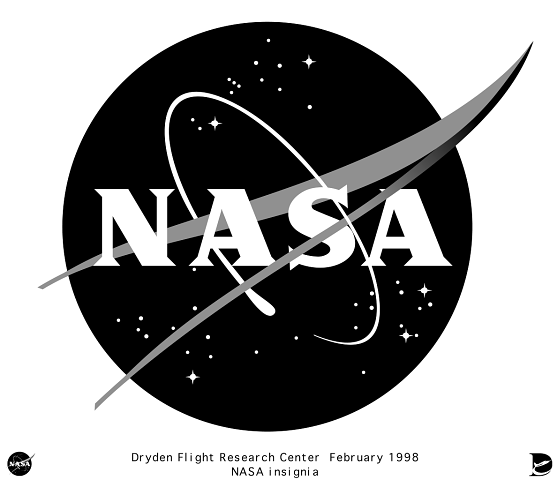
Plan Document

NASA Planetary Data System

PDS4 System

Build 10b Test Document



## Change Log

|  |  |  |  |
| --- | --- | --- | --- |
| **Revision** | **Date** | **Description** | **Author** |
| Draft |  | Initial draft release. |  |
| 1c | May 16, 2011 | Modified many tests to work with build 1c of Harvest and Registry. Other minor revisions. | Richard Chen |
| 1d | Oct 24, 2011 | Updated for build 1d | Richard Chen |
| 2a | Nov 11, 2011 | Updated for build 2a | Richard Chen |
| 2b | Feb 28, 2012 | Updated for build 2b | Richard Chen |
| 2b.1 | Mar 7, 2012 | Re-added HVT.T3, expanded SRCH.T5 | Richard Chen |
| 2c | Jul 17, 2012 | Updated for build 2c | Richard Chen |
| 3a | Oct 26, 2012 | Added BNDL.T1 to .T4 | Richard Chen |
| 3b | Apr 09, 2013 | Added AAFUNCTION.\* | Richard Chen |
| 3b.1 | Aug 30, 2013 | Incorporated JIRA resolutions | Richard Chen |
| 3b.2 | Sep 15, 2013 | Cleaned up and removed not applicable test procedures | Richard Chen, Emily Law |
| 4a | Dec. 05, 2013 | Incorporated PDS4ORR-RFA1’s recommendations by:   * folding the test plan into this (test procedures and test results) document. * listing the requirements tested in each test case and their pass/fail status * adding version numbers in list of software components tested * indicating for each JIRA issue: the software build under which it was discovered, its severity, the test case demonstrating, and its description. * adding “pass”, “fail”, or “skip” to the requirements traceability matrix   Added tests TPRT.1, SCMA.1 to test transport service and schema.  Removed redundant tests AATESTME.\*. | Richard Chen, Emily Law |
| 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 |
| 9a | Oct 30, 2018 | Removed SRCH.9 and merged it into POR.1 | Richard Chen |
| 9b | Jun 12, 2019 | Removed REG.10 | Richard Chen |
| 10a | Nov 11, 2019 | Removed AAFUNCTION.\*, CTLG.3, POR.\*, PRP.1, PRS.1, REG.\*, SRCH.\* Renamed AAFUNCTION.1 to REQ.4, GEN.\* to REQ.\*, HVT.[5-8] to HVT.[4-7], MOD.1 to LDD.1, PRG.1 to GEN.1, PRI.1 to VIEW.1, PRT.\* to XFRM.\*, PRV.\* to VAL.\*, SCMA.1 to REQ.1, SEC.1 to REQ.2 | Richard Chen |
| 10b | May 6, 2020 | Replaced Section 4’s anomaly tracking with RDD referencing. Restored deleted tests. Added DEEP.1. Renamed PRP.1 to VIEW.2, SRCH.8 to SRCH.4, PRS.1 to XFRM.4, REQ.1 to SCMA.1, LDD.1 to SCHMA.2, REQ.7 to REQ.1, POR.1 to SRCH.8, HVT.\* to HVTOLD.\*, REG.\* to REGOLD.\* | 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 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 PDS4 standards 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 10b is free of critical defects. This document describes the integration and test activities and contains test cases that demonstrate compliance to requirements. The test scenarios verify and validate the system components and data products in an integrated manner. A test traceability matrix in section 5 below traces these scenarios to the new PDS4 system design requirements, which in turn can be traced to high-level PDS requirements.

### Scope

Testing for build 10b is based upon the “Release Description – Build 10.1.0” (RDD), available at

<https://pds-engineering.jpl.nasa.gov/development/pds4/10.1.0/release/rdd-10.1.0.html>

The modules tested in build 10b:

* Harvest 3.2.2 (installed with pds-app-registry 0.1.0)
* LDDTool 11.3.0
* Registry-manager 3.2.2 (installed with pds-app-registry 0.1.0)
* Validate 1.24.0
* PDS-Deep-Archive 0.1.0

These modules have not changed for this build and are not being tested:  
- Catalog  
- Data Dictionary Search   
- Data Search  
- Data Set View  
- Design  
- Filter  
- Generate  
- Harvest 2.5.2 (EN version)  
- Harvest PDAP  
- JParser  
- Model/Model DM, Model/Model Ontology  
- PDS-View  
- Phone Book Search   
- Product Service  
- Registry 1.15.0 (EN version)  
- Report Manager  
- Search User Interface  
- Storage Service  
- Security  
- Tool Registry  
- Tracking Service  
- Transform  
- Transport

### 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 10b Integration testing is the execution and management of tests by the Engineering Node to ensure that the release of Build 10b 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.

[8] https://github.com/NASA-PDS/pds-deep-archive/issues?q=label%3Arequirement

## Executive Summary

**The testing documented herein substantiates that all tested tools and services meet Build 10b requirements as specified in their Software Requirements and Design documents.**

|  |  |  |  |
| --- | --- | --- | --- |
| **# of tests performed** | **# of tests passed** | **# of tests failed** | **# of high priority anomalies** |
| 25 | 23 | 2 | 0 |

[Section 3.2](#_Testing_of_New/Modified) tests all new or modified software modules. Its test sequences cover level 4 and 5 requirements for completeness. The sequences:

* [DEEP.1](#DEEP_1): Generate Deep Archive metadata, i.e. AIPs and SIPs
* [HVT.\*](#HVT_1): the Data Nodes’ harvest ingests labels into a DN registry
* [SCMA.\*](#SCMA_1): Schema 1.E.0.0 is validated externally, and LDDtool creates local data dictionaries.
* [VAL.\*](#VAL_1): Validate PDS4 labels and data.

[Section 3.3](#_Testing_of_New/Modified_1) repeats section 3.2’s tests, but run on a different platform, linux vs. macOS.

All tests passed except VAL.8 on both [macOS](#VAL_8aComments) and [linux](#VAL_8bComments), which failed on unlikely scenarios.

Section 3.4 tests unmodified software modules. These sequences were not run for build 10b: CTLG.\*, FEED.1, GEN.\*, HVTOLD.\*, REGOLD, REQ.\*, RPT.1, SRCH.\*, TPRT.\*, VIEW.1

[Section 4](#_RDD_Traceability) lists the status of all issues described in the [Build 10b RDD](https://pds-engineering.jpl.nasa.gov/development/pds4/10.1.0/release/rdd-10.1.0.html). Briefly,

78 issues were verified as resolved,

20 issues were untested (e.g. documentation), and

1 issue remains outstanding: harvest#4

[Section 5](#_Requirements_Traceability) shows the traceability of the test cases to the level 5 requirements (and level 4 if no level 5 requirement applies).

## Test Cases, Procedures and Results

The following section defines the test cases and lists their results. These cover all level 5 requirements for PDS. Testing for build 10b covers changed functionality since build 10a.

### Setup

The tests are organized upon the Release Description for build 10b:

<https://pds-engineering.jpl.nasa.gov/development/pds4/10.1.0/release/rdd-10.1.0.html>

The tests for build 10b in sections 3.2 and 3.3 require the installation of the following PDS4 software, all accessible from the RDD URL above.

* **Harvest**
* **Registry**
* **LDDtool**
* **Validate**
* **Pds-deep-archive**

Other needed software:

* **python3**, for pds-deep-archive
* an XML-friendly web **browser**, e.g. firefox
* **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.

From <https://pds-engineering.jpl.nasa.gov/content/build_10b_deliverables>, also download PDS4test.build10b.tgz, the test input files. In the tests below, replace with appropriate values:

|  |  |
| --- | --- |
| /Users/rchen/Desktop/test | directory where input files are extracted |
| /PDS4tools | installation directory of the PDS4 software |
| http://localhost:8983 | URL of the SOLR server |

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 rest of this document, the Test Case IDs are all caps followed by a dot and a number, while the IDs of the issues in the RDD are also all caps but followed by a # and a number.

Many test sequences in this document assume a local, uncontrolled registry. To reset it:

|  |  |
| --- | --- |
| Test Case ID | RESETREGISTRY |
| Description | This is not a test. This wipes the DN database and the search indices clean. |
| Test Steps | Assumes solr, pds-app-registry, harvest installed, with their executables in $PATH   1. registry-manager delete-registry 2. solr stop -all 3. rm -r /tmp/harvest/; rm -r /tmp/harvOut/   If the registry and even docker aren’t running or if uninstall desired:   1. solr start -cloud 2. registry-manager create-registry 3. http://localhost:8983/solr, "Collection" = "registry" # for verification |
| Test Results | Step 4:  \*\*\* [WARN] \*\*\* Your open file limit is currently 256.  It should be set to 65000 to avoid operational disruption.  If you no longer wish to see this warning, set SOLR\_ULIMIT\_CHECKS to false in your profile or solr.in.sh  \*\*\* [WARN] \*\*\* Your Max Processes Limit is currently 2837.  It should be set to 65000 to avoid operational disruption.  If you no longer wish to see this warning, set SOLR\_ULIMIT\_CHECKS to false in your profile or solr.in.sh  Waiting up to 180 seconds to see Solr running on port 8983 [\]  Started Solr server on port 8983 (pid=27904). Happy searching!  Step 5:  Creating registry collection  ZooKeeper host: localhost:9983  Configuration directory: /PDS4tools/registry-manager/solr/collections/registry  Shards: 1  Replicas: 1  Uploading configuration...  Creating collection...  Done  Step 6: |

### Testing of New/Modified Modules on macOS

These tests ensure complete verification and validation of Build 10b level 5 requirements of the new or modified modules. In each test case, # indicates a comment, though

|  |  |
| --- | --- |
| Test Case ID | DEEP.1 |
| Description | Generate an Archive Information Package (AIP) and a Submission Information Package (SIP)  For 10b, DEEP.1 tests AIP#9, AIP#25, DEE#1, DEE#2, DEE#3, DEE#18, DEE#22. Ideally, one more test step would be to send the AIP and SIP to NSSDC (DEE#10), but that would require much effort for a module both straightforward and secondary. |
| Requirements | From https://github.com/NASA-PDS/pds-deep-archive/issues?q=label%3Arequirement  PASS The tool shall be capable of generating a valid Archive Information Package transfer manifest ...  PASS The tool shall be capable of generating a valid AIP and SIP products and PDS4 XML label ...  NOTYET The tool shall be capable of generating product manifests from an online Registry Service ...  PASS The tool shall be capable of generating product manifests by crawling a file system ...  PASS The tool shall generate a product manifest based upon the specification of a bundle as input.  PASS The tool shall include products in the manifests based upon the relationships described in the PDS4 bundle ...  NOTYET The tool shall be capable of accepting a checksum manifest as input to use in place of Registry ...  PASS The tool shall generate a PDS4 label for the SIP and AIP using at least PDS4 Information Model v1.13.0.0 ...  PASS The tool shall require AIP and SIP products contain only products with valid logical identifiers ...  PASS The Submission Information Package manifest shall be a tab-delimited table with ... |
| Success Criteria | Tool creates a viable AIP and SIP reflecting the traversed directory |
| Test Steps | If user’s shell is bash not csh, remove “.csh” from step 2   1. cd /Users/rchen/Desktop/test/testDeep 2. source $HOME/.virtualenvs/pds-deep-archive/bin/activate.csh 3. pds-deep-archive -s PDS\_RNG -b https://rings.anything/xxxx uranus\_occ\_support/bundle.xml 4. validate -t uranus\_occ\_support\_v1.0\_aip\_v1.0.xml 5. validate -t uranus\_occ\_support\_v1.0\_sip\_v1.0.xml   You could check that the generated .tab files list the files in the directory. I’m too lazy.   1. find uranus\_occ\_support -type f | wc 2. wc \*tab 3. grep records \*xml 4. rm uranus\_occ\_support\_\* |
| Test Results | Step 2: prompt changes to  [pds-deep-archive] /Users/rchen/Desktop/test/testDeep>  Step 3:  INFO 👟 PDS Deep Archive, version 0.1.0  INFO 🏃‍♀️ Starting AIP generation for uranus\_occ\_support/bundle.xml  INFO 🎉 Success! AIP done, files generated:  INFO • Checksum manifest: uranus\_occ\_support\_v1.0\_checksum\_manifest\_v1.0.tab  INFO • Transfer manifest: uranus\_occ\_support\_v1.0\_transfer\_manifest\_v1.0.tab  INFO • XML label for them both: uranus\_occ\_support\_v1.0\_aip\_v1.0.xml  WARNING 🤚 Notice! --include-all-collections isn't yet supported; will assume it's enabled for now  INFO 🏃‍♀️ Starting SIP generation for uranus\_occ\_support/bundle.xml  INFO 🎉 Success! From /Users/rchen/Desktop/test/testDeep/uranus\_occ\_support/bundle.xml, generated these output files:  INFO • SIP Manifest: uranus\_occ\_support\_v1.0\_sip\_v1.0.tab  INFO • XML label for the SIP: uranus\_occ\_support\_v1.0\_sip\_v1.0.xml  INFO 👋 That's it! Thanks for making an AIP and SIP with us today. Bye!  Step 4:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-05-04T22:49:11Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testDeep/uranus\_occ\_support\_v1.0\_aip\_v1.0.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testDeep/uranus\_occ\_support\_v1.0\_aip\_v1.0.xml  1 product validation(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  1 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  Completed execution in 3986 ms  Step 5: standard good message, like step 4  Step 6: This and the next two steps show 28 files should be in the manifest  28 28 1798  Step 7:  28 56 2218 uranus\_occ\_support\_v1.0\_checksum\_manifest\_v1.0.tab  28 112 5630 uranus\_occ\_support\_v1.0\_sip\_v1.0.tab  28 56 14336 uranus\_occ\_support\_v1.0\_transfer\_manifest\_v1.0.tab  84 224 22184 total  Step 8:  uranus\_occ\_support\_v1.0\_aip\_v1.0.xml: <records>28</records>  uranus\_occ\_support\_v1.0\_aip\_v1.0.xml: <records>28</records>  uranus\_occ\_support\_v1.0\_aip\_v1.0.xml: <records>28</records>  uranus\_occ\_support\_v1.0\_sip\_v1.0.xml: <records>28</records>  uranus\_occ\_support\_v1.0\_sip\_v1.0.xml: <records>28</records> |
| Comments | Results met success criteria. |
| Date of Testing | 2020.05.04 |
| Test Personnel | Richard Chen |

