. diff 7f90.xml 7f90b.xml 2. validate -f -t 7f90.xml 3. validate -f -t 7f90b.xml   Big validate of the largest test bundle, then a growing, active, remote bundle.   1. date ; validate -f -t contextPDS3 > validate.big.out ; date 2. Is this possible? date; validate -f -t <https://atmos.nmsu.edu/PDS/data/PDS4/MAVEN/iuvs_calibrated_bundle> > validate.big.out; date   Catalog   1. validate -t catalogValidate/ele\_mom\_tblChar.xml -C catalogValidate/catalog-dph.xml   Allow large integers and readme\_\*.txt   1. validate -f maven-rose-raw -R pds4.bundle |
| Test Results | Step 2: The one error is deliberate to demonstrate that the rest are working  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T20:10:41Z  Core Schemas [PDS4\_PDS\_1400.xsd]  Core Schematrons [PDS4\_PDS\_1400.sch]  Model Version 1400  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/cara\_data/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Checksum Manifest File file:/Users/rchen/Desktop/test/testPrep/cara\_data/checksum.tab  Manifest File Base Path file:/Users/rchen/Desktop/test/testPrep/cara\_data/  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/bundle.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/collection.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/116P.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/174P.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/29P.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/67P.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/C2004Q2.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/C2013A1.xml  FAIL: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_documents/cara\_observer\_code.xml  ERROR Generated checksum '4cba3db065570c5c85fa0907574e6f04' does not match supplied checksum '00000000000000000000000000000000' in the manifest for 'file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_documents/cara\_observer\_code.xml'  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_documents/collection.xml  Summary:  1 error(s)  0 warning(s)  End of Report  Step 4: This failed before 6b. Works now, i.e. same output as step 2.  Step 5: At one time, the 2nd warning would have 2 lines; the 3rd, three.  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T23:31:45Z  Parameters:  Targets [file: *testDir*/testPrep/vld\_415/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/vld\_415/bundle.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/collection.xml  PASS: file:/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/data/116P.xml  WARNING File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/data/116p.tab' exists but the case doesn't match  PASS: file:/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/data/174P.xml  WARNING File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/data/174p.tab' exists but the case doesn't match  PASS: file:/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/data/C2004Q2.xml  WARNING File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/data/C2004q2.tab' exists but the case doesn't match  Summary:  0 error(s)  3 warning(s)  End of Report  Step 6: can’t use -R pds4.bundle on a collection  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T23:55:16Z  Core Schemas [PDS4\_PDS\_1400.xsd]  Core Schematrons [PDS4\_PDS\_1400.sch]  Model Version 1400  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_documents/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  Summary:  0 error(s)  0 warning(s)  End of Report  Step 7: can’t use -R pds4.collection on a bundle  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-21T23:53:31Z  Core Schemas [PDS4\_PDS\_1400.xsd]  Core Schematrons [PDS4\_PDS\_1400.sch]  Model Version 1400  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/cara\_data/]  Rule Type pds4.collection  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  Summary:  0 error(s)  0 warning(s)  End of Report  Step 8:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-22T10:13:15Z  Parameters:  Targets [file:/Users/rchen/Desktop/twins\_raw\_0015\_01.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/twins\_raw\_0015\_01.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/twins\_raw\_0015\_01.csv  ERROR table 1, record 1, field 5: Value does not match its data type 'ASCII\_Date\_Time\_DOY\_UTC': Could not parse notadatebyanystandard using these patterns 'YYYYZ, YYYY-DOYThhZ, YYYY-DOYThh:mmZ, YYYY-DOYThh:mm:ss[.fff]Z'  ERROR table 1, record 1, field 6: Value does not match its data type 'ASCII\_Integer': '88.88' does not match the pattern '[+-]?\d+'  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/twins\_raw\_0015\_01.csv  Summary:  2 error(s)  0 warning(s)  End of Report  Step 9: disable data check  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-22T10:17:13Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/twins\_raw\_0015\_01.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation off  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/twins\_raw\_0015\_01.xml  Summary:  0 error(s)  0 warning(s)  End of Report  Step 10:  134c134  < <elements>945</elements>  ---  > <elements>9945</elements>  Step 11:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-22T16:43:17Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/7f90.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/7f90.xml  Summary:  0 error(s)  0 warning(s)  End of Report  Step 12:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-22T16:44:19Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/7f90b.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/7f90b.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/7f90.img  FATAL\_ERROR array 1: Error reading data file 'file:/Users/rchen/Desktop/test/testPrep/7f90.img': Unexpectedly reached the end of file before reading in 35006400 byte(s).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/7f90.img  Summary:  1 error(s)  0 warning(s)  End of Report  Step 13:  Sun Apr 22 21:48:39 PDT 2018  Sun Apr 22 21:59:44 PDT 2018  Step 14: not run. Quit after 1 day. Not sure the network traffic is feasible  Step 15:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-23T05:46:30Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/catalogValidate/ele\_mom\_tblChar.xml]  User Specified Catalogs [catalogValidate/catalog-dph.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode off  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/catalogValidate/ele\_mom\_tblChar.xml  Summary:  0 error(s)  0 warning(s)  End of Report  Step 16:  PDS Validate Tool Report  Configuration:  Version 1.13.0  Date 2018-04-23T10:41:10Z  Parameters:  Targets [file:/Users/rchen/Desktop/maven-rose-raw/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/maven-rose-raw/bundle\_maven\_rose\_raw\_1.0.xml  PASS: file:/Users/rchen/Desktop/maven-rose-raw/data\_tnf/collection\_maven\_rose\_raw\_data\_l0\_tnf\_1.0.xml  PASS: file:/Users/rchen/Desktop/maven-rose-raw/data\_tnf/mvn\_rse\_l0\_tnf\_20160219T151033\_v01\_r00.xml  PDS4 Bundle Level Validation Results  PASS: file:/Users/rchen/Desktop/maven-rose-raw/data\_tnf/collection\_maven\_rose\_raw\_data\_l0\_tnf\_1.0.xml  PASS: file:/Users/rchen/Desktop/maven-rose-raw/bundle\_maven\_rose\_raw\_1.0.xml  PASS: file:/Users/rchen/Desktop/maven-rose-raw/data\_tnf/mvn\_rse\_l0\_tnf\_20160219T151033\_v01\_r00.xml  Summary:  0 error(s)  0 warning(s)  End of Report |
| Comments | Results met success criteria.  In 8b, steps 6 and 7 reopen <https://oodt.jpl.nasa.gov/jira/browse/PDS-501>, as the former “SEVERE” warning/error is gone, as are the counts of processed and passed files, so it looks like those two validations succeeded.  Also during build 8b testing:  Step 8 verifies <https://oodt.jpl.nasa.gov/jira/browse/PDS-531>  Steps 8 and 9 verify <https://oodt.jpl.nasa.gov/jira/browse/PDS-542>  Steps 10-12 verify <https://oodt.jpl.nasa.gov/jira/browse/PDS-543>  Step 12 alone verifies <https://oodt.jpl.nasa.gov/jira/browse/PDS-524>  Step 13 verifies <https://oodt.jpl.nasa.gov/jira/browse/PDS-516>  Step 15 verifies <https://oodt.jpl.nasa.gov/jira/browse/PDS-526>  Step 16 verifies <https://oodt.jpl.nasa.gov/jira/browse/PDS-537> and <https://oodt.jpl.nasa.gov/jira/browse/PDS-538>. |
| Date of Testing | 2018.04.23 |
| Test Personnel | Richard Chen |