|  |  |
| --- | --- |
| Test Case ID | HVT.1 |
| Description | Harvest for a Data Node, i.e. convert metadata from labels to solr documents, then load the solr documents into the registry, which for now is viewed throught the SOLR web interface but will later be searchable.  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.3: The tool shall determine candidate products for registration through a combination of the following…  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.  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.3: The system shall register products of a data delivery into an instance of the registry.  PASS L5.REG.4: The service shall accept metadata for a registered artifact in a defined format.  PASS L5.REG.9: The service shall allow updates to registered artifacts.  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 | 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 | 1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd /Users/rchen/Desktop/test 3. harvest -c bundle\_geo\_ra.cfg -o /tmp/harvOut 4. In browser, <http://localhost:8983/solr/#/registry/collection-overview>, hit “Query”, then button “Execute Query” 5. registry-manager load-data -filePath /tmp/harvOut 6. Repeat step 4   Show update of registered artifacts   1. In same browser, in box q, replace \*:\* with lid:urn\:nasa\:pds\:phx\_ra Hit button “Execute Query” 2. gunzip bundle\_geo\_ra/bundle\_weird.xml.gz 3. diff bundle\_geo\_ra/bundle.xml bundle\_geo\_ra/bundle\_weird.xml 4. gzip bundle\_geo\_ra/bundle.xml 5. Repeat step 3 6. Repeat step 5 7. Repeat step 7. Note new title matches diff’s result 8. gzip bundle\_geo\_ra/bundle\_weird.xml; gunzip bundle\_geo\_ra/bundle.xml.gz   Show deletion of registered artifacts   1. registry-manager delete-data -lid urn:nasa:pds:phx\_ra 2. Repeat step 7 3. registry-manager delete-data -all 4. Repeat step 4 |
| Test Results | Step 3:  2020-04-23 23:24:37 [INFO] Logging to /tmp/harvest/harvest.log  2020-04-23 23:24:37 [INFO] Starting product crawler...  2020-04-23 23:24:37 [INFO] Reading configuration from bundle\_geo\_ra.cfg  2020-04-23 23:24:37 [INFO] Will write Solr docs to /tmp/harvOut  2020-04-23 23:24:37 [INFO] Processing file /Users/rchen/Desktop/test/bundle\_geo\_ra/context/spacecraft.phx\_1.1.xml  [snip…]  2020-04-23 23:24:38 [INFO] Processing file /Users/rchen/Desktop/test/bundle\_geo\_ra/xml\_schema/collection.xml  2020-04-23 23:24:38 [INFO] Summary:  2020-04-23 23:24:38 [INFO] Skipped files: 0  2020-04-23 23:24:38 [INFO] Processed files: 173  2020-04-23 23:24:38 [INFO] File counts by type:  2020-04-23 23:24:38 [INFO] Product\_Browse: 38  2020-04-23 23:24:38 [INFO] Product\_Bundle: 1  2020-04-23 23:24:38 [INFO] Product\_Collection: 5  2020-04-23 23:24:38 [INFO] Product\_Context: 4  2020-04-23 23:24:38 [INFO] Product\_Document: 4  2020-04-23 23:24:38 [INFO] Product\_Observational: 120  2020-04-23 23:24:38 [INFO] Product\_XML\_Schema: 1  2020-04-23 23:24:38 [INFO] Package ID: 6db2dfb9-8f38-4933-b182-f136f06100b1  Step 4: little output. Note "response":{"numFound":0  Step 5:  Loading file: /Users/rchen/tmp/solr-docs.xml  Done  Step 6: Note "response":{"numFound":173    Step 7:  Step 9:  12c12  < <title>Phoenix Robotic Arm Data Set</title>  ---  > <title>Phoenix Robotic Arm Data Set WEIRD</title>  Step 11: Output just like Step 3’s except a different last line  2020-04-23 23:29:33 [INFO] Package ID: 50ec1963-fc98-477d-8afe-ec9170e00e20  Step 13: Note the “WEIRD” in title    Step 15:  Deleted 1 document(s)  Step 16:  Step 17:  Deleted 172 document(s)  Step 18: little output. Note "response":{"numFound":0 |
| Comments | Results met success criteria |
| Date of Testing | 2020.04.23 |
| Test Personnel | Richard Chen |

|  |  |
| --- | --- |
| Test Case ID | HVT.2 |
| Description | Test various capabilities described in release 10b.  HVT.1, by functioning correctly, tested HVT#11, HVT#13, HVT#15, HVT#16, HVT#20, PAR#1, PAR#2, REG#18, REG#22, REG#23, REG#25, REG#27, REG#28, REG#31. Tested here: HVT#22, REG#27, REG#37, REG#42 |
| Requirements | PASS L5.REG.5: The service shall validate metadata for a registered artifact. |
| Success Criteria |  |
| Test Steps | 1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd /Users/rchen/Desktop/test 3. harvest -c testHvt/hvt22a.cfg -o /tmp/harvOut #HVT#22 4. registry-manager load-data -filePath /tmp/harvOut 5. harvest -c testHvt/hvt22b.cfg -o /tmp/harvOut 6. registry-manager load-data -filePath /tmp/harvOut 7. registry-manager load-data -help #part 2 of REG#27 8. run HVT.1 on a Windows machine #REG#37 and REG#42 |
| Test Results | Step 3:  2020-04-19 20:42:21 [INFO] Logging to /tmp/harvest/harvest.log  2020-04-19 20:42:21 [INFO] Starting product crawler...  2020-04-19 20:42:21 [INFO] Reading configuration from testHvt/hvt22a.cfg  2020-04-19 20:42:21 [INFO] Will write Solr docs to /tmp/harvOut  2020-04-19 20:42:21 [INFO] Processing file /Users/rchen/Desktop/test/testHvt/hvt22a/hvt22.xml  2020-04-19 20:42:21 [INFO] Processing file /Users/rchen/Desktop/test/testHvt/hvt22a/hvt22.bad.xml  2020-04-19 20:42:21 [INFO] Summary:  2020-04-19 20:42:21 [INFO] Skipped files: 0  2020-04-19 20:42:21 [INFO] Processed files: 2  2020-04-19 20:42:21 [INFO] File counts by type:  2020-04-19 20:42:21 [INFO] Product\_Ancillary: 2  2020-04-19 20:42:21 [INFO] Package ID: 7c508d46-100b-4313-9e5b-7b9585e32fe0  Step 4: should fail because the bad label has no VID  Loading file: /tmp/harvOut/solr-docs.xml  ERROR: Error from server at http://localhost:8983/solr: ERROR: [doc=urn:nasa:pds:uranus\_occ\_support:data:badvid::] Error adding field 'vid'='' msg=empty String  Step 5:  2020-04-19 20:44:10 [INFO] Logging to /tmp/harvest/harvest.log  2020-04-19 20:44:10 [INFO] Starting product crawler...  2020-04-19 20:44:10 [INFO] Reading configuration from testHvt/hvt22b.cfg  2020-04-19 20:44:10 [INFO] Will write Solr docs to /tmp/harvOut  2020-04-19 20:44:10 [INFO] Processing file /Users/rchen/Desktop/test/testHvt/hvt22b/hvt22.xml  2020-04-19 20:44:10 [INFO] Processing file /Users/rchen/Desktop/test/testHvt/hvt22b/hvt22.bad.xml  2020-04-19 20:44:10 [INFO] Summary:  2020-04-19 20:44:10 [INFO] Skipped files: 0  2020-04-19 20:44:10 [INFO] Processed files: 2  2020-04-19 20:44:10 [INFO] File counts by type:  2020-04-19 20:44:10 [INFO] Product\_Ancillary: 2  2020-04-19 20:44:10 [INFO] Package ID: 2c045056-2918-4a6a-bfc9-ee63f791b845  Step 6: should fail because the bad label has no LID.  Loading file: /tmp/harvOut/solr-docs.xml  Done  Step 7:  Load data into registry collection  Options:  -filePath <path> An XML file or a directory to load. This is a required parameter.  -solrUrl <url> Solr URL. Default is http://localhost:8983/solr  -zkHost <host> ZooKeeper connection string, <host:port>[,<host:port>][/path]  For example, zk1:2181,zk2:2181,zk3:2181/solr  Step 8: no PC available, so ran this on linux machine pds-gamma. The results of HVT.1’s steps 6, 13, and 15. |
| Comments | Results met success criteria. |
| Date of Testing | 2020.04.19 |
| Test Personnel | Richard Chen |

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| Test Case ID | SCMA.1 |
| Description | Verify changes made to the IM schema and schematron. |
| 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 | The documentation of the testing of the information model is roughly the size of this document, so that documentation has been placed in its own document, testScma.docx. For build 10b, testScma.docx shows tests of:   * IM#97, i.e. CCB-204 * IM#99, i.e. CCB-268 * IM#101, i.e. CCB-204 * IM#103, i.e. CCB-138 * IM#113, i.e. CCB-204 * IM#122, i.e. CCB-204 * IM#130, i.e. CCB-256 * IM#133, i.e. CCB-271 * IM#135, i.e. CCB-220 * IM#137, i.e. CCB-274 * IM#139, i.e. CCB-278 * IM#142, i.e. CCB-204 * IM#144, i.e. CCB-274 * IM#146, i.e. CCB-204 * IM#148, i.e. CCB-272 * IM#152, i.e. CCB-279 |
| Comments | Results met success criteria. |
| Date of Testing | 2020.04.07 |
| Test Personnel | Richard Chen |

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| Test Case ID | SCMA.2 |
| Description | Use LDDTool to create local data dictionaries |
| Requirements | PASS 1.3.3: PDS will provide criteria for validating archival products |
| Success Criteria | Validate uses the created local data dictionary to validate a label. |
| Test Steps | 1. cd /Users/rchen/Desktop/test/testLDD 2. validate -x ../PDS4\_PDS\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch -t ccb235a.xml 3. validate -x ../PDS4\_PDS\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch -t ccb235lddinput.xml 4. lddtool -pl ccb235lddinput.xml 5. validate -x ../PDS4\_PDS\_1E00.xsd PDS4\_INSIGHT\_1E00\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch PDS4\_INSIGHT\_1E00\_1E00.sch -t ccb235a.xml 6. rm PDS4\_INSIGHT\_1E00\_1E00.\* |
| Test Results | Step 2:  PDS Validate Tool Report  Configuration:  Version 1.22.1  Date 2020-04-09T06:00:15Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testLDD/ccb235a.xml]  User Specified Schemas [file:/Users/rchen/Desktop/test/PDS4\_PDS\_1E00.xsd]  User Specified Schematrons [file:/Users/rchen/Desktop/test/PDS4\_PDS\_1E00.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testLDD/ccb235a.xml  ERROR [error.label.schema] line 60, 46: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'insight:Observation\_Information'.  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schema  End of Report  Completed execution in 3262 ms  Step 3: Standard good message  Step 4:  >>info - LDDTOOL Version: 11.2.2  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Wed Apr 08 23:04:10 PDT 2020  >>info - JAVAHOME: /Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home  >>info - PARENT\_DIR: /PDS4tools/lddtool  >>info - SCRIPT\_DIR: /PDS4tools/lddtool/bin  >>info - LIB\_DIR: /PDS4tools/lddtool/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  WARNING Init: - Config.Properties Namespace Id Not Found:insight  INFO Init: - Config.Properties Namespace Id Using:pds  INFO Init: - LDD Dictionary\_Type Found:Mission  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:insight  >>info - LDDTOOL Exit  >>info - Exit  Step 5: Standard good message |
| Comments | Results met success criteria. |
| Date of Testing | 2020.04.08 |
| Test Personnel | Richard Chen |