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| 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-pds3/extrinsics/logicals/testing.REG.1   in a browser shows no current product has lid “testing.REG.1”, which input files test.REG.1[abc].xml have.   1. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1a.xml http://localhost:8080/registry-pds3/extrinsics   attempts to register the bad input file   1. Repeat step 2 to ensure lid still does not exist. 2. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1b.xml http://localhost:8080/registry-pds3/extrinsics   registers a good input file   1. Repeat step 2 to see the lid 2. At <http://localhost:8080/registry-ui/>, select “Product 1234 v1”, Delete, OK 3. Repeat step 2 to ensure lid no longer exists |
| Test Results | Step 2: The error message should be (if lid does exist, run step 7):  Step 3:  Note: Unnecessary use of -X or --request, POST is already inferred.  \* Trying ::1...  \* Connected to localhost (::1) port 8080 (#0)  > POST /registry-pds3/extrinsics HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  > Content-type:application/xml  > Content-Length: 653  \* upload completely sent off: 653 out of 653 bytes  < HTTP/1.1 400  < Content-Length: 0  < Date: Sat, 21 Apr 2018 20:21:17 GMT  < Connection: close  \* Closing connection 0  Step 4: Same as step 2  Step 5:  Note: Unnecessary use of -X or --request, POST is already inferred.  \* Trying ::1...  \* Connected to localhost (::1) port 8080 (#0)  > POST /registry-pds3/extrinsics HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  > Content-type:application/xml  > Content-Length: 629  >  \* upload completely sent off: 629 out of 629 bytes  < HTTP/1.1 201  < Location: http://localhost:8080/registry-pds3/extrinsics/testing.REG.1.v1.0  < Content-Type: application/xml  < Transfer-Encoding: chunked  < Date: Sat, 21 Apr 2018 20:22:18 GMT  \* Connection #0 to host localhost left intact  testing.REG.1.v1.0  Step 6: Upon success, the registry service returns good xml. In firefox:  Step 7:  Step 8: Same as step 2 |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| 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-pds3/associations/linkREG.1toREG.2a   shows no such associations   1. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.2.xml http://localhost:8080/registry-pds3/associations   adds 1 association (from a nonexistent sourceLid) to desired targetLid   1. Repeat step 1 to see the association. 2. curl -X DELETE -v http://localhost:8080/registry-pds3/associations/linkREG.1toREG.2a 3. 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), delete as is Test Step 4.  Step 2: Benign output messages without “ERROR”  Note: Unnecessary use of -X or --request, POST is already inferred.  \* Trying ::1...  \* Connected to localhost (::1) port 8080 (#0)  > POST /registry-pds3/associations HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  > Content-type:application/xml  > Content-Length: 225  \* upload completely sent off: 225 out of 225 bytes  < HTTP/1.1 201  < Location: http://localhost:8080/registry-pds3/associations/linkREG.1toREG.2a  < Content-Type: text/plain  < Transfer-Encoding: chunked  < Date: Sat, 21 Apr 2018 20:26:34 GMT  \* Connection #0 to host localhost left intact  linkREG.1toREG.2a  Step 3:  Step 4:  \* Trying ::1...  \* Connected to localhost \* Connected to localhost (::1) port 8080 (#0)  > DELETE /registry-pds3/associations/linkREG.1toREG.2a HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  < HTTP/1.1 200  < Content-Length: 0  < Date: Sat, 21 Apr 2018 20:31:16 GMT  \* Connection #0 to host localhost left intact  Step 5: same as step 1 |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| 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,   1. http://localhost:8080/registry-pds3/extrinsics (e.g. REG.1’s step 5) 2. http://localhost:8080/registry-pds3/associations (e.g. REG.2’s step 2) 3. http://localhost:8080/registry-pds3/services 4. http://localhost:8080/registry-pds3/schemes 5. http://localhost:8080/registry-pds3/events 6. http://localhost:8080/registry-pds3/packages 7. http://localhost:8080/registry-pds3/docs/   From a command line (to show the registry version),   1. curl -X GET -H "Accept:application/xml" -v http://localhost:8080/registry-pds3/report |
| 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.            Step 7 shows correct output formatting  Step 8:  Note: Unnecessary use of -X or --request, GET is already inferred.  \* Trying ::1...  \* Connected to localhost (::1) port 8080 (#0)  > GET /registry-pds3/report HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept:application/xml  < HTTP/1.1 200  < Content-Type: application/xml  < Content-Length: 314  < Date: Sat, 21 Apr 2018 22:43:54 GMT  \* Connection #0 to host localhost left intact  <?xml version="1.0" encoding="UTF-8" standalone="yes"?><ns2:report xmlns:ns2="http://registry.pds.nasa.gov" status="OK" serverStarted="2018-04-21T13:18:06.619-07:00" associations="71" extrinsics="0" services="0" classificationSchemes="2" classificationNodes="69" packages="4" events="79" registryVersion="1.14.0"/>/Users/rchen/Desktop/test> |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| 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-pds3/extrinsics   From the output, copy the GUID (assigned by the registry) from the last line   1. http://localhost:8080/registry-pds3/extrinsics/*guid* 2. To be nice, delete via http://localhost:8080/registry-ui |
| Test Results | Step 1: Note the value (an assigned LID) of “Location:” in the positive message:  Note: Unnecessary use of -X or --request, POST is already inferred.  \* Trying ::1...  \* Connected to localhost (::1) port 8080 (#0)  > POST /registry-pds3/extrinsics HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  > Content-type:application/xml  > Content-Length: 668  \* upload completely sent off: 668 out of 668 bytes  < HTTP/1.1 201  < Location: http://localhost:8080/registry-pds3/extrinsics/urn:uuid:f4c2b40c-f923-4700-b093-9589727495c9  < Content-Type: application/xml  < Transfer-Encoding: chunked  < Date: Sun, 22 Apr 2018 00:15:32 GMT  \* Connection #0 to host localhost left intact  urn:uuid:f4c2b40c-f923-4700-b093-9589727495c9/Users/rchen/Desktop/test>  Step 2: |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| 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-pds3/extrinsics/logicals/testing.REG.2b   shows no current product with lid “testing.REG.2b”   1. 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-pds3/extrinsics 2. Repeat step 1. Note that versionName is 1.0   Note versionName is independent of extrinsicObject’s versionId, name, guid. |
| Test Results | Step 1:  Step 2:  Note: Unnecessary use of -X or --request, POST is already inferred.  \* Trying ::1...  \* Connected to localhost (::1) port 8080 (#0)  > POST /registry-pds3/extrinsics HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  > Content-type:application/xml  > Content-Length: 641  \* upload completely sent off: 641 out of 641 bytes  < HTTP/1.1 201  < Location: http://localhost:8080/registry-pds3/extrinsics/urn:uuid:ca6b95b0-e228-4bf2-a342-313043508c20  < Content-Type: application/xml  < Transfer-Encoding: chunked  < Date: Sun, 22 Apr 2018 00:21:51 GMT  \* Connection #0 to host localhost left intact  urn:uuid:ca6b95b0-e228-4bf2-a342-313043508c20  Step 3: Note that versionName=1.0 even though input file had no versionId attribute |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| 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. Show that no current product has LID “testing.REG.2a”: http://localhost:8080/registry-pds3/extrinsics/logicals/testing.REG.2a 2. curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.6a.xml http://localhost:8080/registry-pds3/extrinsics 3. Repeat step 1 to see the lid   An alternative to the steps below is to modify via GUID  curl -X POST -H "Content-type:application/xml" -v http://localhost:8080/registry-pds3/extrinsics/testing.REG.2a.v1.0/{approve,deprecate,undeprecate}   1. In a browser,  [http://localhost:8080/registry-ui/](http://pdsops2.jpl.nasa.gov/registry-ui/)   Under “LID”, enter “testing.REG.2a”. Click “Refresh”   1. Select row, set “Status” to “Approved”, hit “Update Status” 2. Select row, set “Status” to “Deprecated”, hit “Update Status” 3. Select row, set “Status” to “Submitted”, hit “Update Status”   The above actions get into the Tomcat server log, which the report service can process.   1. grep testing.REG.2a $CATALINA\_HOME/logs/localhost\_access\_log.*yyyy*-*mm*-*dd*.txt |
| Test Results | Step 1: If browser isn’t as below, delete using http://localhost:8080/registry-ui    Step 2:  \* Trying ::1...  \* Connected to localhost (::1) port 8080 (#0)  > POST /registry-pds3/extrinsics HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  > Content-type:application/xml  > Content-Length: 645  \* upload completely sent off: 645 out of 645 bytes  < HTTP/1.1 201  < Location: http://localhost:8080/registry-pds3/extrinsics/testing.REG.2a.v1.0  < Content-Type: application/xml  < Transfer-Encoding: chunked  < Date: Sun, 22 Apr 2018 00:25:43 GMT  \* Connection #0 to host localhost left intact  testing.REG.2a.v1.0  Step 3:  Step 4:  Step 5:  Step 6:  Step 7: same as Step 4  Step 8:  *0:0:0:0:0:0:0:1 - - [21/Oct/2017:02:27:37 -0700] "GET /registry-pds3/extrinsics/logicals/testing.REG.2a HTTP/1.1" 404 68*  *0:0:0:0:0:0:0:1 - - [21/Oct/2017:02:27:55 -0700] "GET /registry-pds3/extrinsics/logicals/testing.REG.2a HTTP/1.1" 200 776*  *127.0.0.1 - - [21/Oct/2017:02:30:22 -0700] "GET /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 720*  *127.0.0.1 - - [21/Oct/2017:02:30:22 -0700] "POST /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 -*  *127.0.0.1 - - [21/Oct/2017:02:30:36 -0700] "GET /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 719*  *127.0.0.1 - - [21/Oct/2017:02:30:36 -0700] "POST /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 -*  *127.0.0.1 - - [21/Oct/2017:02:31:04 -0700] "GET /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 721*  *127.0.0.1 - - [21/Oct/2017:02:31:04 -0700] "POST /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 -* |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| Test Case ID | REG.7 \*not ready for build 8b. 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 |  |

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| Test Case ID | REG.8 \*not ready for build 5a. 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 |  |

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| 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. 5M registrations for build 6a took 16 hours.   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=0.01067 sum=0.1  <?xml version="1.0" encoding="UTF-8" standalone="yes"?><ns2:extrinsicObject xmlns:ns2="http://registry.pds.nasa.gov" lid="stressTesting.T000000" name="Stress The Registry " objectType="Product" status="Submitted" description="Stolen from http://pdscm/2010/registry/registry-service/operate/index.html with attribute lid above changed for uniqueness" versionName="1.0" guid="stressTesting.T000000.v1.0" home="http://localhost:8080/registry"><ns2:slot id="155" name="last-name"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot id="156" name="cannotPossibleBeAnExistingSlot"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot id="157" name="phone"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot><ns2:slot id="158" name="first-name"><ns2:value>John</ns2:value></ns2:slot></ns2:extrinsicObject>  <?xml version="1.0" encoding="UTF-8" standalone="yes"?><ns2:extrinsicObject xmlns:ns2="http://registry.pds.nasa.gov" lid="stressTesting.T000001" name="Stress The Registry " objectType="Product" status="Submitted" description="Stolen from http://pdscm/2010/registry/registry-service/operate/index.html with attribute lid above changed for uniqueness" versionName="1.0" guid="stressTesting.T000001.v1.0" home="http://localhost:8080/registry"><ns2:slot id="160" name="last-name"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot id="161" name="cannotPossibleBeAnExistingSlot"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot id="162" name="phone"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot><ns2:slot id="163" name="first-name"><ns2:value>John</ns2:value></ns2:slot></ns2:extrinsicObject>  <?xml version="1.0" encoding="UTF-8" standalone="yes"?><ns2:extrinsicObject xmlns:ns2="http://registry.pds.nasa.gov" lid="stressTesting.T000002" name="Stress The Registry " objectType="Product" status="Submitted" description="Stolen from http://pdscm/2010/registry/registry-service/operate/index.html with attribute lid above changed for uniqueness" versionName="1.0" guid="stressTesting.T000002.v1.0" home="http://localhost:8080/registry"><ns2:slot id="165" name="last-name"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot id="166" name="cannotPossibleBeAnExistingSlot"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot id="167" name="phone"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot><ns2:slot id="168" name="first-name"><ns2:value>John</ns2:value></ns2:slot></ns2:extrinsicObject>  VIEW 3 good. Time(sec): avg=0.018 median=0.010 stdDev=0.01352 sum=0.1  stressTesting.T000000.v1.0 deleted  stressTesting.T000001.v1.0 deleted  stressTesting.T000002.v1.0 deleted  DELETE 3 good. Time(sec): avg=0.012 median=0.010 stdDev=0.00432 sum=0.0  Step 4: In 5b, the sums for 500,000 were 2348.7, 10706.9, 2476.9.  REGSTR 500000 good. Time(sec): avg=0.005 median=0.005 stdDev=0.00627 sum=2693.8  VIEW 500000 good. Time(sec): avg=0.004 median=0.004 stdDev=0.00840 sum=2237.8  DELETE 500000 good. Time(sec): avg=0.006 median=0.005 stdDev=0.00662 sum=2764.0 |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.19 |
| Test Personnel | Richard Chen |

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| Test Case ID | REG.10 |
| Description | Access registry via the registry client API (pds.registry) |
| Requirements | PASS L5.GEN.3: Services shall have an application programming interface.  PASS L5.REG.14: The service shall allow queries for registered artifacts. |
| Success Criteria | Contents and checksums of the registry artifacts match what have been ingested. |
| Test Steps | To setup the registry client, which only needs to be done once,  cd <wherever the .tar.gz file was expanded>  sudo python setup.py install  Clean the database as described in RESETREGISTRY in Section 3.1. Then harvest two files and see their associations listed via the registry client   1. cd *testDir* 2. bin/registry-file-list.py http://localhost:8080/registry-pds4 3. harvest *testDir*/bundle\_geo\_ra/data\_test/scraping -c harvest-policy-master.xml -e "\*.xml" -l h.out 4. bin/registry-file-list.py http://localhost:8080/registry-pds4 5. grep <GUIDs from previous step> h.out 6. bin/registry-package.py http://localhost:8080/registry-pds4 | grep Harvest 7. grep <GUID from previous step> h.out 8. bin/registry-association.py http://localhost:8080/registry-pds4 |
| Test Results | Step 2 shows nothing, correctly  Step 4:  Association Type: file\_ref, Target: urn:uuid:beea06fe-f630-4345-8e77-65ae262d716d  Association Type: file\_ref, Target: urn:uuid:952a075d-150e-49d4-96f2-8faf71223015  Step 5:  % grep urn:uuid:beea06fe-f630-4345-8e77-65ae262d716d h.out  INFO: [bundle\_geo\_ra/data\_test/scraping/pit\_test\_scraping.xml] Product has the following GUID: urn:uuid:beea06fe-f630-4345-8e77-65ae262d716d  SUCCESS: [bundle\_geo\_ra/data\_test/scraping/pit\_test\_scraping.xml] Successfully registered association to 'urn:uuid:beea06fe-f630-4345-8e77-65ae262d716d'  Step 6:  urn:uuid:cea7fc00-e881-4290-827b-f5a8ff069444 http://localhost:8080/registry set([]) Harvest-Package\_20180421212607  Step 7:  % grep urn:uuid:cea7fc00-e881-4290-827b-f5a8ff069444 h.out  Registration Package GUID urn:uuid:cea7fc00-e881-4290-827b-f5a8ff069444  Step 8:  urn:uuid:bf12f302-b322-488b-9eb0-9e4f033f249e urn:nasa:pds:profile:regrep:AssociationType:Ingest\_LDD.restriction\_of  urn:uuid:0ed00c4d-941a-44c5-9507-3cdea30b5fa5 urn:nasa:pds:profile:regrep:ObjectType:Product\_Software  urn:uuid:0ed00c4d-941a-44c5-9507-3cdea30b5fa5 urn:nasa:pds:profile:regrep:ObjectType:Product  urn:uuid:cea7fc00-e881-4290-827b-f5a8ff069444 urn:uuid:213f88ef-df3c-4156-a4ec-738d5647d0e4  urn:uuid:0ed00c4d-941a-44c5-9507-3cdea30b5fa5 urn:nasa:pds:profile:regrep:ObjectType:Product\_AIP  urn:uuid:bf12f302-b322-488b-9eb0-9e4f033f249e urn:nasa:pds:profile:regrep:AssociationType:Ingest\_LDD.attribute\_of  urn:uuid:0ed00c4d-941a-44c5-9507-3cdea30b5fa5 urn:nasa:pds:profile:regrep:ObjectType:Product\_SIP\_Deep\_Archive  urn:uuid:cea7fc00-e881-4290-827b-f5a8ff069444 urn:uuid:e9e69b9d-41eb-41c4-81cd-4606e56cb6ed  urn:uuid:f2b05ec7-3d05-467a-bc13-3dbeb6d46caf urn:registry:ObjectType:RegistryObject:ExternalIdentifier  urn:uuid:0ed00c4d-941a-44c5-9507-3cdea30b5fa5 urn:nasa:pds:profile:regrep:ObjectType:Product\_Attribute\_Definition  urn:uuid:0ed00c4d-941a-44c5-9507-3cdea30b5fa5 urn:nasa:pds:profile:regrep:ObjectType:Product\_SPICE\_Kernel  urn:uuid:5b3a879d-deb3-43b1-9394-a740f4082241 urn:uuid:74f4b3cc-5bb1-46d8-835d-fd6d8df7de84  urn:uuid:0ed00c4d-941a-44c5-9507-3cdea30b5fa5 urn:nasa:pds:profile:regrep:ObjectType:Product\_Data\_Set\_PDS3  urn:uuid:bf12f302-b322-488b-9eb0-9e4f033f249e urn:nasa:pds:profile:regrep:AssociationType:Product\_Class\_Definition.subclass\_of  urn:uuid:0ed00c4d-941a-44c5-9507-3cdea30b5fa5 urn:nasa:pds:profile:regrep:ObjectType:Product\_Bundle  urn:uuid:835cc509-44e0-4380-88fa-ca5a3f021525 urn:uuid:beea06fe-f630-4345-8e77-65ae262d716d  urn:uuid:835cc509-44e0-4380-88fa-ca5a3f021525 urn:uuid:952a075d-150e-49d4-96f2-8faf71223015  urn:uuid:f2b05ec7-3d05-467a-bc13-3dbeb6d46caf urn:registry:ObjectType:RegistryObject:ExtrinsicObject  urn:uuid:bf12f302-b322-488b-9eb0-9e4f033f249e urn:nasa:pds:profile:regrep:AssociationType:Product\_Bundle.bundle\_has\_schema\_collection  urn:uuid:cea7fc00-e881-4290-827b-f5a8ff069444 urn:uuid:58322f3a-f73b-4699-a3d3-1466f0d69da6 |
| Comments | Results met success criteria |
| Date of Testing | 2018.04.21 |
| Test Personnel | Richard Chen |

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| 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 | 2018.04.21 |
| Test Personnel | Richard Chen |

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| 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 | 2018.03.21 |
| Test Personnel | Richard Chen |

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| 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 https://pds-engineering.jpl.nasa.gov/development/pds4/5.0.0/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 | 2018.04.21 |
| Test Personnel | Richard Chen |

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| Test Case ID | SRCH.1 \*not ready for build 5a. 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 |  |

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| 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 | 2018.04 |
| Test Personnel | Paul Zimdars |