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| Test Case ID | SCMA.3 |
| Description | Test various capabilities described in release 10b.  RDD 10b issues left to test after SCMA.1: IM#74, IM#77, IM#79, IM#81, IM#93, IM#105, IM#109, IM#111, IM#125, IM#127, IM#154, IM#180 |
| Requirements | PASS 1.3.3: PDS will provide criteria for validating archival products |
| Success Criteria | Verify proper handling of build 10b issues not covered by SCMA.1 |
| Test Steps | All executions of lddtool below verify IM#77, IM#79, IM#81   1. cd /Users/rchen/Desktop/test/testLDD 2. lddtool –version #IM#74 3. lddtool -plD im93atm.xml im93naif.xml #IM#93   You could view the output DocBook (export/DD/PDS4\_PDS\_DD\_1E00.xml); instead   1. grep XX im93\* export/DD/PDS4\_PDS\_DD\_1E00.xml # show LDD in DocBook 2. cp im93naif.xml x.xml; lddtool -pl x.xml; rm x.xml #IM#111 3. lddtool -pl im125lddinput.xml #IM#125; nillable inside class works 4. validate -x ../PDS4\_PDS\_1E00.xsd PDS4\_MAVEN\_1E00\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch PDS4\_MAVEN\_1E00\_1E00.sch -t im125.xml 5. lddtool -plM im125lddinput #IM#154, fail nicely if -M 6. lddtool -pl im180lddinput.xml #IM#180, max=\* -> maxOccurs="unbounded” 7. grep "<xs:choice" PDS4\_GEOMETRY\_1E00\_1E00.xsd 8. validate -x ../PDS4\_PDS\_1E00.xsd PDS4\_GEOMETRY\_1E00\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch -t im180.xml 9. rm PDS4\_\*\_1E00\_1E00.\* |
| Test Results | Step 2: show software version & IM version  LDDTool Version: 11.2.2  Built with IM Version: 1.14.0.0  Build Date: 2020-04-06 16:43:45  Step 3:  >>info - LDDTOOL Version: 11.2.2  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Wed Apr 08 23:09:51 PDT 2020  >>info - JAVAHOME: /Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home  >>info - PARENT\_DIR: /PDS4tools/lddtool  >>info - SCRIPT\_DIR: /PDS4tools/lddtool/bin  >>info - LIB\_DIR: /PDS4tools/lddtool/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  INFO Init: - Config.Properties Namespace Id Found:atm  INFO Init: - Config.Properties Namespace Id Using:atm  INFO Init: - LDD Dictionary\_Type Found:Mission  INFO Init: - Config.Properties Namespace Id Found:naif  INFO Init: - Config.Properties Namespace Id Using:naif  INFO Init: - LDD Dictionary\_Type Found:Mission  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:naif  >>info - LDDTOOL Exit  >>info - Exit  Step 4:  im93atm.xml: <name>XXATMType\_List</name>  im93atm.xml: <local\_identifier>XXATMType\_List</local\_identifier>  im93naif.xml: <name>XXNAIFObservation\_Information</name>  im93naif.xml: <local\_identifier>XXNAIFObservation\_Information</local\_identifier>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title><anchor xml:id="N1927552474"/>XXATMType\_List</title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry namest="c1" nameend="c3" align="left"><emphasis>Name: </emphasis>XXATMType\_List</entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry namest="c1" nameend="c4" align="left"><emphasis>Class Hierarchy: </emphasis><link linkend="N1927552474">XXATMType\_&#x200B;List</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>type in <link linkend="N1927552474">XXATMType\_&#x200B;List</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N1927552474">XXATMType\_&#x200B;List</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>type\_list\_identifier in <link linkend="N1927552474">XXATMType\_&#x200B;List</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N1927552474">XXATMType\_&#x200B;List</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title><anchor xml:id="N-1198652248"/>XXNAIFObservation\_Information</title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry namest="c1" nameend="c3" align="left"><emphasis>Name: </emphasis>XXNAIFObservation\_Information</entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry namest="c1" nameend="c4" align="left"><emphasis>Class Hierarchy: </emphasis><link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>bibcode in <link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>mission\_phase\_name\_type in <link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>release\_number in <link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></entry>  Step 5:  >>info - LDDTOOL Version: 11.2.2  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Wed Apr 08 23:28:59 PDT 2020  >>info - JAVAHOME: /Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home  >>info - PARENT\_DIR: /PDS4tools/lddtool  >>info - SCRIPT\_DIR: /PDS4tools/lddtool/bin  >>info - LIB\_DIR: /PDS4tools/lddtool/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  INFO Init: - Config.Properties Namespace Id Found:naif  INFO Init: - Config.Properties Namespace Id Using:naif  INFO Init: - LDD Dictionary\_Type Found:Mission  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:naif  >>info - LDDTOOL Exit  >>info - Exit  Step 6:  >>info - LDDTOOL Version: 11.2.2  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Thu Apr 09 10:01:19 PDT 2020  >>info - JAVAHOME: /Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home  >>info - PARENT\_DIR: /PDS4tools/lddtool  >>info - SCRIPT\_DIR: /PDS4tools/lddtool/bin  >>info - LIB\_DIR: /PDS4tools/lddtool/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  WARNING Init: - Config.Properties Namespace Id Not Found:maven  INFO Init: - Config.Properties Namespace Id Using:pds  INFO Init: - LDD Dictionary\_Type Found:Mission  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:maven  >>info - LDDTOOL Exit  >>info - Exit  Step 7: Standard good message  Step 8:  >>ERROR: This flag has been deprecated as of PDS4 IM Version 1.14.0.0. See the LDDTool User's Manual for more information on how to provide this information.  Step 9:  >>info - LDDTOOL Version: 11.3.0-SNAPSHOT  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Sun May 10 22:12:44 PDT 2020  >>info - JAVAHOME: /Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home  >>info - PARENT\_DIR: /PDS4tools/lddtool  >>info - SCRIPT\_DIR: /PDS4tools/lddtool/bin  >>info - LIB\_DIR: /PDS4tools/lddtool/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  WARNING Init: - Config.Properties Namespace Id Not Found:geometry  INFO Init: - Config.Properties Namespace Id Using:pds  INFO Init: - LDD Dictionary\_Type Found:Discipline  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:geometry  >>info - LDDTOOL Exit  >>info - Exit  Step 10: for a while, lddtool returned maxOccurs="\*">, which is bad  <xs:choice minOccurs="1" maxOccurs="unbounded">  Step 11: Standard good message |
| Comments | Results met success criteria. |
| Date of Testing | 2020.04.09 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.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 /Users/rchen/Desktop/test 2. validate -x bundle\_psi/xml\_schema/\*xsd -S bundle\_psi/xml\_schema/\*sch -R pds4.bundle -t bundle\_psi   Some files need local data dictionary img.   1. validate -x bundle\_psi/xml\_schema/\*xsd bundle\_psi2/\*xsd -S bundle\_psi/xml\_schema/\*sch bundle\_psi2/\*sch -R pds4.bundle -t bundle\_psi |
| Test Results | Step 2:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-25T17:28:31Z  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]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/bundle\_ast\_spectra\_reddy\_neos\_marscrossers.xml  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/collection\_ast\_spectra\_reddy\_neos\_marscrossers\_document.xml  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/allspectra.xml  3 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/AA\_Document\_Index.xml  4 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/bundle\_description.xml  5 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/ref.xml  6 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xml  7 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/xml\_schema/collection.xml  8 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/collection\_ast\_spectra\_reddy\_neos\_marscrossers\_data.xml  9 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/science\_index.xml  10 product validation(s) completed  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/data/2008/39572\_1993dq1.xml  ERROR [error.label.schema] 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'.  11 product validation(s) completed  .[snip…]  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/data/2004/87684\_2000sy2.xml  ERROR [error.label.schema] 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'.  37 product validation(s) completed  PDS4 Bundle Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/collection\_ast\_spectra\_reddy\_neos\_marscrossers\_document.xml  1 integrity check(s) completed  [snip…]  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2006/85709\_1998sg36.xml  37 integrity check(s) completed  Summary:  27 error(s)  0 warning(s)  Product Validation Summary:  10 product(s) passed  27 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  37 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  27 error.label.schema  End of Report  Completed execution in 6139 ms  Step 3: should be no errors.  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-25T17:41:24Z  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]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/bundle\_ast\_spectra\_reddy\_neos\_marscrossers.xml  1 product validation(s) completed  [snip…]  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2006/85709\_1998sg36.xml  37 integrity check(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  37 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  37 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  Completed execution in 5957 ms |
| Comments | Results met success criteria. |
| Date of Testing | 2020.03.28 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.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/document/allspectra.pdf . 2. validate -t bundle\_psi/document 3. mv allspectra.pdf bundle\_psi/document/ 4. validate -R pds4.collection -t bundle\_psi/document   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 3. validate -t testPrep/product\_document/Product\_Doc\_good.xml |
| Test Results | Step 2: the referenced file was removed in step 1  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-25T18:23:41Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundle\_psi/document/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/collection\_ast\_spectra\_reddy\_neos\_marscrossers\_document.xml  1 product validation(s) completed  FAIL: file:/Users/rchen/Desktop/test/bundle\_psi/document/allspectra.xml  ERROR [error.label.missing\_file] URI reference does not exist: file:/Users/rchen/Desktop/test/bundle\_psi/document/allspectra.pdf  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/AA\_Document\_Index.xml  3 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/bundle\_description.xml  4 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/document/ref.xml  5 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  4 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.missing\_file  End of Report  Completed execution in 4070 ms  Step 4: Standard good message; the referenced file was restored in step 3  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> /Users/rchen/Desktop/test/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 1.22.3  Date 2020-04-25T18:24:25Z  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]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_bad.xml  ERROR [error.label.missing\_file] URI reference does not exist: file:/replaceWithFullPath/image002.gif  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.missing\_file  End of Report  Completed execution in 3525 ms  Step 7: Standard good message. Non-existent path has been replaced by a real path |
| Comments | Results met success criteria |
| Date of Testing | 2020.04.25 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.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.  Also test validate-bundle |
| 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/. Find the same bugs via validate-bundle |
| Test Steps | 1. cd /Users/rchen/Desktop/test/ 2. validate -R pds4.bundle -t bundle\_geo\_ra #VAL#137 3. validate -R pds4.bundle -t bundleLID #VAL#139 VAL#146 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 (fine since members are secondary) and an incorrect count of records (not fine) 6. data\_derived/sol148d.xml’s LID does not extend the collection’s LID 7. data\_derived/sol149b.xml has another product’s LIDVID 8. data\_test/scraping/pit\_test\_scraping\_pic[12].xml have the same LID but different VIDs, which should not be flagged. 9. data\_test/scraping/pit\_test\_scraping.xml’s LID changed to “<xxx>.xml” 10. data\_test/scraping/pit\_test\_scraping.xml’s <title> added various spaces 11. the document collection’s LID does not have the bundle’s LID as its basis.   This also tests correctly counting errors, VAL#173  Re-run step 3 using validate-bundle, the parallel version. Get the same results.   1. validate-bundle -n 1 -t /Users/rchen/Desktop/test/bundleLID/bundle\_1.xml 2. rm -r validate\_20\* |