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| 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. after HVT.3 (assume database is registry-pds3):   1. http://localhost:8080/registry-ui/ 2. set Registry Service(s) to registry-pds3 3. Click tab “Packages”. Select one of the “Harvest-Package\_\*”, set Status to “Approved”, click “Update Status”. 4. date; search-core -H *binDir*/search-service/pds -p *binDir*/search-core/conf/defaults/pds/pds3/core.properties; date   The search-core above may take 2 hours.   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.   1. grep cassini $CATALINA\_HOME/logs/localhost\_access\_log.*yyyy*-*mm*-*dd*.txt 2. http://localhost:8080/search-analytics |
| Test Results | Step 3: this took ~30 minutes ../Screen%20Shot%202016-10-11%20at%2014.32.53.png  Step 4:  Tue Apr 17 18:01:18 PDT 2018  Processing config: attribute.xml  PDS Search Core Run Log  Version Version 1.12.0  Time Tue, Apr 17 2018 at 06:01:18 PM  Severity Level INFO  Search Home /PDS4tools/search-service/pds  Search Service URL http://localhost:8080/search-service  Search Core Properties /PDS4tools/search-core/conf/defaults/pds/pds3/core.properties  INFO: Completed: urn:nasa:pds:context\_pds3:attribute:attribute.lro\_\_dlre\_ch8\_tb\_max  INFO: Completed: urn:nasa:pds:context\_pds3:attribute:attribute.lro\_\_dlre\_ch5\_tb\_min  INFO: Completed: urn:nasa:pds:context\_pds3:attribute:attribute.selection\_query\_desc  INFO: Completed: urn:nasa:pds:context\_pds3:attribute:attribute.msl\_\_led\_state\_flag  INFO: Completed: urn:nasa:pds:context\_pds3:attribute:attribute.node\_desc  …  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.8  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.9  INFO: Posting: /PDS4tools/search-service/pds/index/search-tools.xml  INFO: Optimizing Search Service index.  SUCCESS: Completed posting data to the Search Service  Summary:  ==================================================  The Numbers:  -- Number of Warnings: 10  -- Number of Errors: 0  -- Bad Registries: []  -- Number of Missing Associations: 0  -- Association Cache Hits: 0  -- Number of products: 16878  ==================================================  Processing Time:  -- service.xml: 0 h, 0 m, 0 s  -- instrument.xml: 0 h, 1 m, 17 s  -- context.xml: 1 h, 28 m, 30 s  -- target.xml: 0 h, 7 m, 46 s  -- instrumenthost.xml: 0 h, 0 m, 22 s  -- attribute.xml: 0 h, 3 m, 54 s  -- class.xml: 0 h, 0 m, 10 s  -- dataset.xml: 0 h, 14 m, 38 s  -- investigation.xml: 0 h, 0 m, 8 s  ==================================================  Total Processing Time: 1 h, 56 m, 50 s  End of Log  Tue Apr 17 19:59:12 PDT 2018  Step 5:  Step 6: Note that 1) search-ui filters deprecated data sets, e.g. HRD < 16.0, and 2) Archive Information is there thanks to harvest of such information.    Step 7:  …  127.0.0.1 - - [17/Apr/2018:19:50:14 -0700] "GET /registry-pds3/extrinsics/logicals/urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens/latest HTTP/1.1" 200 128864  0:0:0:0:0:0:0:1 - - [17/Apr/2018:21:35:55 -0700] "GET /search-service/pds/search?q=cassini%20cda HTTP/1.1" 200 32835  0:0:0:0:0:0:0:1 - - [17/Apr/2018:21:39:49 -0700] "GET /search-ui/search.jsp?q=cassini+cda HTTP/1.1" 200 6908  0:0:0:0:0:0:0:1 - - [17/Apr/2018:21:39:50 -0700] "GET /search-service/pds/archive-filter?q=cassini+cda& HTTP/1.1" 200 38685  Step 8: |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| 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 da ta. |
| 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 3. (continued) In Refine Your Search, click “Comet SL9/Jupiter Collision (88)” 4. mars digital elevation maps   The “More” and “Hide” link failed for a while on firefox and chrome, so test that on various platforms for Neptune   1. Neptune 2. jupiter images 3. corona 4. NEAR-A-SPICE-6-V1.0 (a specific data set ID) |
| Test Results | Step 1:  Step 2:  Step 3:  Step 4:  Step 5:  Step 6:  Step 7:  Step 8: |
| Comments | Results met success criteria.  <https://oodt.jpl.nasa.gov/jira/browse/PDS-258>, created during testing of build 4b, suggests merging 2 related facets into 1  8b: step 6 closes <https://oodt.jpl.nasa.gov/jira/browse/PDS-528>. Search for “Jupiter Images” returns the Cassini Archive first, pushing down MGS Image Search. |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| 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 | Results match constraint criteria and consist of clickable links with text describing each link. |
| Test Steps | Also best run after HVT.3. In <http://localhost:8080/search-ui>:   1. mission: mars global surveyor 2. target:mercury 3. target: mercury |
| Test Results | Step 1:    Step 2:  Step 3: inserting a space bfore “mercury” gives significantly different results |
| Comments | Results met success criteria.  <https://oodt.jpl.nasa.gov/jira/browse/PDS-319>, created during build 5a, notes differences in search results between “target:mercury” and “target: mercury” |
| Date of Testing | 2018.04.17 |
| Test Personnel | Richard Chen |

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| Test Case ID | SRCH.7 \*not ready for build 8b. 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 |  |

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| Test Case ID | SRCH.8 |
| Description | Query for the data dictionary’s PDS3 elements and objects and PDS4 attributes and classes. |
| Requirements | PASS L5.SCH.1: The service shall provide a user interface for entering of queries and display of search results… |
| Success Criteria | Results match parameters and consist of clickable links with text describing each link. |
| Test Steps | Compare PDS3’s pdsdd.full with [https://pds.nasa.gov/tools/dd-search](https://pds.nasa.gov/tools/dd-search/):   1. pdsdd.full’s \*\_OBJECT\_DEFINITION vs. dd-search’s Class,PDS3 2. pdsdd.full’s ELEMENT\_DEFINITION vs. dd-search’s Attribute,PDS3   Compare PDS4’s Information Model with [dd-search](https://pds.nasa.gov/tools/dd-search's)   1. IM’s classes vs. dd-search’s Class,PDS4 2. IM’s Attributes vs. dd-search’s Attribute,PDS4 |
| Test Results | Step 1: dd-search and pdsdd.full have the same 89 results, e.g. ALIAS, ARRAY, …  Step 2: dd-search has 2184 results; pdsdd.full, 2196. All diffs were recently added to the pds3 data dictionary. They are:  GEO:BAUD  GEO:CENTROID\_LOCATION  GEO:CODE\_LENGTH  GEO:DELAY\_OFFSET  GEO:MODE  GEO:PARALLACTIC\_ANGLE\_CORRECTION  GEO:POINTING  GEO:TRANSFORM\_LENGTH  MSL:CCAM\_ANNOTATION\_COUNT  MSL:CCAM\_ANNOTATION\_NAME  MSL:CCAM\_ANNOTATION\_VALUE  MSL:TARGET\_NAME  Step 3: <https://pds.jpl.nasa.gov/pds4/doc/im/v1/index_1A00.html> has the IM. It happens that the html H3 tags correspond to classes, and in fact there are 375 H3 tags, just as dd-search has 375 members of Class,PDS4  Step 4: no easy, clever way to numerically check Attributes of the web page above with dd-search’s Attribute,PDS4. Spot check individual attributes.  Note that comparing against the .xsd fails because not all classes in the IM propogate. |
| Comments | Results met success criteria.  [PDS-357](https://oodt.jpl.nasa.gov/jira/browse/PDS-357), created during testing of 5b, handles the questions raised below.  Maybe it would help the user to see what schemas and versions of schemas are used.  Is it ok for ddsearch to lack:  Steps 1 and 2: is it all right for ddsearch not to have the equivalent attributes listed in the output? It may be because EN did not produce the corresponding Product\_Class\_Definition or \_Attribute\_. There are very likely more missing Product\_Class\_Attribute, but full lists (especially for dd-search) are hard to create.  Step 4: Does dd-search’s list correspond to the .xsd’s complexType + simpleType="[A-Z]\*" but not simpleType="[a-z]\*"? Where did dd-search’s Unsigned\* classes come from? There are probably more mismatches, but full lists are hard to create. Do the PDS4 attributes come from all (including node) released schemas? That would explain "along\_track\_timing\_offset". "abstract\_flag" is listed twice because dd search shows one attribute per Class x Attribute? Where do "alias" and "alias\_list" come from? dd-search:"Class" has a capitalized version of each. Where does character\_constraint come from? |
| Date of Testing | 2018.04.22 |
| Test Personnel | Richard Chen |

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| Test Case ID | SRCH.9 |
| Description | Test various capabilities described in release documents:   1. View datasets despite duplicate identifiers. |
| Requirements | PASS L5.SCH.1: The service shall provide a user interface for entering of queries and display of search results… |
| Success Criteria | All datasets with the same IDs but different registries (namely –pds3 and psa) are clickable |
| Test Steps | View datasets despite duplicate identifiers   1. cd *testDir*/; mkdir x 2. ln -s *testDir*/contextPDS3/\*/Product/\*VEX-E-V-SPICE\*.xml x/   Using the version of harvest that writest to registry-pds3   1. harvest -c harvest-policy-master.xml *testDir*/x -e "\*.xml" 2. [http://localhost:8080/registry-ui](http://localhost:8080/registry-ui/) >> Packages >> Approved >> Update Status 3. search-core -H *binDir*/search-service/pds -p *binDir*/search-core/conf/defaults/psa/pds3/core.properties *binDir*/search-core/conf/defaults/pds/pds3/core.properties [I added “/pds” to -H. Maybe that’s why the ESA output is weird?] 4. <http://localhost:8080/search-ui> >> vex spice 5. Click the two separate Data Sets; one from PSA, one from PDS |
| Test Results | Step 3:  PDS Harvest Tool Log  Version Version 1.13.0  Time Sat, Oct 21 2017 at 10:32:54 AM  Target(s) [*testDir*/x]  File Inclusions [\*.xml]  Severity Level INFO  Registry Location http://localhost:8080/registry-pds3  Registry Package Name Harvest-Package\_20171021103254  Registration Package GUID urn:uuid:e7210407-5e6f-476f-b2b7-56544c572e7f  INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1  INFO: [/Users/rchen/Desktop/test/x/data\_set\_VEX-E-V-SPICE-6-V1.0\_1.0.xml] Begin processing.  INFO: [/Users/rchen/Desktop/test/x/data\_set\_VEX-E-V-SPICE-6-V1.0\_1.0.xml] line 28: Mapping reference type 'has\_mission' to 'investigation\_ref'.  [snip…]  INFO: [/Users/rchen/Desktop/test/x/resource\_VEX-E-V-SPICE-6-V1.0\_\_BROWSERP\_VEX-E-V-SPICE-6-V1.0\_1.0.xml] Association has the following GUID: urn:uuid:c12f2f1f-aa25-4a86-99c8-86397aa836a0  Summary:  5 of 5 file(s) processed, 0 other file(s) skipped  0 error(s), 0 warning(s)  5 of 5 products registered.  5 of 5 ancillary products registered.  Product Types Registered:  1 Product\_Data\_Set\_PDS3  5 Product\_File\_Repository  4 Product\_Context  5 of 5 associations registered.  End of Log  Step 5:  Processing config: archiveinfo.xml  Processing config: attribute.xml  Processing config: class.xml  Processing config: context.xml  Processing config: dataset.xml  Processing config: instrument.xml  Processing config: instrumenthost.xml  Processing config: investigation.xml  Processing config: service.xml  Processing config: target.xml  Processing config: archiveinfo.xml  Processing config: attribute.xml  Processing config: class.xml  Processing config: context.xml  Processing config: dataset.xml  Processing config: instrument.xml  Processing config: instrumenthost.xml  Processing config: investigation.xml  Processing config: service.xml  Processing config: target.xml  PDS Search Core Run Log  Version Version 1.11.0  Time Sat, Oct 21 2017 at 10:38:41 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/defaults/psa/pds3/core.properties  Search Core Properties /PDS4tools/search-core/conf/defaults/pds/pds3/core.properties  INFO: Completed: urn:esa:psa:context\_pds3:data\_set:data\_set.ro-cal-alice-3-cr4b-v1.0  [snip…]  SUCCESS: Completed extraction: context.xml  INFO: Completed: urn:nasa:pds:context\_pds3:data\_set:data\_set.vex-e-v-spice-6-v1.0  SUCCESS: Completed extraction: dataset.xml  SUCCESS: Completed extraction: instrument.xml  SUCCESS: Completed extraction: instrumenthost.xml  SUCCESS: Completed extraction: investigation.xml  SUCCESS: Completed extraction: target.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 ...  INFO: Cleaning Search Service Index  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.0  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.1  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.2  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.3  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.4  INFO: Posting: /PDS4tools/search-service/pds/index/search-tools.xml  INFO: Optimizing Search Service index.  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: 4111  ==================================================  Processing Time:  -- instrument.xml: 0 h, 0 m, 0 s  -- context.xml: 0 h, 0 m, 2 s  -- target.xml: 0 h, 0 m, 0 s  -- archiveinfo.xml: 0 h, 0 m, 0 s  -- instrumenthost.xml: 0 h, 0 m, 0 s  -- attribute.xml: 0 h, 0 m, 0 s  -- class.xml: 0 h, 0 m, 0 s  -- dataset.xml: 0 h, 0 m, 0 s  -- investigation.xml: 0 h, 0 m, 0 s  ==================================================  Total Processing Time: 0 h, 0 m, 5 s  End of Log  Step 6:../../../../../../Desktop/Screen%20Shot%202017-04-21%20at%2  Step 7:../../../../../../Desktop/Screen%20Shot%202017-04-21%20at%2  ../../../../../../Desktop/Screen%20Shot%202017-04-21%20at%2 |
| Comments | Results met success criteria. |
| Date of Testing | 2017.04.21 |
| Test Personnel | Richard Chen |

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| Test Case ID | TPRT.1 |
| Description | Request data from transport-registry by specifying a LID |
| 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.5: The service shall include a checksum manifest … along with their associated MD5 checksums.  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 | Harvest must have run (e.g. HVT.3) and gotten absolute paths as inputs. Get some of the harvested LIDs; see <http://localhost:8080/registry-ui> if needed. This test uses   * urn:nasa:pds:context\_pds3:target:satellite.titan * urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens * urn:nasa:pds:context\_pds3:dataset:dataset.co-ssa-rss-1-tigr17-v1.0   Ensure CATALINA\_HOME/webapps/transport-registry/WEB-INF/config.xml has transport.RegistryProductHandler.registryUrl = http://localhost:8080/registry-pds3 Check transport-registry’s many downloading options by getting the same three files:   1. curl -X GET -o x1.zip -v "http://localhost:8080/transport-registry/prod?q=identifier+EQ+urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens+AND+identifier+EQ+urn:nasa:pds:context\_pds3:target:satellite.titan+AND+identifier+EQ+urn:nasa:pds:context\_pds3:dataset:dataset.co-ssa-rss-1-tigr19-v1.0" 2. curl -X GET -o x2.tgz -v "http://localhost:8080/transport-registry/prod?q=identifier+EQ+urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens+AND+identifier+EQ+urn:nasa:pds:context\_pds3:target:satellite.titan+AND+identifier+EQ+urn:nasa:pds:context\_pds3:dataset:dataset.co-ssa-rss-1-tigr19-v1.0+AND+package+EQ+TGZ" 3. curl -X GET -o x3.zip "http://localhost:8080/transport-registry/prod?identifier=urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens&identifier=urn:nasa:pds:context\_pds3:target:satellite.titan&identifier=urn:nasa:pds:context\_pds3:dataset:dataset.co-ssa-rss-1-tigr19-v1.0" 4. Same thing but in a browser, http://localhost:8080/transport-registry/prod?identifier=urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens&identifier=urn:nasa:pds:context\_pds3:target:satellite.titan&identifier=urn:nasa:pds:context\_pds3:dataset:dataset.co-ssa-rss-1-tigr19-v1.0&package=TGZ which creates file pds-package-<yyyymmddhhmmss>.tar.gz 5. Extract the four into their own directories. 6. diff -r x1 x2 7. diff -r x1 x3 8. diff -r x1 pds-package-<yyyymmddhhmmss> 9. diff x1/data\_set\_CO-SSA-RSS-1-TIGR19-V1.0\_1.0.xml *testDir/*contextPDS3/dataset/Product/data\_set\_CO-SSA-RSS-1-TIGR19-V1.0\_1.0.xml 10. diff x1/mission\_CASSINI-HUYGENS\_1.0.xml *testDir/*contextPDS3/investigation/Product/mission\_CASSINI-HUYGENS\_1.0.xml 11. diff x1/target\_TITAN\_1.0.xml *testDir/*contextPDS3/target/Product/target\_TITAN\_1.0.xml 12. Does x1/md5\_checksum.txt have correct checksums for all 3 files? On a mac: openssl md5 x1/\*.xml   To get size, replace step 4’s package=TGZ with package=TGZ\_SIZE. In a browser:   1. http://localhost:8080/transport-registry/prod?identifier=urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens&identifier=urn:nasa:pds:context\_pds3:target:satellite.titan&identifier=urn:nasa:pds:context\_pds3:dataset:dataset.co-ssa-rss-1-tigr19-v1.0&package=SIZE 2. date; ls -l pds-package-20180418091214 |awk '{ total += $5 }; END { print total }' |
| Test Results | Step 1 (Steps 2 and 3 are very similar):  Note: Unnecessary use of -X or --request, GET is already inferred.  \* Trying ::1...  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0\* Connected to localhost (::1) port 8080 (#0)  > GET /transport-registry/prod?q=identifier+EQ+urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens+AND+identifier+EQ+urn:nasa:pds:context\_pds3:target:satellite.titan+AND+identifier+EQ+urn:nasa:pds:context\_pds3:dataset:dataset.co-ssa-rss-1-tigr19-v1.0 HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  0 0 0 0 0 0 0 0 --:--:-- 0:00:01 --:--:-- 0< HTTP/1.1 200  < Content-disposition: attachment; filename="products\_pds-package-20180418090422.zip.zip"  < Content-Type: application/zip  < Content-Length: 49109  < Date: Wed, 18 Apr 2018 16:04:21 GMT  { [7995 bytes data]  100 49109 100 49109 0 0 29371 0 0:00:01 0:00:01 --:--:-- 29388  \* Connection #0 to host localhost left intact  Step 4:  Steps 6-11 show no differences  Step 12: Compare the values below with those in x1/md5\_checksum.txt  MD5(x1/data\_set\_CO-SSA-RSS-1-TIGR19-V1.0\_1.0.xml)= 1f95f35a45f736ce04f9af4df4095c5b  MD5(x1/mission\_CASSINI-HUYGENS\_1.0.xml)= 722ad7f09b6e61573ee1b1083183384e  MD5(x1/target\_TITAN\_1.0.xml)= cd366b9be257359b7c6d6cc53c23b6a6  Step 13:  Step 14:  Wed Apr 18 09:25:06 PDT 2018  170041 |
| Comments | Results met success criteria. |
| Date of Testing | 2018.04.18 |
| Test Personnel | Richard Chen |