| Test Results | Step 2: val137: pit\_test\_icy\_soil\_dig1.csv has blank values, which is now ok. The 174th file, bundle\_weird.xml.gz, is used by a different test.  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-25T18:49:58Z  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]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/bundle.xml  1 product validation(s) completed  [snip...]  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/xml\_schema/collection.xml  173 product validation(s) completed  PDS4 Bundle Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/context/context\_collection\_1.xml  1 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/data\_derived/data\_derived\_collection\_1.xml  2 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/data\_test/data\_test\_collection\_1.xml  3 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/document/document\_collection\_1.xml  4 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/xml\_schema/collection.xml  5 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/bundle\_weird.xml.gz  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  6 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/bundle.xml  7 integrity check(s) completed  [snip...]  PASS: file:/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml  174 integrity check(s) completed  Summary:  0 error(s)  1 warning(s)  Product Validation Summary:  173 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  174 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.file.not\_referenced\_in\_label  End of Report  Completed execution in 27143 ms  Step 3: good: flagging duplicate u:n:p:phx\_ra:data\_derived:sol149a::1.0 and sol148d.xml’s bad LID, not flagging pit\_test\_scraping\_pic[23].xml.  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-26T01:13:01Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/bundleLID/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/bundleLID/bundle\_1.xml  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/phx.ra\_1.0.xml  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/planet.mars\_1.2.xml  3 product validation(s) completed  FAIL: file:/Users/rchen/Desktop/test/bundleLID/context/context\_collection\_1.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/bundleLID/context/context\_collection\_inventory\_1.tab  ERROR [error.table.records\_mismatch] table 1: Number of records read is not equal to the defined number of records in the label (expected 4, got 3).  End Content Validation: file:/Users/rchen/Desktop/test/bundleLID/context/context\_collection\_inventory\_1.tab  4 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/mission.phoenix\_1.1.xml  5 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol149b.xml  6 product validation(s) completed  FAIL: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol149a.xml  ERROR [error.label.duplicate\_identifier] Identifier urn:nasa:pds:phx\_ra:data\_derived:sol149a::1.0 already defined (old location: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol149b.xml)  7 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol148d.xml  8 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/data\_derived\_collection\_1.xml  9 product validation(s) completed  FAIL: file:/Users/rchen/Desktop/test/bundleLID/data\_test/data\_test\_collection\_1.xml  ERROR [error.label.duplicate\_identifier] 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)  10 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping.xml  11 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml  12 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml  13 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig2\_pic13.xml  14 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust.xml  15 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig1\_pic1.xml  16 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/document/collection\_1.xml  17 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/document/ra\_dataset.xml  18 product validation(s) completed  PDS4 Bundle Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/bundleLID/context/context\_collection\_1.xml  ERROR [error.table.records\_mismatch] Number of records read is not equal to the defined number of records in the collection (expected 4, got 3).  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:phx\_ra:context\_typo::1.0' is not a member of any collection within the given target  1 integrity check(s) completed  FAIL: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/data\_derived\_collection\_1.xml  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_derived777:sol148d does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  WARNING [warning.integrity.member\_not\_found] The member 'urn:nasa:pds:phx\_ra:data\_derived:sol149b::1.0' could not be found in any product within the given target.  2 integrity check(s) completed  FAIL: file:/Users/rchen/Desktop/test/bundleLID/data\_test/data\_test\_collection\_1.xml  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_duricrust does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_duricrust\_dig1\_pic1 does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_duricrust\_dig2\_pic13 does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test.xml does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1 does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1 does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  3 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/document/collection\_1.xml  4 integrity check(s) completed  FAIL: file:/Users/rchen/Desktop/test/bundleLID/bundle\_1.xml  WARNING [warning.integrity.member\_not\_found] The member 'urn:nasa:pds:phx\_ra:data\_test' could not be found in any product within the given target.  WARNING [warning.integrity.member\_not\_found] The member 'urn:nasa:pds:phx\_ra:context' could not be found in any product within the given target.  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra\_605typo:document does not begin with required parent LID urn:nasa:pds:phx\_ra  5 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol148d.xml  6 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_derived/sol149b.xml  7 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping.xml  8 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/document/ra\_dataset.xml  9 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust.xml  10 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig1\_pic1.xml  11 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/phx.ra\_1.0.xml  12 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/mission.phoenix\_1.1.xml  13 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig2\_pic13.xml  14 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/context/planet.mars\_1.2.xml  15 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml  16 integrity check(s) completed  PASS: file:/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml  17 integrity check(s) completed  Summary:  12 error(s)  4 warning(s)  Product Validation Summary:  15 product(s) passed  3 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  13 check(s) passed  4 check(s) failed  0 check(s) skipped  Message Types:  8 error.integrity.missing\_parent\_prefix  2 error.table.records\_mismatch  2 error.label.duplicate\_identifier  3 warning.integrity.member\_not\_found  1 warning.integrity.unreferenced\_member  End of Report  Completed execution in 10182 ms  Step 4: validate-bundle has a lot of output. Check summary’s errors and warnings  [snipj…]  >>>>>>>>>>>>>>> OVERALL SUMMARY:  Summary:  12 error(s)  4 warnings(s)  End of Report  <<<<<<<<<<<<<<<  Validation complete.  \* See /Users/rchen/Desktop/test/validate\_20200508\_103356/validate\_summary.log for a summary of results.  \* See /Users/rchen/Desktop/test/validate\_20200508\_103356 for individual Validate Tool execution reports. |
| Comments | Results met success criteria. |
| Date of Testing | 2020.05.08 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.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 /Users/rchen/Desktop/test/testPrep/product\_document 2. validate -t Product\_Doc\_part1.xml |
| Test Results | Step 2: No longer allowed  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-26T01:18:05Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_part1.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_part1.xml  FATAL\_ERROR [error.label.schema] Error occurred while attempting to find schemas using the XPath '//\*/@xsi:schemaLocation': org.xml.sax.SAXParseException; systemId: file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_part1.xml; lineNumber: 113; columnNumber: 1; XML document structures must start and end within the same entity.  ERROR [error.label.schematron] Error occurred while attempting to find schematrons using the XPath '/processing-instruction('xml-model')': org.xml.sax.SAXParseException; systemId: file:/Users/rchen/Desktop/test/testPrep/product\_document/Product\_Doc\_part1.xml; lineNumber: 113; columnNumber: 1; XML document structures must start and end within the same entity.  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  1 error.label.schema  End of Report  Completed execution in 1537 ms |
| Comments | Results met success criteria? |
| Date of Testing | 2020.04.25 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.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\_1E00.xsd  However, validate, when validating a label file, does complain when the schema is bad   1. validate -x PDS4\_PDS\_1E00.xsd -S PDS4\_PDS\_1E00.sch -t testLDD/im93atm.xml 2. diff -w PDS4\_PDS\_1E00.xsd testPrep/PDS4\_PDS\_1E00.bad.xsd 3. validate -x testPrep/PDS4\_PDS\_1E00.bad.xsd -S PDS4\_PDS\_1E00.sch -t testLDD/im93atm.xml   Give validate a non-existent schema   1. validate -x xxx.xsd -S PDS4\_PDS\_1D00.sch -t testLDD/im93atm.xml |
| Test Results | Step 1: standard good message  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  java.lang.Exception: Error while getting targetNamespace of schema 'file:/Users/rchen/Desktop/test/testPrep/PDS4\_PDS\_1E00.bad.xsd': org.xml.sax.SAXParseException; systemId: file:/Users/rchen/Desktop/test/testPrep/PDS4\_PDS\_1E00.bad.xsd; lineNumber: 8416; columnNumber: 3; The element type "xs:annotation" must be terminated by the matching end-tag "</xs:annotation>".  Completed execution in 924 ms  Step 4: validate throws a normal java exception, plus eventually:  FAIL: file:/Users/rchen/Desktop/test/testLDD/im93atm.xml  ERROR [error.validation.internal\_error] Error executing validationTask: java.lang.NullPointerException  Begin Schema: file:/Users/rchen/Desktop/test/xxx.xsd  FATAL\_ERROR [error.label.unresolvable\_resource] /Users/rchen/Desktop/test/xxx.xsd (No such file or directory)  End Schema: file:/Users/rchen/Desktop/test/xxx.xsd  1 product validation(s) completed |
| Comments | Results met success criteria |
| Date of Testing | 2020.04.25 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.6 |
| Description | Test various capabilities described in release documents: |
| Requirements | PASS L5.PRP.VA.\*: |
| Success Criteria | Verify proper handling of identified issues |
| Test Steps | 1. cd /Users/rchen/Desktop/test/testPrep   Validate multiple files via a checksum manifest   1. validate -t cara\_data -M cara\_data/checksum.tab 2. cp cara\_data/checksum.tab /tmp 3. validate -t cara\_data -M /tmp/checksum.tab 4. validate -t vld\_415 -R pds4.bundle 5. validate -R pds4.collection -t orex 6. validate -R pds4.bundle -t orex/data\_hkl0   -D disable data check   1. validate -t twins\_raw\_0015\_01.xml 2. validate -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 -t 7f90.xml 3. validate -t 7f90b.xml   Validate large bundle.   1. date ; validate -x PDS4\_PDS\_1800.xsd -S PDS4\_PDS\_1800.sch -t ../contextPDS3 > validate.big.out ; date   Validate a remote bundle   1. validate -t https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/   Catalog   1. validate -t catalogValidate/ele\_mom\_tblChar.xml -C catalogValidate/catalog-dph.xml   Allow large integers and readme\_\*.txt   1. validate -t maven-rose-raw -R pds4.bundle   Build 9a:   1. tail -1 mlascirdr.tab; validate -t mlascirdr.xml 2. ls -o insightcameras/data/sol/0003/mipl/edr/icc | head -2; ls -o insightcameras | head -2 ; validate -R pds4.bundle -t insightcameras 3. validate -t ccb213.xml #test legal and illegal ASCII\_Real values 4. validate -t ccb226.xml #test microseconds 5. Download <http://pds-geosciences.wustl.edu/messenger/urn-nasa-pds-izenberg_pdart14_meap/data_imagecube/virs/H15>/\*, whose data file has an item over 2GB. (don’t validate remotely; already 1+ hours to validate). Then, validate --spot-check-data 100 -t virs\_cube\_64ppd\_h15sp.xml (which cuts execution time from 273 seconds to 24 seconds) #VAL#8 6. validate -t hd1386\_0109.xml 7. validate -t hblcpostperihelion.xml 8. validate -t 20160922T170122S099\_ncm\_L1S.xml 9. validate -D -t https://atmos.nmsu.edu/PDS/data/PDS4/MAVEN/iuvs\_calibrated\_bundle/calibration/centroid/2018/01 #validate a directory remotely 10. validate -t ccb226.xml 11. Ignore field\_format; use validation\_format: validate -t ccb214.xml |
| Test Results | Step 2: The one error is deliberate to demonstrate that the rest are working  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-26T07:40:29Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/cara\_data/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  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  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/bundle.xml  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/collection.xml  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/174P.xml  3 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/67P.xml  4 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/C2013A1.xml  5 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/29P.xml  6 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/C2004Q2.xml  7 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/116P.xml  8 product validation(s) completed  FAIL: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_documents/cara\_observer\_code.xml  ERROR [error.label.checksum\_mismatch] 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'  9 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_documents/collection.xml  10 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  9 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.checksum\_mismatch  End of Report  Completed execution in 4969 ms  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; 3rd, three. Also, bundle’s LID mismatches collection’s, which mismatches one data product’s LID  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:28:52Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/vld\_415/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/vld\_415/bundle.xml  1 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/collection.xml  2 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/116P.xml  WARNING [warning.label.file\_ref\_case\_mismatch] File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/116p.tab' exists but the case doesn't match  3 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/174P.xml  WARNING [warning.label.file\_ref\_case\_mismatch] File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/174p.tab' exists but the case doesn't match  4 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/C2004Q2.xml  WARNING [warning.label.file\_ref\_case\_mismatch] File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/C2004q2.tab' exists but the case doesn't match  5 product validation(s) completed  PDS4 Bundle Level Validation Results  FAIL: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/collection.xml  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:xxxx:yyyy:c2004q2 does not begin with required parent LID urn:nasa:pds:xxx:yyyy  1 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/116P.tab  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  2 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/174P.tab  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  3 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/C2004Q2.tab  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  4 integrity check(s) completed  FAIL: file: /Users/rchen/Desktop/test/testPrep/vld\_415/bundle.xml  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:xxx:yyyy does not begin with required parent LID urn:nasa:pds:xx  5 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/116P.xml  6 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/C2004Q2.xml  7 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/174P.xml  8 integrity check(s) completed  Summary:  2 error(s)  6 warning(s)  Product Validation Summary:  5 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  6 check(s) passed  2 check(s) failed  0 check(s) skipped  Message Types:  2 error.integrity.missing\_parent\_prefix  3 warning.label.file\_ref\_case\_mismatch  3 warning.file.not\_referenced\_in\_label  End of Report  Completed execution in 5385 ms  Step 6: weird to use -R pds4.collection on a bundle. Warnings are reasonable  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:36:44Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/orex/]  Rule Type pds4.collection  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/bundle\_tagcams.xml  1 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/collection\_tagcams\_hkl0.xml  2 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/cruise\_1/20170815T164303S694\_ncm\_L0S.xml  3 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/ega/20170922T204112S269\_ncm\_L0S.xml  4 product validation(s) completed  PDS4 Collection Level Validation Results  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/checksums.txt  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  1 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/collection\_tagcams\_hkl0.xml  2 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/ega/20170922T204112S269\_ncm\_L0S.xml  3 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/bundle\_tagcams.xml  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:orex.tagcams::1.0' is not a member of any collection within the given target  4 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/cruise\_1/20170815T164303S694\_ncm\_L0S.xml  5 integrity check(s) completed  Summary:  0 error(s)  2 warning(s)  Product Validation Summary:  4 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  5 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.integrity.unreferenced\_member  1 warning.file.not\_referenced\_in\_label  End of Report  Completed execution in 6802 ms  Step 7: weird to use -R pds4. Bundle on a collection. Warnings are reasonable  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:41:59Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/collection\_tagcams\_hkl0.xml  1 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/cruise\_1/20170815T164303S694\_ncm\_L0S.xml  2 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/ega/20170922T204112S269\_ncm\_L0S.xml  3 product validation(s) completed  PDS4 Bundle Level Validation Results  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/ega/20170922T204112S269\_ncm\_L0S.xml  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:orex.tagcams:data\_hkl0:20170922t204112s269\_ncm\_l0s.dat::1.0' is not a member of any collection within the given target  1 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/cruise\_1/20170815T164303S694\_ncm\_L0S.xml  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:orex.tagcams:data\_hkl0:20170815t164303s694\_ncm\_l0s.dat::1.0' is not a member of any collection within the given target  2 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/collection\_tagcams\_hkl0.xml  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:orex.tagcams:data\_hkl0::1.0' is not a member of any bundle within the given target  3 integrity check(s) completed  Summary:  0 error(s)  3 warning(s)  Product Validation Summary:  3 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  3 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  3 warning.integrity.unreferenced\_member  End of Report  Completed execution in 6839 ms  Step 8:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:52:59Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/twins\_raw\_0015\_01.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  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 [error.table.field\_value\_data\_type\_mismatch] 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[.ffffff]Z'  ERROR [error.table.field\_value\_data\_type\_mismatch] 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  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  2 error.table.field\_value\_data\_type\_mismatch  End of Report  Completed execution in 4442 ms  Step 9: standard good message because -D disallowed checking previous step’s data  Step 10:  64c64  < <local\_identifier\_reference>Image\_Cube\_Object</local\_identifier\_reference>  ---  > <local\_identifier\_reference>Image\_Cube\_Object\_TYPO</local\_identifier\_reference>  134c134  < <elements>945</elements>  ---  > <elements>9945</elements>  Step 11: standard good message  Step 12:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:59:19Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/7f90b.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file: /Users/rchen/Desktop/test/testPrep/7f90b.xml  ERROR [error.label.schema] line 12, 110: cvc-id.1: There is no ID/IDREF binding for IDREF 'Image\_Cube\_Object\_TYPO'.  ERROR [error.label.schematron] line 63, 43: Display Dictionary: In the pds:Local\_Internal\_Reference class, the value of the pds:local\_identifier\_reference must match the value of the pds:local\_identifer of an Array class or sub-class within the File\_Area.  ERROR [error.label.local\_identifier\_not\_found] line 64: Referenced Local Identifier 'Image\_Cube\_Object\_TYPO' does not exist in any of the local\_identifier attributes in the label.  Begin Content Validation: file: /Users/rchen/Desktop/test/testPrep/7f90.img  FATAL\_ERROR [error.array.bad\_file\_read] array 1: Error occurred while reading data file: Error occurred while trying to read data at location (1, 335, 4771): null  End Content Validation: file: /Users/rchen/Desktop/test/testPrep/7f90.img  1 product validation(s) completed  Summary:  4 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  1 error.array.bad\_file\_read  1 error.label.local\_identifier\_not\_found  1 error.label.schema  End of Report  Completed execution in 7255 ms  Step 13: the output file actually shows validation errors (irrelevant to this test)  Mon Apr 27 00:02:34 PDT 2020  Mon Apr 27 00:11:04 PDT 2020  Step 14:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T21:00:37Z  Parameters:  Targets [https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/bundle\_gbo.ast.jpl.radar.shape\_models.xml  1 product validation(s) completed  PASS: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/data/a2100\_spin\_state.xml  2 product validation(s) completed  FAIL: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/data/a2100rashalom.xml  Begin Content Validation: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/data/a2100rashalom.obj  ERROR [error.table.records\_mismatch] table 2: Number of records read is not equal to the defined number of records in the label (expected 3440, got 2292).  End Content Validation: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/data/a2100rashalom.obj  3 product validation(s) completed  [snip…]  Summary:  13 error(s)  0 warning(s)  Product Validation Summary:  41 product(s) passed  13 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  13 error.table.records\_mismatch  End of Report  Completed execution in 78406 ms  Step 15: standard good message  Step 16: standard good message  Step 17: Build 10b has made extra records an error.  PDS557SAYSSKIPTHISPARTOFDATAFILE  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T22:13:28Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/mlascirdr.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/mlascirdr.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/mlascirdr.tab  ERROR [error.table.records\_mismatch] table 1: Number of records read is not equal to the defined number of records in the label (expected 2, got 3).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/mlascirdr.tab  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.table.records\_mismatch  End of Report  Completed execution in 4310 ms  Step 18: Warn that collection.csv contains a dangling LID (nosuchfile.obj )  total 6184  -rw-rw-r-- 1 rchen 1 Apr 20 2019 00ANOTHERDANGLER  total 24  -rw-rw-r-- 1 rchen 1 Apr 20 2019 00DANGLINGFILE  PDS Validate Tool Report  [snip…]  PDS4 Bundle Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/insightcameras/data/collection\_data.xml  WARNING [warning.integrity.member\_not\_found] The member 'urn:nasa:pds:insight\_cameras:data:nosuchfile.obj::1.0' could not be found in any product within the given target.  1 integrity check(s) completed  [snip]  Step 19: Line 1 of .csv is all good values; line 2 is half bad values  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T02:57:59Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/ccb213.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/ccb213.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/ccb213.csv  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 5: Value does not match its data type 'ASCII\_Real': '-15e99.99' does not match the pattern '(\+|-)?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([Ee](\+|-)?[0-9]+)?'  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 6: Value does not match its data type 'ASCII\_Real': 'NaN' does not match the pattern '(\+|-)?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([Ee](\+|-)?[0-9]+)?'  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 7: Value does not match its data type 'ASCII\_Real': -INF is not allowed  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 8: Value does not match its data type 'ASCII\_Real': '+.' does not match the pattern '(\+|-)?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([Ee](\+|-)?[0-9]+)?'  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 9: Value does not match its data type 'ASCII\_Real': '-.' does not match the pattern '(\+|-)?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([Ee](\+|-)?[0-9]+)?'  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/ccb213.csv  1 product validation(s) completed  Summary:  5 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  5 error.table.field\_value\_data\_type\_mismatch  End of Report  Completed execution in 3771 ms  Step 20: Standard good message. 2016-12-31T23:59:60.555555Z ok in label and data  Step 21: Standard good message  …  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T03:13:18Z  [snip…]  End of Report  Completed execution in 23691 ms  Step 22: Standard good message. Small negative IEEE754MSBSingle in data ok  Step 23: Standard good message. Datetime value of 1997-04-06T02:09:36 ok  Step 24: Standard good message. All floats are read ok.  Step 25: Older versions hung. (this test works faster with quick failures)  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T03:19:21Z  Parameters:  Targets [https://atmos.nmsu.edu/PDS/data/PDS4/MAVEN/iuvs\_calibrated\_bundle/calibration/centroid/2018/01]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation off  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: https://atmos.nmsu.edu/PDS/data/PDS4/MAVEN/iuvs\_calibrated\_bundle/calibration/centroid/2018/01/mvn\_iuv\_l1b\_centroid-orbit06470-fuv\_20180127T053800.xml  Begin Fragment: http://pds.nasa.gov/pds4/disp/v1  ERROR [error.label.schema] line 10, 5: The element type "meta" must be terminated by the matching end-tag "</meta>".  End Fragment: http://pds.nasa.gov/pds4/disp/v1  1 product validation(s) completed  [snip…]  Summary:  1806 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1806 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1806 error.label.schema  End of Report  Completed execution in 1045722 ms  Step 26: Standard good message.  Step 27: I think complaining about insufficient digit is correct  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T03:22:31Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/ccb214.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/ccb214.xml  ERROR [error.label.schematron] line 100, 26: If a validation\_format is present, its value must be equal to the value in field\_format  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/ccb214.tab  ERROR [error.table.field\_value\_format\_precision\_mismatch] table 1, record 9, field 2: The number of digits to the right of the decimal point in the value '2.409219' does not equal the precision set in the defined field format (expected 7, got 6).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/ccb214.tab  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  1 error.table.field\_value\_format\_precision\_mismatch  End of Report  Completed execution in 3975 ms |
| Comments | Results met success criteria. |
| Date of Testing | 2020.04.27 |
| Test Personnel | Richard Chen |