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| Test Case ID | TPRT.3 |
| Description | Request data from transport-ofsn by specifying a path. Transport-ofsn can also transform the requested product. |
| Requirements | 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 | Besides $CATALINA\_HOME/webapps/transport-ofsn/WEB-INF/config.xml, modify $CATALINA\_HOME/webapps/transport-ofsn/WEB-INF/ofsn-ps.xml so that  productRoot=*testDir*  To activate that change:  shutdown.sh; startup.sh  Test every Return Type listed in the middle of <https://pds-engineering.jpl.nasa.gov/development/pds4/7.1.0/transport/transport-ofsn/operate>. First, some ls information:   1. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/&RT=DIRFILELIST" 2. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/&RT=DIRFILELIST1" 3. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/&RT=DIRLIST" 4. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/&RT=DIRLIST1" 5. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.tab&RT=FILELIST" 6. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.tab&RT=FILE\_LIST\_ZIP"   A get, then some ls information about that file   1. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.tab&RT=RAW" > x.xml 2. diff x.xml *testDir*/testTprt/ladee\_ldex.tab 3. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.tab&RT=RAW\_SIZE" 4. ls -ol *testDir*/testTprt/ladee\_ldex.tab 5. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.tab&RT=MD5" 6. openssl md5 *testdir*/testTprt/ladee\_ldex.tab   Some image transformations (get and transform)   1. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testPrep/i943630r.xml&RT=PDS\_TO\_JPG" > x.jpg 2. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testPrep/i943630r.xml&RT=PDS\_TO\_JP2" > x.jp2 3. nothing; PDS\_TO\_BMP is no longer supported. 4. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testPrep/i943630r.xml&RT=PDS\_TO\_GIF" > x.gif 5. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testPrep/i943630r.xml&RT=PDS\_TO\_PNG" > x.png 6. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testPrep/i943630r.xml&RT=PDS\_TO\_TIFF" > x.tiff 7. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testPrep/i943630r.xml&RT=PDS\_TO\_TIF" > x.tif 8. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testPrep/i943630r.xml&RT=PDS\_TO\_PNM" > x.pnm   Some label transformations   1. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.xml&RT=PDS4\_TO\_PVL" > x.pvl 2. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.xml&RT=PDS4\_TO\_HTML" > x.html 3. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.xml&RT=PDS4\_TO\_HTML\_STRUCTURE\_ONLY" > xSO.html 4. Using editor or browser, visually compare x.\* with *testDir*/testTprt/ladee\_ldex.xml   Data transformation   1. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.xml&RT=PDS4\_TO\_CSV" 2. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/msl\_chemcam.lbl&RT=PDS3\_TO\_PDS4\_LABEL" 3. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/msl\_chemcam.lbl&RT=PDS\_LABEL"   More “Return Type”s   1. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/msl\_chemcam.lbl&RT=PDS\_ZIP" > x.zip 2. unzip x.zip 3. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/msl\_chemcam.lbl&RT=PDS\_ZIP\_SIZE" 4. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt&RT=PDS\_ZIPD" > x.zip 5. unzip x.zip 6. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt&RT=PDS\_ZIPD\_SIZE"   Currently unsupported capabilities: FITS file, CDF file   1. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/mvn\_lpw.xml&RT=PDS\_TO\_JPG" 2. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/mvn\_iuv.xml&RT=PDS\_TO\_JPG"   Check proper handling of inaccessible directories   1. chmod 000 testTprt/dirLevel1a/dirLevel2 2. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/dirLevel1a/&RT=DIRFILELIST" 3. cp testTprt/dirLevel1a/fileLevel2b.txt testTprt/dirLevel1a/.ignoreME 4. chmod 777 testTprt/dirLevel1a/dirLevel2 5. repeat step 37 6. rm testTprt/dirLevel1a/.ignoreME |
| Test Results | Step 1:  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.qub</OFSN>  <fileSize>50339840</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.xml</OFSN>  <fileSize>22618</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/ladee\_ldex.tab</OFSN>  <fileSize>500</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/ladee\_ldex.xml</OFSN>  <fileSize>7031</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.csv</OFSN>  <fileSize>2241087</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.lbl</OFSN>  <fileSize>28086</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.fits</OFSN>  <fileSize>449280</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.xml</OFSN>  <fileSize>75445</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.cdf</OFSN>  <fileSize>230296</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.xml</OFSN>  <fileSize>8423</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1b/tcshrc</OFSN>  <fileSize>29</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2a.txt</OFSN>  <fileSize>72</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2b.txt</OFSN>  <fileSize>307</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/dirLevel2/fileLevel3.txt</OFSN>  <fileSize>1550</fileSize>  </dirEntry>  </dirResult>  Step 2:  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.qub</OFSN>  <fileSize>50339840</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.xml</OFSN>  <fileSize>22618</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/ladee\_ldex.tab</OFSN>  <fileSize>500</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/ladee\_ldex.xml</OFSN>  <fileSize>7031</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.csv</OFSN>  <fileSize>2241087</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.lbl</OFSN>  <fileSize>28086</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.fits</OFSN>  <fileSize>449280</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.xml</OFSN>  <fileSize>75445</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.cdf</OFSN>  <fileSize>230296</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.xml</OFSN>  <fileSize>8423</fileSize>  </dirEntry>  </dirResult>  Step 3:  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a</OFSN>  <fileSize>1929</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1b</OFSN>  <fileSize>29</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/dirLevel2</OFSN>  <fileSize>1550</fileSize>  </dirEntry>  </dirResult>  Step 4:  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry>  <OFSN>testTprt/dirLevel1a</OFSN>  <fileSize>379</fileSize>  </dirEntry>  <dirEntry>  <OFSN>testTprt/dirLevel1b</OFSN>  <fileSize>29</fileSize>  </dirEntry>  </dirResult>  Step 5:  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <OFSN>/testTprt/ladee\_ldex.tab</OFSN>  <fileSize>500</fileSize>  </dirEntry>  </dirResult>  Step 6:  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <OFSN>ladee\_ldex.tab.zip</OFSN>  <fileSize>295</fileSize>  </dirEntry>  </dirResult>  Step 7:  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  100 500 100 500 0 0 2610 0 --:--:-- --:--:-- --:--:-- 2645  Step 8 shows no difference  Step 9:  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <fileSize>500</fileSize>  </dirEntry>  Step 10: Result from this step matches previous step  -rw-r--r-- 1 rchen 500 Oct 25 13:41 *testDir*/testTprt/ladee\_ldex.tab  Step 11:  1c95600a27bf27ddaddaa9bdedaff44d  Step 12: Result from this step matches previous step  MD5(testTprt/ladee\_ldex.tab)= 1c95600a27bf27ddaddaa9bdedaff44d  Steps 13-20: the file sizes differ, but the images are always:  Macintosh HD:Users:rchen:Desktop:x.jpg  Step 21:  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  100 6019 100 6019 0 0 15360 0 --:--:-- --:--:-- --:--:-- 15433  Step 22:  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  100 29172 100 29172 0 0 508k 0 --:--:-- --:--:-- --:--:-- 527k  Step 23:  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  100 10799 100 10799 0 0 426k 0 --:--:-- --:--:-- --:--:-- 479k  Step 24:../../../../../../Desktop/Screen%20Shot%202017-04-21%20at%2  Step 25-33: as expected  Steps 34,35:  <!DOCTYPE html><html><head><title>Apache Tomcat/8.5.5 - Error report</title><style type="text/css">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;}.line {height: 1px; background-color: #525D76; border: none;}</style> </head><body><h1>HTTP Status 500 - </h1><div class="line"></div><p><b>type</b> Exception report</p><p><b>message</b> <u></u></p><p><b>description</b> <u>The server encountered an internal error that prevented it from fulfilling this request.</u></p><p><b>exception</b></p><pre>java.lang.NullPointerException  gov.nasa.pds.transport.AbstractPdsGetHandler.sizeOf(AbstractPdsGetHandler.java:101)  gov.nasa.pds.transport.OFSNFileHandler.query(OFSNFileHandler.java:192)  org.apache.oodt.grid.ProductQueryServlet.handleQuery(ProductQueryServlet.java:63)  org.apache.oodt.grid.QueryServlet.doPost(QueryServlet.java:102)  org.apache.oodt.grid.QueryServlet.doGet(QueryServlet.java:75)  javax.servlet.http.HttpServlet.service(HttpServlet.java:622)  javax.servlet.http.HttpServlet.service(HttpServlet.java:729)  org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)  </pre><p><b>note</b> <u>The full stack trace of the root cause is available in the Apache Tomcat/8.5.5 logs.</u></p><hr class="line"><h3>Apache Tomcat/8.5.5</h3></body></html>  Step 37: inaccessible directory ignored  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2a.txt</OFSN>  <fileSize>72</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2b.txt</OFSN>  <fileSize>307</fileSize>  </dirEntry>  Step 40:  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2a.txt</OFSN>  <fileSize>72</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2b.txt</OFSN>  <fileSize>307</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/dirLevel2/fileLevel3.txt</OFSN>  <fileSize>1550</fileSize>  </dirEntry>  </dirResult> |
| Comments | Results met test criteria  <https://oodt.jpl.nasa.gov/jira/browse/PDS-322>, created during build 5a, requests:  1) (from Step 27) PDS3\_TO\_PDS4\_LABEL translate PDS3’s SPREADSHEET/FIELD/DESCRIPTION to PDS4’s Field\_Delimited/description  2) (from Step 29) PDS\_LABEL correctly carry over PDS3 constructs GROUP,  namespaces, post-value units, and pointers to documentation |
| Date of Testing | 2017.04.21 |
| Test Personnel | Richard Chen |

|  |  |
| --- | --- |
| Test Case ID | TPRT.4 |
| Description | Request data using the Transport Proxy, a proxy layer for PDS3 product servers |
| Requirements | PASS L5.TRS.1: The service shall accept requests for download of PDS products. |
| Success Criteria | The transport service returns the requested data. |
| Test Steps | $CATALINA\_HOME/webapps/prod/WEB-INF/classes/aliases.properties determines where the aliased request, so append line possibly done in installation):  urn\:eda\:rmi\:PDS.testme=http\://localhost\:8080/transport-ofsn/prod  and shutdown.sh and startup.sh. Then   1. curl -X GET -v "http://localhost:8080/prod/?object=PDS.testme&keywordQuery=OFSN+EQ+/testTprt+AND+RT+EQ+DIRFILELIST" |
| Test Results | Step 1: the heart of the output matches step 1 of TRPT.1  Note: Unnecessary use of -X or --request, GET is already inferred.  \* Trying ::1...  \* Connected to localhost (::1) port 8080 (#0)  > GET /prod/?object=PDS.testme&keywordQuery=OFSN+EQ+/testTprt+AND+RT+EQ+DIRFILELIST HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  < HTTP/1.1 200 OK  < Content-Type: text/xml  < Content-Length: 1756  < Date: Sat, 22 Apr 2017 07:08:49 GMT  <?xml version="1.0" encoding="UTF-8"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.qub</OFSN>  <fileSize>50339840</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.xml</OFSN>  <fileSize>22618</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/ladee\_ldex.tab</OFSN>  <fileSize>500</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/ladee\_ldex.xml</OFSN>  <fileSize>7031</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.csv</OFSN>  <fileSize>2241087</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.lbl</OFSN>  <fileSize>28086</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.fits</OFSN>  <fileSize>449280</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.xml</OFSN>  <fileSize>75445</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.cdf</OFSN>  <fileSize>230296</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.xml</OFSN>  <fileSize>8423</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1b/tcshrc</OFSN>  <fileSize>29</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2a.txt</OFSN>  <fileSize>72</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2b.txt</OFSN>  <fileSize>307</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/dirLevel2/fileLevel3.txt</OFSN>  <fileSize>1550</fileSize>  Tprt/dirLevel1a/dirLevel2/fileLevel3.txt</OFSN>  <fileSize>1550</fileSize>  </dirEntry>  \* Connection #0 to host localhost left intact  </dirResult> |
| Comments | Results met test criteria |
| Date of Testing | 2017.04.22 |
| Test Personnel | Richard Chen |