|  |  |
| --- | --- |
| Test Case ID | VAL.7 |
| Description | Test various capabilities described in release documents. |
| Requirements | PASS L5.PRP.VA.\*: |
| Success Criteria | Verify build 10a issues |
| Test Steps | 1. cd /Users/rchen/Desktop/test/testPrep 2. validate -t val15.xml #VAL#15 3. validate -t val87.xml # edit val87.catalog to point to local files 4. validate -C val87.catalog -t val87.xml #VAL#87 VAL#71 5. validate -C val87.catalog val87.xml #VAL#72 6. validate -c val84.cfg #VAL#84 VAL#74 7. validate -t val28.xml 8. validate --add-context-products val28.json -t val28.xml #VAL#28 9. validate -t val28.xml --skip-context-validation #VAL#47 10. validate -R pds4.bundle -t val30 >& v.out #VAL#29 VAL#30 VAL#39 11. validate -t val30/bundle\_\_insight\_ifg\_mars\_1.0.xml -f #VAL#23 12. validate -t val30/bundle\_\_insight\_ifg\_mars\_1.0.xml -m1D00 #VAL#23 13. validate -t val30/bundle\_\_insight\_ifg\_mars\_1.0.xml --no-data-check #VAL#133 14. validate -R pds4.bundle -t val30 --skip-content-validation #VAL#133 VAL#99 15. validate --target-manifest val50.list #VAL#50. Edit val50.lst if paths changed 16. diff val15.xml val62.xml 17. validate -t val62.xml #VAL#62 VAL#90 18. diff val9a.xml val9b.xml 19. validate -t val9a.xml 20. validate -t val9b.xml # VAL#9 VAL#170 21. validate -t val33/data/frd.xml -x val33/dicts/\*.xsd -S val33/dicts/\*sch 22. validate -t val33/data/frd.xml -C val33/dicts/catalog\_psa1101.xml #VAL#33 23. diff val28.json val107.json #VAL#107 24. validate -v1 --add-context-products val28.json -t val28.xml 25. validate -v1 --add-context-products val107.json -t val28.xml #VAL#28 26. echo $JAVA\_HOME #VAL#37. Add spaces appropriately 27. sudo mv /Library/Java/JavaVirtualMachines "/Library/Java/Java Virtual Machines" 28. validate -V #this should fail 29. setenv JAVA\_HOME "/Library/Java/Java Virtual Machines/jdk-12.0.1.jdk/Contents/Home" 30. validate -V #show validate handles spaces in path 31. sudo mv /Library/Java/Java\ Virtual\ Machines /Library/Java/JavaVirtualMachines; setenv JAVA\_HOME "/Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home" 32. validate -t val55.xml # Note: error message “WARNING: An illegal reflective access operation has occurred” never appears. #VAL#55 VAL#95 |
| Test Results | Step 2: in 10a, standard good message. Eventually, error for incorrect name  Step 3:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T04:59:37Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val87.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val87.xml  ERROR [error.label.schematron] line 76, 31: The attribute insight:product\_type must be equal to one of the following values 'ARK', 'ARM', 'ARO', 'BAY', 'CLM', 'CLR', 'DDD', 'DDL', 'DDS', 'DEM', 'DFF', 'DFL', 'DFS', 'DSE', 'DSG', 'DSL', 'DSP', 'DSR', 'DSS', 'Dataless-SEED', 'EDR', 'EJP', 'ERP', 'GUH', 'GUS', 'GeoCSV', 'IEF', 'IEP', 'ILC', 'ILM', 'ILP', 'ILT', 'IOF', 'IOI', 'ION', 'LANDER\_COORD', 'LIN', 'MAR', 'MDS', 'MSK', 'MXY', 'Mini-SEED', 'RAD', 'RAD-calibrated', 'RAD-derived', 'RAD-raw', 'RAF', 'RAS', 'RDM', 'RDR', 'RIE', 'RIF', 'RNE', 'RNF', 'RNG', 'RNM', 'RNO', 'RNR', 'ROTATION\_PARAMETERS', 'RSM', 'RUH', 'RUS', 'SHD', 'SHO', 'SLO', 'SLP', 'SMG', 'SMO', 'SNO', 'SNT', 'STATIL-calibrated', 'STATIL-raw', 'StationXML', 'TAU', 'TDS', 'TEM-A-calibrated', 'TEM-P-calibrated', 'TEM-calibrated', 'TEM-raw', 'TFH', 'TFS', 'TFW', 'TLM-raw', 'TNF', 'TRO', 'UIH', 'UIS', 'UIW', 'UUF', 'UUU', 'UVF', 'UVO', 'UVP', 'UVS', 'UVT', 'UVW', 'VVF', 'VVV', 'WEA', 'WSH', 'WSS', 'WWF', 'WWW', 'XXF', 'XXX', 'XYE', 'XYF', 'XYM', 'XYO', 'XYR', 'XYZ', 'YYF', 'YYY', 'ZIH', 'ZIS', 'ZIW', 'ZZF', 'ZZZ'.  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  End of Report  Completed execution in 5159 ms  Step 4: standard good message  Step 5: prevent -C from greediness  gov.nasa.pds.validate.commandline.options.InvalidOptionException: No files specified for validation. Check your paths and use -t flag to explicitly denote the set of target data.  Completed execution in 871 ms  Step 6: standard good message. specify schema and schematron via config file  Step 7: the .xml references a non-existent LID  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T05:23:18Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val28.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val28.xml  ERROR [error.label.context\_ref\_not\_found] line 60: 'Context product not found: urn:nasa:pds:context:target:asteroid.testme  1 product validation(s) completed  Summary  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.context\_ref\_not\_found  End of Report  Completed execution in 4376 ms  Step 8: the .json “defines” the non-existent LID. The WARNING is deliberate  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T05:25:19Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val28.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Non Registered Contexts File val28.json  Product Level Validation Results  PASS: gov.nasa.pds.validate.ValidateLauncher  WARNING [warning.product\_not\_registered] Non-registered context products should only be used during archive development. All context products must be registered for a valid, released archive bundle.  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val28.xml  2 product validation(s) completed  Summary:  0 error(s)  1 warning(s)  Product Validation Summary:  2 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.product\_not\_registered  End of Report  Completed execution in 4298 ms  Step 9: Standard good message, i.e. no check for error.label.context\_ref\_not\_found  Step 10: v1.22.3 needed 17+ minutes for the 6.4GB bundle. v1.15.0 needed 51.  Steps 11-13: flags -f, -m --no-check-data deprecated (note: checksum warnings valid)  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:04:50Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val30/bundle\_\_insight\_ifg\_mars\_1.0.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/bundle\_\_insight\_ifg\_mars\_1.0.xml  1 product validation(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  1 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  NOTE: The following flags have been deprecated. These options will no longer be supported after December 20, 2021.  Update execution as soon as possible to avoid issues. Contact pds\_operator@jpl.nasa.gov if you have issues.  --force (-f)--model-version (-m) flags have been deprecated.  The default behavior of the Validate Tool validates against the schemas and  schematrons specified in a label.  Please use -x and/or -S flag(s) to validate with the core PDS or user-specified  schema and schematron.  --no-check-data flag has been deprecated and replaced by --skip-content-validation to avoid confusion in naming of other flags. Please change software execution to use the new flag to avoid any issues.  Completed execution in 3906 ms  Step 14: --skip-content-validation works. 1+ minutes to execute  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:43:01Z  [snip…]  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/data-ifg-calibrated/ifg\_cal\_SOL0041\_20190107T090652\_20190108T094626\_pt2Hz\_v01.xml  585 integrity check(s) completed  Summary:  179 error(s)  2 warning(s)  Product Validation Summary:  485 product(s) passed  98 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  581 check(s) passed  4 check(s) failed  0 check(s) skipped  Message Types:  98 error.label.checksum\_mismatch  78 error.integrity.missing\_parent\_prefix  2 error.file.name\_has\_invalid\_characters  1 error.table.records\_mismatch  2 warning.file.not\_referenced\_in\_label  End of Report  Completed execution in 84515 ms  Step 15:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:51:00Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val30/browse/ifg\_cal\_SOL0014\_20181211T021721\_20181211T155105\_pt2Hz\_v01.xml, file:/Users/rchen/Desktop/test/testPrep/val30/document/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/browse/ifg\_cal\_SOL0014\_20181211T021721\_20181211T155105\_pt2Hz\_v01.xml  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/document/PolymonialFits.xml  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/document/InSight\_IFG\_Data\_Calibration\_Description.xml  3 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/document/Insight\_IFG\_SIS.v1.1.xml  4 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/document/collection\_document\_1.0.xml  5 product validation(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  5 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  Completed execution in 5732 ms  Step 16:  32c32  < <name>A Non-Shouting Name</name> <!-- RChen: error per val15; should be INSIGHT as of 2019.10 -->  ---  > <name>INSIGHT</name> <!-- RChen: as of 20191020-->  35c35  < <lid\_reference>urn:nasa:pds:context:investigation:mission.insight</lid\_reference>  ---  > <lid\_reference>urn:nasa:pds:context:investigation:mission.fakefake</lid\_reference> <!--RChen: #val90-->  45c45  < <lid\_reference>urn:nasa:pds:context:instrument\_host:spacecraft.insight</lid\_reference>  ---  > <lid\_reference>urn:nasa:pds:context:instrument\_host:spacecraft.fake</lid\_reference>  Step 17: The ERRORs are correct. v1.14.0 would not have caught them  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:54:43Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val62.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val62.xml  ERROR [error.label.context\_ref\_not\_found] line 35: 'Context product not found: urn:nasa:pds:context:investigation:mission.fakefake  ERROR [error.label.context\_ref\_not\_found] line 45: 'Context product not found: urn:nasa:pds:context:instrument\_host:spacecraft.fake  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  2 error.label.context\_ref\_not\_found  End of Report  Completed execution in 4527 ms  Step 18:  70c70  < <Table\_Character> <!-- val9: content validation should PASS on blank int -->  ---  > <Table\_Delimited> <!-- val9: content validation should FAIL on blank int -->  72a73  > <parsing\_standard\_id>PDS DSV 1</parsing\_standard\_id>  75c76,77  < <Record\_Character>  ---  > <field\_delimiter>Comma</field\_delimiter>  > <Record\_Delimited>  78,79c80  < <record\_length unit="byte">33</record\_length>  < <Field\_Character>  ---  > <Field\_Delimited>  82d82  < <field\_location unit="byte">1</field\_location>  84d83  < <field\_length unit="byte">17</field\_length>  86,87c85,86  < </Field\_Character>  < <Field\_Character>  ---  > </Field\_Delimited>  > <Field\_Delimited>  90d88  < <field\_location unit="byte">19</field\_location>  92d89  < <field\_length unit="byte">13</field\_length>  94,96c91,93  < </Field\_Character>  < </Record\_Character>  < </Table\_Character>  ---  > </Field\_Delimited>  > </Record\_Delimited>  > </Table\_Delimited>  Step 19: Error on last data line is correct  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:57:39Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val9a.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val9a.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val9.tab  ERROR [error.table.record\_length\_mismatch] table 1, record 5: Record does not equal the defined record length (expected 33, got 20).  ERROR [error.table.bad\_field\_read] table 1, record 5, field 2: Error while getting field value: offset 18, count 13, length 20  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val9.tab  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.table.record\_length\_mismatch  1 error.table.bad\_field\_read  End of Report  Completed execution in 4669 ms  Step 20: record 2 has int of spaces, bad for Table\_Delimited. Validate fails correctly  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:01:23Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val9b.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val9b.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val9.tab  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 2: Value does not match its data type 'ASCII\_Integer': ' ' does not match the pattern '[+-]?\d+'  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val9.tab  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.table.field\_value\_data\_type\_mismatch  End of Report  Completed execution in 4397 ms  Step 21:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:02:40Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val33/data/frd.xml]  User Specified Schemas [file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PDS\_1B00.xsd, file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PSA\_1101.xsd, file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PSA\_EM16\_FREND\_1100.xsd]  User Specified Schematrons [file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PDS\_1B00.sch, file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PSA\_1101.sch, file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PSA\_EM16\_FREND\_1100.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val33/data/frd.xml  ERROR [error.label.schema] line 979, 27: cvc-complex-type.2.4.a: Invalid content was found starting with element '{"http://pds.nasa.gov/pds4/pds/v1":fField\_Character}'. One of '{"http://pds.nasa.gov/pds4/pds/v1":Field\_Character, "http://pds.nasa.gov/pds4/pds/v1":Group\_Field\_Character}' is expected.  ERROR [error.label.schematron] line 18, 24: The value of the attribute logical\_identifier must only contain lower-case letters  ERROR [error.label.schematron] line 931, 25: The number of Field\_Character elements (4) does not match the number found in the 'fields' attribute (5).  ERROR [error.label.context\_ref\_not\_found] line 57: 'Context product not found: urn:esa:psa:context:investigation:mission.em16  ERROR [error.label.context\_ref\_not\_found] line 70: 'Context product not found: urn:esa:psa:context:instrument\_host:spacecraft.tgo  ERROR [error.label.context\_ref\_not\_found] line 80: 'Context product not found: urn:esa:psa:context:instrument:frend.tgo  1 product validation(s) completed  Summary:  6 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  3 error.label.context\_ref\_not\_found  2 error.label.schematron  1 error.label.schema  End of Report  Completed execution in 3804 ms  Step 22: validate -C warns error.catalog.unresolvable\_resource instead of quitting  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:09:17Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val33/data/frd.xml]  User Specified Catalogs [val33/dicts/catalog\_psa1101.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val33/data/frd.xml  ERROR [error.label.schema] line 979, 27: cvc-complex-type.2.4.a: Invalid content was found starting with element '{"http://pds.nasa.gov/pds4/pds/v1":fField\_Character}'. One of '{"http://pds.nasa.gov/pds4/pds/v1":Field\_Character, "http://pds.nasa.gov/pds4/pds/v1":Group\_Field\_Character}' is expected.  WARNING [error.catalog.unresolvable\_resource] SystemId is not set in resource. Most likely related to other XML validation ERROR.  WARNING [error.catalog.unresolvable\_resource] SystemId is not set in resource. Most likely related to other XML validation ERROR.  ERROR [error.label.schematron] line 18, 24: The value of the attribute logical\_identifier must only contain lower-case letters  ERROR [error.label.schematron] line 931, 25: The number of Field\_Character elements (4) does not match the number found in the 'fields' attribute (5).  ERROR [error.label.context\_ref\_not\_found] line 57: 'Context product not found: urn:esa:psa:context:investigation:mission.em16  ERROR [error.label.context\_ref\_not\_found] line 70: 'Context product not found: urn:esa:psa:context:instrument\_host:spacecraft.tgo  ERROR [error.label.context\_ref\_not\_found] line 80: 'Context product not found: urn:esa:psa:context:instrument:frend.tgo  1 product validation(s) completed  Summary:  6 error(s)  2 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  3 error.label.context\_ref\_not\_found  2 error.label.schematron  2 error.catalog.unresolvable\_resource  1 error.label.schema  End of Report  Completed execution in 3777 ms  Step 23: handle multiple values for type  8c8,9  < "ASTEROID"  ---  > "ASTEROID",  > "Planet"  Step 24: 10a disabled checking of <type> of references, but -v1 shows it  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:12:04Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val28.xml]  Severity Level INFO  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Non Registered Contexts File val28.json  Product Level Validation Results  PASS: gov.nasa.pds.validate.ValidateLauncher  WARNING [warning.product\_not\_registered] Non-registered context products should only be used during archive development. All context products must be registered for a valid, released archive bundle.  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val28.xml  INFO [info.label.context\_ref\_found] line 33: Context product found: 'urn:nasa:pds:context:investigation:mission.cassini-huygens'  INFO [info.label.context\_ref\_mismatch] line 33: Context reference name mismatch. Value: 'Cassini' Expected one of: '[CASSINI-HUYGENS]'  INFO [info.label.context\_ref\_found] line 43: Context product found: 'urn:nasa:pds:context:instrument:cirs.co'  INFO [info.label.context\_ref\_mismatch] line 43: Context reference name mismatch. Value: 'cocirs' Expected one of: '[COMPOSITE INFRARED SPECTROMETER]'  INFO [info.label.context\_ref\_found] line 51: Context product found: 'urn:nasa:pds:context:instrument\_host:spacecraft.co'  INFO [info.label.context\_ref\_case\_mismatch] line 51: Context reference name case mismatch. Value: 'Cassini Orbiter' Expected one of: '[CASSINI ORBITER]'  INFO [info.label.context\_ref\_found] line 60: Context product found: 'urn:nasa:pds:context:target:asteroid.testme'  INFO [info.label.context\_ref\_mismatch] line 60: Context reference name mismatch. Value: 'Saturn' Expected one of: '[not a real asteroid]'  INFO [info.label.context\_ref\_mismatch] line 60: Context reference type mismatch. Value: 'Planet' Expected one of: '[ASTEROID]'  2 product validation(s) completed  Summary:  0 error(s)  1 warning(s)  Product Validation Summary:  2 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.product\_not\_registered  4 info.label.context\_ref\_mismatch  4 info.label.context\_ref\_found  1 info.label.context\_ref\_case\_mismatch  End of Report  Completed execution in 4432 ms  Step 25: One fewer info.label.context\_ref\_mismatch than previous step  [snip….]  PASS: file:/Users/rchen/Desktop/test/testPrep/val28.xml  INFO [info.label.context\_ref\_found] line 33: Context product found: 'urn:nasa:pds:context:investigation:mission.cassini-huygens'  INFO [info.label.context\_ref\_mismatch] line 33: Context reference name mismatch. Value: 'Cassini' Expected one of: '[CASSINI-HUYGENS]'  INFO [info.label.context\_ref\_found] line 43: Context product found: 'urn:nasa:pds:context:instrument:cirs.co'  INFO [info.label.context\_ref\_mismatch] line 43: Context reference name mismatch. Value: 'cocirs' Expected one of: '[COMPOSITE INFRARED SPECTROMETER]'  INFO [info.label.context\_ref\_found] line 51: Context product found: 'urn:nasa:pds:context:instrument\_host:spacecraft.co'  INFO [info.label.context\_ref\_case\_mismatch] line 51: Context reference name case mismatch. Value: 'Cassini Orbiter' Expected one of: '[CASSINI ORBITER]'  INFO [info.label.context\_ref\_found] line 60: Context product found: 'urn:nasa:pds:context:target:asteroid.testme'  INFO [info.label.context\_ref\_mismatch] line 60: Context reference name mismatch. Value: 'Saturn' Expected one of: '[not a real asteroid]'  2 product validation(s) completed  Summary:  0 error(s)  1 warning(s)  Product Validation Summary:  2 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.product\_not\_registered  4 info.label.context\_ref\_found  3 info.label.context\_ref\_mismatch  1 info.label.context\_ref\_case\_mismatch  End of Report  Completed execution in 3851 ms  Step 28:  /PDS4tools/validate/bin/validate: line 66: /Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home/bin/java: No such file or directory  Step 30:  gov.nasa.pds:validate  Version 1.22.3  Release Date: 2020-04-17 18:16:03  Copyright 2019, by the California Institute of Technology ("Caltech").  All rights reserved.  Step 32: One iteration of validate was not catching these 4 errors.  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:27:24Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val55.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val55.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val55.tab  ERROR [error.table.record\_length\_mismatch] table 1, record 1: Record length exceeds the max defined record length (expected 59, got 156).  ERROR [error.table.record\_length\_mismatch] table 1, record 2: Record length exceeds the max defined record length (expected 59, got 185).  ERROR [error.table.record\_length\_mismatch] table 1, record 3: Record length exceeds the max defined record length (expected 59, got 190).  ERROR [error.table.record\_length\_mismatch] table 1, record 4: Record length exceeds the max defined record length (expected 59, got 175).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val55.tab  1 product validation(s) completed  Summary:  4 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  4 error.table.record\_length\_mismatch  End of Report  Completed execution in 3863 ms |
| Comments | Results met success criteria. |
| Date of Testing | 2020.04.28 |
| Test Personnel | Richard Chen |

|  |  |
| --- | --- |
| Test Case ID | VAL.8 |
| Description | Test various capabilities described in release 10b: |
| Requirements | PASS L5.PRP.VA.\*: |
| Success Criteria | Verify proper handling of build 10b issues. |
| Test Steps | 1. cd /Users/rchen/Desktop/test/testPrep 2. validate -t val56char.xml # VAL#56 3. validate -t val56bin.xml 4. validate --skip-content-validation -t val182.xml #VAL#175 VAL#182 VAL#183 5. validate --skip-content-validation -t val56char.xml #for VAL#135 6. validate -t val63.xml #VAL#63 7. validate -t val29 #also VAL#123 VAL#180 8. validate -t ../contextPDS3 #VAL#124 VAL#126 9. validate -t val217/d\*.xml val217/[ab]\*.xml # VAL#149 10. validate -t val217/\*.xml #VAL#208 needs d\*.xml to validate last 11. diff val178.xml val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml 12. validate -t val178.xml; validate -D -t val178.xml; validate -t val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml; validate -D -t val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml #VAL#178 13. validate --spot-check-data 54 -t val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml # VAL#165 14. validate -t val201.xml # VAL#201 15. validate -t val118 # VAL#118 16. validate -h # VAL#145 17. validate-bundle -n 1 -t /Users/rchen/Desktop/test/bundleLID/bundle\_1.xml -r validate\_20.txt # VAL#194. Same as VAL.3 step 4 plus -r option 18. tail validate\_20.txt; rm -r validate\_20\* |
| Test Results | Step 2: validate catches overlapping fields  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:33:56Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val56char.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val56char.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val56char.tab  ERROR [error.table.field\_value\_overlap] table 1, record 1, field 2: The field is overlapping with the next field. Current field ends at 34. Next field starts at 21  ERROR [error.table.field\_value\_overlap] table 1, record 2, field 2: The field is overlapping with the next field. Current field ends at 34. Next field starts at 21  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val56char.tab  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  2 error.table.field\_value\_overlap  End of Report  Completed execution in 4068 ms  Step 3:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T08:01:20Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val56bin.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val56bin.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val56bin.dat  ERROR [error.table.field\_value\_overlap] table 1, record 1, field 5: The field is overlapping with the next field. Current field ends at 38. Next field starts at 37  ERROR [error.table.field\_value\_overlap] table 1, record 2, field 5: The field is overlapping with the next field. Current field ends at 38. Next field starts at 37  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val56bin.dat  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  2 error.table.field\_value\_overlap  End of Report  Completed execution in 4023 ms  Step 4: Standard good message. Validate 1.17.5 would check data anyway  Step 5: Standard good message. u:n:p:c:telescope:\* wasn’t in validate’s json input  Step 6: validate v1.17.5 allowed this, but validate#63 wanted it to be an error. Meh  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-29T01:11:53Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val63.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val63.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val63.tab  ERROR [error.table.bad\_file\_read] table 1: ERROR: GroupFieldCharacter attribute group\_length is larger than size of contained fields: 32>20.  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val63.tab  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.table.bad\_file\_read  End of Report  Completed execution in 4474 ms  Step 7: val29: improve bundle performance, v1.15.0 took 269 seconds; val123: <1sec/100MB, big file is 673MB, so more like 1sec/20MB; val180: all threads completed even though 1 took much longer.  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-29T01:15:27Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val29/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/val29/bundle\_em16\_tgo\_nmd.xml  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val29/data\_pp/collection\_data\_partially\_processed.xml  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val29/data\_pp/nmd\_par\_sc\_uvis\_20200309T124104-20200309T143040-29-10231-1.xml  3 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml  4 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val29/data\_raw/collection\_data\_raw.xml  5 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124054-20200309T131745-27-10231-1.xml  6 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124104-20200309T143040-29-10231-1.xml  7 product validation(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  7 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  Completed execution in 46565 ms  Step 8: speed of validation without content validation here: 27302files/747seconds  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-29T01:23:41Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/contextPDS3/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/contextPDS3/Product\_Bundle\_1.0.xml  1 product validation(s) completed  ..  PASS: file:/Users/rchen/Desktop/test/contextPDS3/attribute/aaCollection\_1.0.xml  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/contextPDS3/attribute/Product/attribute\_da\_contact\_pds\_user\_id\_1.0.xml  3 product validation(s) completed  [snip…]  PASS: file:/Users/rchen/Desktop/test/contextPDS3/personnel/Product/guest\_IALEXEEV\_1.0.xml  27302 product validation(s) completed  Summary:  39 error(s)  0 warning(s)  Product Validation Summary:  27289 product(s) passed  13 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  26 error.table.field\_value\_data\_type\_mismatch  8 error.label.duplicate\_identifier  2 error.table.fields\_mismatch  2 error.label.schema  1 error.table.records\_mismatch  End of Report  Completed execution in 747110 ms  Step 9: Every data file is 3 records, and each data file has 3 labels pointing to it, with records = 2,3,4, so val#149 wants 15 warnings, 15 clean passes, and 15 fails.  PDS Validate Tool Report  Configuration:  Version 1.24.0-SNAPSHOT  Date 2020-05-12T04:49:43Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val217/delanc2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delanc3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delanc4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delbro2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delbro3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delbro4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delinv2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delinv3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delinv4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delmet2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delmet3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delmet4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delobs2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delobs3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delobs4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delsup2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delsup3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/delsup4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascanc2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascanc3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascanc4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascbro2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascbro3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascbro4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascmet2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascmet3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascmet4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascobs2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascobs3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascobs4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascsup2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascsup3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/ascsup4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binanc2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binanc3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binanc4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binbro2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binbro3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binbro4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binobs2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binobs3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binobs4.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binsup2.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binsup3.xml, file:/Users/rchen/Desktop/test/testPrep/val217/binsup4.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/val217/delanc2.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val217/del.csv  WARNING [error.table.records\_mismatch] table 1: Number of records read is not equal to the defined number of records in the label (expected 2, got 3).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val217/del.csv  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val217/delanc3.xml  2 product validation(s) completed  FAIL: file:/Users/rchen/Desktop/test/testPrep/val217/delanc4.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val217/del.csv  ERROR [error.table.records\_mismatch] table 1: Number of records read is not equal to the defined number of records in the label (expected 4, got 3).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val217/del.csv  3 product validation(s) completed  [snip...]  Summary:  10 error(s)  10 warning(s)  Product Validation Summary:  35 product(s) passed  10 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  20 error.table.records\_mismatch  End of Report  Completed execution in 25372 ms  Step 10: should be the same as the previous step, but val#208 shows an extra error  [snip…]  FAIL: file:/Users/rchen/Desktop/test/testPrep/val217/delanc2.xml  Begin Schema: https://pds.nasa.gov/pds4/rings/v1/PDS4\_RINGS\_1D00\_1900.xsd  ERROR [error.label.schema] line 1059, 78: src-resolve: Cannot resolve the name 'pds:Units\_of\_Gmass' to a(n) 'type definition' component.  ERROR [error.label.schema] line 1059, 78: src-resolve: Cannot resolve the name 'pds:Units\_of\_Gmass' to a(n) 'simpleType definition' component.  ERROR [error.label.schema] line 167, 74: src-resolve: Cannot resolve the name 'pds:local\_identifier' to a(n) 'element declaration' component.  ERROR [error.label.schema] line 183, 78: src-resolve: Cannot resolve the name 'pds:local\_identifier' to a(n) 'element declaration' component.  [snip…]  Step 11: the two products have equal width, widely different length  85c85  < <file\_name>val178.tab</file\_name>  ---  > <file\_name>nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.tab</file\_name>  89,90c89,90  < <records>2</records>  < <!--md5\_checksum>cb9114bd570918b94c612243796a8ea9</md5\_checksum-->  ---  > <records>4266</records>  > <md5\_checksum>cb9114bd570918b94c612243796a8ea9</md5\_checksum>  96c96  < <records>2</records>  ---  > <records>4266</records>  Step 12: val178: Improve performance with content validation off  Short file normal, with -D: 4104 ms, 3508 ms  Long file normal, with -D: 37352 ms, 5106 ms  Step 13: all standard good message  Step 14: this fails correctly. Val#201 inhibited checking  Step 15: VAL#118: at bottom, 385 errors = 228+74+74+8+1, 2 warnings  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-29T09:08:19Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val118/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val118/bundle\_voroelden.xml  ERROR [error.label.schema] line 44, 37: cvc-complex-type.2.4.a: Invalid content was found starting with element '{"http://pds.nasa.gov/pds4/pds/v1":Internal\_Reference}'. One of '{"http://pds.nasa.gov/pds4/pds/v1":External\_Reference}' is expected.  ERROR [error.label.schema] line 56, 37: cvc-complex-type.2.4.a: Invalid content was found starting with element '{"http://pds.nasa.gov/pds4/pds/v1":Internal\_Reference}'. One of '{"http://pds.nasa.gov/pds4/pds/v1":External\_Reference}' is expected.  ERROR [error.label.context\_ref\_not\_found] line 53: 'Context product not found: urn:nasa:pds:context:instrument:vo1.rss  ERROR [error.label.context\_ref\_not\_found] line 57: 'Context product not found: urn:nasa:pds:context:instrument:vo2.rss  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val118/context/collection\_context\_voroelden.xml  WARNING [warning.label.missing\_schematron\_spec] No schematrons specified in the label  WARNING [warning.label.missing\_schematron\_spec] No schematrons specified in the label  2 product validation(s) completed  [snip…]  FAIL: file:/Users/rchen/Desktop/test/testPrep/val118/data/voroelden\_1\_508\_a\_v01\_r00.xml  ERROR [error.label.context\_ref\_not\_found] line 30: 'Context product not found: urn:nasa:pds:context:investigation:mission.TBD  ERROR [error.label.context\_ref\_not\_found] line 40: 'Context product not found: urn:nasa:pds:context:instrument\_host:spacecraft.TBD  ERROR [error.label.context\_ref\_not\_found] line 48: 'Context product not found: urn:nasa:pds:context:instrument:TBD.TBD  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val118/data/voroelden\_1\_508\_a\_v01\_r00.tab  ERROR [error.table.records\_mismatch] table 2: Number of records read is not equal to the defined number of records in the label (expected 163, got 162).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val118/data/voroelden\_1\_508\_a\_v01\_r00.tab  79 product validation(s) completed  Summary:  385 error(s)  2 warning(s)  Product Validation Summary:  1 product(s) passed  78 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  228 error.label.context\_ref\_not\_found  74 error.table.records\_mismatch  74 error.table.missing\_CRLF  8 error.label.schema  1 error.label.duplicate\_identifier  2 warning.label.missing\_schematron\_spec  End of Report  Completed execution in 11548 ms  Step 16: val145: good description of --spot-check-data  usage: validate <target> <options>  [snip…]  --spot-check-data <num> Tool only checks every nth record or  line and skips the rest during data  content validation.  [snip…]  Step 17: Similar output to VAL.3 step 4  Step 18:  >>>>>>>>>>>>>>> OVERALL SUMMARY:  Summary:  12 error(s)  4 warnings(s)  End of Report  <<<<<<<<<<<<<<< |
| Comments | Minor bugs:  Step 10: [val#208](https://github.com/NASA-PDS-Incubator/validate/issues/208) is not fixed, but the scenario is unlikely since the labels have more divergent namespaces than bundles typically have  Step 9: [val#149](https://github.com/NASA-PDS-Incubator/validate/issues/149): validate misses 5 errors and 5 warnings for uncommon tables: - Table\_Delimited in Product\_Metadata\_Supplemental  - Table\_Delimited in Product\_Observational/File\_Area\_Observational\_Supplemental  - Table\_Character in Product\_Metadata\_Supplemental  - Table\_Character in Product\_Observational/File\_Area\_Observational\_Supplemental  - Table\_Binary in Product\_Observational/File\_Area\_Observational\_Supplemental |
| Date of Testing | 2020.05.11 |
| Test Personnel | Richard Chen |