|  |  |
| --- | --- |
| Test Case ID | TPRT.5 |
| Description | Request multiple files from transport-registry by specifying multiple LIDs |
| Requirements | PASS L5.TRS.1: The service shall accept requests for download of PDS products. |
| Success Criteria | The transport service returns the requested data. |
| Test Steps | Since this feature uses the search registry instead of the normal registry, first run AAFUNCTION.3, then remove from $CATALINA\_HOME/webapps/transport-registry/WEB-INF/config.xml  <server className="gov.nasa.pds.transport.RegistryProductHandler" type="product"/>  <property key="gov.nasa.pds.transport.RegistryProductHandler.tmpDir">/tmp</property>  <property key="gov.nasa.pds.transport.RegistryProductHandler.registryUrl">http://localhost:8080/registry-pds3,http://localhost:8080/registry-pds4</property>  (and possibly shutdown.sh; startup.sh). Then run AAFUNCTION.4, then:   1. cd *testDir*; mkdir x; cd x 2. grep logical\_identifier ../bundle\_geo\_ra/data\_derived/\*xml | sed 's/.\*<.\*>\(.\*\)<\/.\*>/\1/' > lids.txt 3. cat lids.txt 4. curl -X GET -o derived.zip -v "http://localhost:8080/transport-registry/prod?identifier-list=file:///*testDir*/x/lids.txt" 5. unzip derived.zip; cd .. 6. diff -r x bundle\_geo\_ra/data\_derived 7. rm -r x |
| Test Results | Step 3:  urn:nasa:pds:phx\_ra:data\_derived  urn:nasa:pds:phx\_ra:data\_derived:sol006  urn:nasa:pds:phx\_ra:data\_derived:sol007  …  urn:nasa:pds:phx\_ra:data\_derived:sol149b  Step 6:  Only in x: derived.zip  Only in x: lids.txt  Only in x: md5\_checksums.txt |
| Comments | Results met test criteria. |
| Date of Testing | 2017.04.22 |
| Test Personnel | Richard Chen |

|  |  |
| --- | --- |
| Test Case ID | TPRT.6 |
| Description | Upload files to a staging area |
| Requirements | PASS. No specific functional requirement. |
| Success Criteria | The transport service returns the requested data. |
| Test Steps | 1. In a browser, <http://localhost:8080/transport-upload/> 2. Click “Browse”. Navigate to *testDir* and select testProcs.docx 3. diff /tmp/testProcs.docx *testDir*/testProcs.docx |
| Test Results | Step 1:  urn:nasa:pds:phx\_ra:data\_derived  urn:nasa:pds:phx\_ra:data\_derived:sol006  urn:nasa:pds:phx\_ra:data\_derived:sol007  …  urn:nasa:pds:phx\_ra:data\_derived:sol149b  Step 2:  Step 3 shows no difference |
| Comments | Results met test criteria. |
| Date of Testing | 2018.04.23 |
| Test Personnel | Richard Chen |

## 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](http://oodt.jpl.nasa.gov/jira/browse/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](http://oodt.jpl.nasa.gov/jira/browse/PDS-34) | improve | n/a – expected behavior | Registry: association to obsoleted product not automatically updated |
| closed | [PDS-35](http://oodt.jpl.nasa.gov/jira/browse/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](http://oodt.jpl.nasa.gov/jira/browse/PDS-45) | improve | REG.9 | Registry: curl –X DELETE …/registry/packages/<guid>/members fails |
| closed | [PDS-46](http://oodt.jpl.nasa.gov/jira/browse/PDS-46) | minor | REG.4 | Validate: -x fails unexpectedly |
| closed | [PDS-47](http://oodt.jpl.nasa.gov/jira/browse/PDS-47) | minor | REG.6 | Registry: product’s initial status is “Unknown” |
| closed | [PDS-48](http://oodt.jpl.nasa.gov/jira/browse/PDS-48) | improve | n/a – expected behavior | Validate: files within bundle.xml are not validated |
| closed | [PDS-49](http://oodt.jpl.nasa.gov/jira/browse/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](http://oodt.jpl.nasa.gov/jira/browse/PDS-52) | major | CTLG.3 | Catalog: -m ingest does not handle multiple \*\_CATALOG in voldesc |
| closed | [PDS-53](http://oodt.jpl.nasa.gov/jira/browse/PDS-53) | major | n/a – expected behavior | Catalog: -m ingest quits without voldec.cat |
| closed | [PDS-54](http://oodt.jpl.nasa.gov/jira/browse/PDS-54) | improve | CTLG.3 | Catalog: -m ingest gives uninformative error message for dsmap file |
| closed | [PDS-55](http://oodt.jpl.nasa.gov/jira/browse/PDS-55) | improve | moved to PDS-113 and -114 | Generate: can’t handle some constructs |
| closed | [PDS-56](http://oodt.jpl.nasa.gov/jira/browse/PDS-56) | major | SCH.5 | Search: if >10 results, only the first 10 are accessible |
| closed | [PDS-57](http://oodt.jpl.nasa.gov/jira/browse/PDS-57) | minor | SCH.3 | Search: superseded datasets returned |
| closed | [PDS-58](http://oodt.jpl.nasa.gov/jira/browse/PDS-58) | improve | PRG.1 | Generate: bad error message when neither –d nor –o is given |
| closed | [PDS-63](http://oodt.jpl.nasa.gov/jira/browse/PDS-63) | minor | HVT.6 | Harvest: crashes on one specific file |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-85](http://oodt.jpl.nasa.gov/jira/browse/PDS-85) | improve | PRV.1 | Validate: should use schema and schematron specified in labels |
| closed | [PDS-86](http://oodt.jpl.nasa.gov/jira/browse/PDS-86) | improve | n/a – expected behavior | Search: after searching and refining, new search unintentionally refines |
| closed | [PDS-87](http://oodt.jpl.nasa.gov/jira/browse/PDS-87) | minor | CTLG.1 | Catalog: -cconfig fails |
| closed | [PDS-88](http://oodt.jpl.nasa.gov/jira/browse/PDS-88) | improve | CTLG.3 | Catalog: bad output message when voldesc points to a missing file |
| closed | [PDS-89](http://oodt.jpl.nasa.gov/jira/browse/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](http://oodt.jpl.nasa.gov/jira/browse/PDS-113) | improve | PRG.1 | Generate: handle detached files in labels |
| closed | [PDS-114](http://oodt.jpl.nasa.gov/jira/browse/PDS-114) | improve | PRG.1 | Generate: update tool scenario documentation |
| closed | [PDS-123](http://oodt.jpl.nasa.gov/jira/browse/PDS-123) | improve | CTLG.3 | Catalog: poor error message if no config file or command-line params |
| closed | [PDS-125](http://oodt.jpl.nasa.gov/jira/browse/PDS-125) | minor | SCH.3, SCH.5 | Search: superseded data sets appear, and search tools don’t |
| closed | [PDS-134](http://oodt.jpl.nasa.gov/jira/browse/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](http://oodt.jpl.nasa.gov/jira/browse/PDS-161) | improve | CTLG.1 | Catalog: -m compare should compare token by token, not line by line |
| closed | [PDS-162](http://oodt.jpl.nasa.gov/jira/browse/PDS-162) | improve | n/a – expected behavior | Catalog: -m ingest does nothing with reference.cat |
| closed | [PDS-163](http://oodt.jpl.nasa.gov/jira/browse/PDS-163) | improve | CTLG.3 | Catalog: -m ingest reregisters files if listed in multiple voldescs |
| closed | [PDS-164](http://oodt.jpl.nasa.gov/jira/browse/PDS-164) | minor | n/a – expected behavior | Search: search-ui returns differently than search-service |
| closed | [PDS-165](http://oodt.jpl.nasa.gov/jira/browse/PDS-165) | improve | SRCH.5 | Search: for targets, show PRIMARY\_BODY\_NAME when not N/A. |
| open | [PDS-166](http://oodt.jpl.nasa.gov/jira/browse/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](http://oodt.jpl.nasa.gov/jira/browse/PDS-213) | major | PRV.2 | Validate: the tool is not finding document files correctly |
| closed | [PDS-220](http://oodt.jpl.nasa.gov/jira/browse/PDS-220) | improve | AAFUNCTION.4 | Search: many resultant resource products clutter output |
| closed | [PDS-225](http://oodt.jpl.nasa.gov/jira/browse/PDS-225) | improve | SCMA.1/SCMA.REL1101N2 | Validate: treat role="warning" differently than default (role="error") |
| closed | [PDS-227](https://oodt.jpl.nasa.gov/jira/browse/PDS-227) | improve | CTLG.3 | Catalog: Re-ingesting a file skipped during ingest (e.g. ref.cat) re-registers it |

Testing of build 4b found 0 major anomalies, 2 minor, 1 improvement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-257](https://oodt.jpl.nasa.gov/jira/browse/PDS-257) | minor | PRV.2 | Transform tool does nothing with TABLEs and COLUMNs for PDS3->PDS4 |
| open | [PDS-258](https://oodt.jpl.nasa.gov/jira/browse/PDS-258) | improve | SCH.5 | In search-ui’s results, merge 2 related facets into 1 |
| closed | [PDS-259](https://oodt.jpl.nasa.gov/jira/browse/PDS-259) | minor | SCH.5 | Generate balks at a getRecords() call that previously worked |

Testing of build 5a found 0 major anomalies, 4 minor, 7 improvements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-312](https://oodt.jpl.nasa.gov/jira/browse/PDS-312) | improve | AAFUNCTION.3 | http://localhost:8080/registry-ui needs one unexpected click |
| closed | [PDS-313](https://oodt.jpl.nasa.gov/jira/browse/PDS-313) | minor | PRT.1 | transform transforms only the first column of a table |
| closed | [PDS-314](https://oodt.jpl.nasa.gov/jira/browse/PDS-314) | minor | PRV.1 | validate dirX passes, but validate 1fileInDirX fails |
| closed | [PDS-315](https://oodt.jpl.nasa.gov/jira/browse/PDS-315) | minor | PRV.2 | validate misses invalid directory\_path\_name |
| closed | [PDS-316](https://oodt.jpl.nasa.gov/jira/browse/PDS-316) | improve | PRV.3 | clarify and check for proper usage of referential integrity feature |
| closed | [PDS-317](https://oodt.jpl.nasa.gov/jira/browse/PDS-317) | improve | SRCH.3 | registry-ui takes FOREVER to approve a large package |
| open | [PDS-319](https://oodt.jpl.nasa.gov/jira/browse/PDS-319) | improve | SRCH.6 | search-ui returns different results for “target:mercury” and “target: mercury” |
| closed | [PDS-321](https://oodt.jpl.nasa.gov/jira/browse/PDS-321) | minor | TPRT.1 | transport TGZ\_SIZE, ZIPD\_SIZE oddly return the sum of size of raw files |
| open | [PDS-322](https://oodt.jpl.nasa.gov/jira/browse/PDS-322) | improve | TPRT.3 | transport with various RTs could handle some PDS3 features better |
| closed | [PDS-323](https://oodt.jpl.nasa.gov/jira/browse/PDS-323) | improve | TPRT.3 | transport PDS4\_TO\_CSV chokes on data\_type ASCII\_Date\_Time |
| closed | [PDS-324](https://oodt.jpl.nasa.gov/jira/browse/PDS-324) | improve | TPRT.3 | transport doesn’t transform FITS or CDF files |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-348](https://oodt.jpl.nasa.gov/jira/browse/PDS-348) | minor | HVT.5 | Cannot delete two packages at one time. |
| open | [PDS-343](https://oodt.jpl.nasa.gov/jira/browse/PDS-343) | minor | PRT.1 | Was PDS-349. Ugly warning message from transform |
| closed | [PDS-350](https://oodt.jpl.nasa.gov/jira/browse/PDS-350) | improve | POR.1 | Remove extra carriage-return in long output value |
| closed | [PDS-351](https://oodt.jpl.nasa.gov/jira/browse/PDS-351) | minor | PRV.1 | Validate with multiple schemas fails |
| closed | [PDS-352](https://oodt.jpl.nasa.gov/jira/browse/PDS-352) | improve | PRV.3 | Reduce ugliness of error message |
| closed | [PDS-353](https://oodt.jpl.nasa.gov/jira/browse/PDS-353) | minor | TPRT.3 | Disambiguate transport-ofsn’s output |
| closed | [PDS-355](https://oodt.jpl.nasa.gov/jira/browse/PDS-355) | minor | SRCH.8 | dd-search incorrectly orders PDS3 Attribute |
| open | [PDS-357](https://oodt.jpl.nasa.gov/jira/browse/PDS-357) | improve | SRCH.8 | Questions about why some Attributes and Classes are missing. |

Testing of build 6a found 0 major anomalies, 3 minor, 2 improvements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-397](https://oodt.jpl.nasa.gov/jira/browse/PDS-397) | minor | HVT.2 | harvest –P –w finds no files in persistent mode |
| open | [PDS-398](https://oodt.jpl.nasa.gov/jira/browse/PDS-398) | improve | PRG.1 | generate -o behaves unexpectedly |
| closed | [PDS-366](https://oodt.jpl.nasa.gov/jira/browse/PDS-366) | improve | PRT.1 | Was PDS-399. works under java 1.6 but not 1.8 |
| closed | [PDS-401](https://oodt.jpl.nasa.gov/jira/browse/PDS-401) | minor | PRV.3 | warn when bundle has LID references not in the bundle |
| closed | [PDS-402](https://oodt.jpl.nasa.gov/jira/browse/PDS-402) | minor | HVT.7 | associations persist after package deleted |

Testing of build 6b found 1 major anomaly, 1 minor, 2 improvements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-443](https://oodt.jpl.nasa.gov/jira/browse/PDS-443) | major | AAFUNCTION.3 | Harvest doesn’t handle collection.xml files conforming to schematron 1600 |
| closed | [PDS-444](https://oodt.jpl.nasa.gov/jira/browse/PDS-444) | improve | CTLG.3 | catalog –mingest has long warnings and incorrect documentation |
| closed | [PDS-446](https://oodt.jpl.nasa.gov/jira/browse/PDS-446) | improve | PRT.2 | Ugly warning message when transforming an Array\_3D\_Image |
| closed | [PDS-447](https://oodt.jpl.nasa.gov/jira/browse/PDS-447) | minor | TPRT.5 | transport-registry/prod?identifier-list doesn’t work |

Testing of build 7a found 0 major anomalies, 1 minor, 1 improvement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-469](https://oodt.jpl.nasa.gov/jira/browse/PDS-469) | minor | HVT.6 | Harvest of non-data picks up hidden files |
| closed | [PDS-470](https://oodt.jpl.nasa.gov/jira/browse/PDS-470) | minor | PRG.1 | Generate filters instead of passing through elements with nil values |

Testing of build 7b found 0 major anomalies, 2 minor, 1 improvement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-486](https://oodt.jpl.nasa.gov/jira/browse/PDS-486) | minor | PRV.1 | Spurious errors possibly related to validate’s -e option |
| closed | [PDS-496](https://oodt.jpl.nasa.gov/jira/browse/PDS-469) | improve | PRV.3 | Validate picks up hidden files. Rejected. |
| open | [PDS-497](https://oodt.jpl.nasa.gov/jira/browse/PDS-497) | minor | HVT.8 | Handle filename beginning with / and checksum in all caps |

Testing of build 8a found 0 major anomalies, 3 minor, 3 improvements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| closed | [PDS-518](https://oodt.jpl.nasa.gov/jira/browse/PDS-518) | improve | MOD.1 | Unexpected error messages |
| closed | [PDS-519](https://oodt.jpl.nasa.gov/jira/browse/PDS-519) | improve | PRG.1 | Unexpected warning messages |
| open | [PDS-520](https://oodt.jpl.nasa.gov/jira/browse/PDS-520) | minor | PRV.1 | Handle “+” in format |
| closed | [PDS-521](https://oodt.jpl.nasa.gov/jira/browse/PDS-521) | minor | PRV.1 | Option -R pds4.bundle negates -e "\*.xml" |
| closed | [PDS-522](https://oodt.jpl.nasa.gov/jira/browse/PDS-522) | improve | PRV.2 | Less brutal error message for missing file |
| closed | [PDS-523](https://oodt.jpl.nasa.gov/jira/browse/PDS-523) | minor | PRT.1 | Transform fails on table\_character to pds3-label |

Testing of build 8b found 2 major anomalies, 4 minor, 0 improvements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| open | [PDS-501](https://oodt.jpl.nasa.gov/jira/browse/PDS-501) | minor | PRV.7 | Reopened. Changes to validate’s output make some errors look ok |
| closed | [PDS-533](https://oodt.jpl.nasa.gov/jira/browse/PDS-533) | minor | PRT.3 | Output pds4 label does not validate |
| open | [PDS-548](https://oodt.jpl.nasa.gov/jira/browse/PDS-548) | minor | PRT.3 | Stop generate if errors |
| closed | [PDS-558](https://oodt.jpl.nasa.gov/jira/browse/PDS-558) | major | MOD.1 | Produces unusable .xsd |
| closed | [PDS-559](https://oodt.jpl.nasa.gov/jira/browse/PDS-559) | major | PRS.1 | Do something, anything |
| open | [PDS-560](https://oodt.jpl.nasa.gov/jira/browse/PDS-560) | minor | PRT.3 | Update the outputted xml |

## Requirements Traceability

This test traceability matrix lists the requirement ID, the system component of the requirement, the ID of the test case in Section 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, REG.10,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 | GEN.2 | skip |
| 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, PRV.3 | pass |
| L5.PRP.VA.4 | Prep: Validation Tool | PRV.4 | pass |
| 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.3 | 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, REG.10 | 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, POR.1, SRCH.5,SRCH.8 | 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.7 | skip |
| L5.SEC.1 | Security Service | GEN.2, SEC.1 | pass |
| L5.SEC.2 | Security Service | AAFUNCTION.3, SEC.1 | pass |
| L5.SEC.3 | Security Service | GEN.2, 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, TPRT.3, TPRT.4 | pass |
| L5.TRS.2 | Transport Service | TPRT.1 | pass |
| L5.TRS.3 | Transport Service | TPRT.3 | pass |
| L5.TRS.4 | Transport Service | TPRT.1 | pass |
| L5.TRS.5 | Transport Service | TPRT.1 | pass |
| 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 |
| 4.2.2 | Portal | POR.2 | pass |
| L4.PRP.2 | Prep: Generate Tool | PRG.1 | pass |
| L4.PRP.4 | Prep: Transform Tool | PRT.1 | pass |
|  | Prep: PDS4 Tools | PRP.1 | pass |
| 1.3.3 | PDS Requirements | SCMA.1 | pass |
|  | Model: LDDTool | MOD.1 | pass |

Test Status: “skip” signifies requirements not implemented nor tested in build 8b. Those test cases are included for future builds only.

Of the 97 requirements listed above, 91 were tested during Build 8b integration and test.

## Miscellaneous

### Test Data

https://pds-engineering.jpl.nasa.gov/content/build\_8b\_deliverables has this document as well as test data PDS4test.build8b.tgz.

### Test Environment

Build 8b integration and test environment encompasses the following:

|  |  |  |  |
| --- | --- | --- | --- |
| **Hostname** | **OS** | **Memory** | **Software** |
| local host (mac) | Mac OS X 10.11.6 | 16GB RAM | Catalog, Harvest, Model, Portal, Preparation (Generate, Extract, Transform, Validate), Registry, Search, Storage, Transport |
| pds-gamma | Linux | 24GB | Security |
| pdsops | Linux | 12GB | Report |

### Configuration Management

The PDS Configuration Management (CM) process will uniquely identify the build 8b and other releases. It will be followed and maintained by the Operations Team, which will act as the configuration management process engineer.

### 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