### Testing of New/Modified Modules on Linux

These tests mainly demonstrate platform independence, so Description, Requirements, and Success Criteria have been removed from each test, while Test Case ID and Test Steps are unchanged except for directory specifications. The browser may need to be run through X Windows to access http://localhost

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| Test Case ID | DEEP.1 |
| Test Steps | If user’s shell is bash not csh, remove “.csh” from step 2   1. cd /home/rchen/test/testDeep 2. source $HOME/.virtualenvs/pds-deep-archive/bin/activate.csh 3. pds-deep-archive -s PDS\_RNG -b https://rings.anything/xxxx uranus\_occ\_support/bundle.xml 4. validate -t uranus\_occ\_support\_v1.0\_aip\_v1.0.xml 5. validate -t uranus\_occ\_support\_v1.0\_sip\_v1.0.xml   You could check that the generated .tab files list the files in the directory. I’m too lazy.   1. find uranus\_occ\_support -type f | wc 2. wc \*tab 3. grep records \*xml 4. rm uranus\_occ\_support\_\* |
| Test Results | Step 2: prompt changes to  [pds-deep-archive] pds-int.jpl.nasa.gov:/home/rchen>  Step 3:  INFO 👟 PDS Deep Archive, version 0.1.0  INFO 🏃‍♀️ Starting AIP generation for uranus\_occ\_support/bundle.xml  INFO 🎉 Success! AIP done, files generated:  INFO • Checksum manifest: uranus\_occ\_support\_v1.0\_checksum\_manifest\_v1.0.tab  INFO • Transfer manifest: uranus\_occ\_support\_v1.0\_transfer\_manifest\_v1.0.tab  INFO • XML label for them both: uranus\_occ\_support\_v1.0\_aip\_v1.0.xml  WARNING 🤚 Notice! --include-all-collections isn't yet supported; will assume it's enabled for now  INFO 🏃‍♀️ Starting SIP generation for uranus\_occ\_support/bundle.xml  INFO 🎉 Success! From /home/rchen/test/testDeep/uranus\_occ\_support/bundle.xml, generated these output files:  INFO • SIP Manifest: uranus\_occ\_support\_v1.0\_sip\_v1.0.tab  INFO • XML label for the SIP: uranus\_occ\_support\_v1.0\_sip\_v1.0.xml  INFO 👋 That's it! Thanks for making an AIP and SIP with us today. Bye!  Step 4:  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T05:56:23Z  Parameters:  Targets [file:/home/rchen/test/testDeep/uranus\_occ\_support\_v1.0\_aip\_v1.0.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/home/rchen/test/testDeep/uranus\_occ\_support\_v1.0\_aip\_v1.0.xml  1 product validation(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  1 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  Completed execution in 12692 ms  Step 5: standard good message, like step 4  Step 6: This and the next two steps show 28 files should be in the manifest  28 28 1798  Step 7:  28 56 2218 uranus\_occ\_support\_v1.0\_checksum\_manifest\_v1.0.tab  28 112 5630 uranus\_occ\_support\_v1.0\_sip\_v1.0.tab  28 56 14336 uranus\_occ\_support\_v1.0\_transfer\_manifest\_v1.0.tab  84 224 22184 total  Step 8:  uranus\_occ\_support\_v1.0\_aip\_v1.0.xml: <records>28</records>  uranus\_occ\_support\_v1.0\_aip\_v1.0.xml: <records>28</records>  uranus\_occ\_support\_v1.0\_aip\_v1.0.xml: <records>28</records>  uranus\_occ\_support\_v1.0\_sip\_v1.0.xml: <records>28</records>  uranus\_occ\_support\_v1.0\_sip\_v1.0.xml: <records>28</records> |
| Comments | Results met success criteria. |
| Date of Testing | 2020.05.06 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVT.1 |
| Test Steps | 1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd /home/rchen/test 3. harvest -c bundle\_geo\_ra.cfg -o /tmp/harvOut 4. In browser, <http://localhost:8983/solr/#/registry/collection-overview>, hit “Query”, then button “Execute Query” 5. registry-manager load-data -filePath /tmp/harvOut 6. Repeat step 4   Show update of registered artifacts   1. In same browser, in box q, replace \*:\* with lid:urn\:nasa\:pds\:phx\_ra Hit button “Execute Query” 2. gunzip bundle\_geo\_ra/bundle\_weird.xml.gz 3. diff bundle\_geo\_ra/bundle.xml bundle\_geo\_ra/bundle\_weird.xml 4. gzip bundle\_geo\_ra/bundle.xml 5. Repeat step 3 6. Repeat step 5 7. Repeat step 7. Note new title matches diff’s result 8. gzip bundle\_geo\_ra/bundle\_weird.xml; gunzip bundle\_geo\_ra/bundle.xml.gz   Show deletion of registered artifacts   1. registry-manager delete-data -lid urn:nasa:pds:phx\_ra 2. Repeat step 7 3. registry-manager delete-data -all 4. Repeat step 4 |
| Test Results | Step 3:  2020-05-06 23:03:27 [INFO] Logging to /tmp/harvest/harvest.log  2020-05-06 23:03:27 [INFO] Starting product crawler...  2020-05-06 23:03:27 [INFO] Reading configuration from bundle\_geo\_ra.cfg  2020-05-06 23:03:28 [INFO] Will write Solr docs to /tmp/harvOut  2020-05-06 23:03:28 [INFO] Processing file /home/rchen/test/bundle\_geo\_ra/context/spacecraft.phx\_1.1.xml  [snip…]  2020-05-06 23:03:31 [INFO] Processing file /home/rchen/test/bundle\_geo\_ra/xml\_schema/collection.xml  2020-05-06 23:03:31 [INFO] Summary:  2020-05-06 23:03:31 [INFO] Skipped files: 0  2020-05-06 23:03:31 [INFO] Processed files: 173  2020-05-06 23:03:31 [INFO] File counts by type:  2020-05-06 23:03:31 [INFO] Product\_Browse: 38  2020-05-06 23:03:31 [INFO] Product\_Bundle: 1  2020-05-06 23:03:31 [INFO] Product\_Collection: 5  2020-05-06 23:03:31 [INFO] Product\_Context: 4  2020-05-06 23:03:31 [INFO] Product\_Document: 4  2020-05-06 23:03:31 [INFO] Product\_Observational: 120  2020-05-06 23:03:31 [INFO] Product\_XML\_Schema: 1  2020-05-06 23:03:31 [INFO] Package ID: 10f0dc4a-9886-4318-a6c9-3137a8acb86e  Step 4: little output. Note "response":{"numFound":0  Step 5:  Loading file: /tmp/harvOut/solr-docs.xml  Done  Step 6: Note "response":{"numFound":173  Step 7:  Step 9:  12c12  < <title>Phoenix Robotic Arm Data Set</title>  ---  > <title>Phoenix Robotic Arm Data Set WEIRD</title>  Step 11: Output just like Step 3’s except a different last line  2020-05-06 23:14:17 [INFO] Package ID: 6e00d0dd-a7c6-4cf7-a074-c745823934f0  Step 13: Note the “WEIRD” in title    Step 15:  Deleted 1 document(s)  Step 16:  Step 17:  Deleted 172 document(s)  Step 18: little output. Note "response":{"numFound":0 |
| Comments | Results met success criteria |
| Date of Testing | 2020.05.06 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVT.2 |
| Test Steps | 1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd /home/rchen/test 3. harvest -c testHvt/hvt22a.cfg -o /tmp/harvOut #HVT#22 4. registry-manager load-data -filePath /tmp/harvOut 5. harvest -c testHvt/hvt22b.cfg -o /tmp/harvOut 6. registry-manager load-data -filePath /tmp/harvOut 7. registry-manager load-data -help #part 2 of REG#27 8. run HVT.1 on a Windows machine #REG#37 and REG#42 |
| Test Results | Step 3: this required first editing testHvt/\*.cfg to set the path correctly  2020-05-06 23:28:19 [INFO] Logging to /tmp/harvest/harvest.log  2020-05-06 23:28:19 [INFO] Starting product crawler...  2020-05-06 23:28:19 [INFO] Reading configuration from testHvt/hvt22a.cfg  2020-05-06 23:28:19 [INFO] Will write Solr docs to /tmp/harvOut  2020-05-06 23:28:20 [INFO] Processing file /home/rchen/test/testHvt/hvt22a/hvt22.xml  2020-05-06 23:28:20 [INFO] Processing file /home/rchen/test/testHvt/hvt22a/hvt22.bad.xml  2020-05-06 23:28:20 [INFO] Summary:  2020-05-06 23:28:20 [INFO] Skipped files: 0  2020-05-06 23:28:20 [INFO] Processed files: 2  2020-05-06 23:28:20 [INFO] File counts by type:  2020-05-06 23:28:20 [INFO] Product\_Ancillary: 2  2020-05-06 23:28:20 [INFO] Package ID: 2861715e-437f-4646-8fe5-0e74697c09cf  Step 4: should fail because the bad label has no VID  Loading file: /tmp/harvOut/solr-docs.xml  ERROR: Error from server at http://localhost:8983/solr: ERROR: [doc=urn:nasa:pds:uranus\_occ\_support:data:badvid::] Error adding field 'vid'='' msg=empty String  Step 5:  2020-05-06 23:30:05 [INFO] Logging to /tmp/harvest/harvest.log  2020-05-06 23:30:05 [INFO] Starting product crawler...  2020-05-06 23:30:05 [INFO] Reading configuration from testHvt/hvt22b.cfg  2020-05-06 23:30:06 [INFO] Will write Solr docs to /tmp/harvOut  2020-05-06 23:30:06 [INFO] Processing file /home/rchen/test/testHvt/hvt22b/hvt22.xml  2020-05-06 23:30:06 [INFO] Processing file /home/rchen/test/testHvt/hvt22b/hvt22.bad.xml  2020-05-06 23:30:07 [INFO] Summary:  2020-05-06 23:30:07 [INFO] Skipped files: 0  2020-05-06 23:30:07 [INFO] Processed files: 2  2020-05-06 23:30:07 [INFO] File counts by type:  2020-05-06 23:30:07 [INFO] Product\_Ancillary: 2  2020-05-06 23:30:07 [INFO] Package ID: 6d2d786f-149b-41e0-8283-96d83fc13a5f  Step 6: should fail because the bad label has no LID.  Loading file: /tmp/harvOut/solr-docs.xml  Done  Step 7:  Load data into registry collection  Options:  -filePath <path> An XML file or a directory to load. This is a required parameter.  -solrUrl <url> Solr URL. Default is http://localhost:8983/solr  -zkHost <host> ZooKeeper connection string, <host:port>[,<host:port>][/path]  For example, zk1:2181,zk2:2181,zk3:2181/solr  Step 8: unnecessary |
| Comments | Results met success criteria. |
| Date of Testing | 2020.05.06 |
| Test Personnel | Richard Chen |

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| Test Case ID | SCMA.1 |
| Test Steps | Document testScma.docx describes the testing of the PDS4 schema and schematron. |
| Test Results | SKIP: not a software test  The documentation of the testing of the information model is roughly the size of this document, so that documentation has been placed in its own document, testScma.docx. For build 10b, testScma.docx shows tests of:   * IM#97, i.e. CCB-204 * IM#99, i.e. CCB-268 * IM#101, i.e. CCB-204 * IM#103, i.e. CCB-138 * IM#113, i.e. CCB-204 * IM#122, i.e. CCB-204 * IM#130, i.e. CCB-256 * IM#133, i.e. CCB-271 * IM#135, i.e. CCB-220 * IM#137, i.e. CCB-274 * IM#139, i.e. CCB-278 * IM#142, i.e. CCB-204 * IM#144, i.e. CCB-274 * IM#146, i.e. CCB-204 * IM#148, i.e. CCB-272 * IM#152, i.e. CCB-279 * IM#179, i.e. CCB-204 |
| Comments |  |
| Date of Testing |  |
| Test Personnel |  |

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| Test Case ID | SCMA.2 |
| Test Steps | 1. cd /home/rchen/test/testLDD 2. validate -x ../PDS4\_PDS\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch -t ccb235a.xml 3. validate -x ../PDS4\_PDS\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch -t ccb235lddinput.xml 4. lddtool -pl ccb235lddinput.xml 5. validate -x ../PDS4\_PDS\_1E00.xsd PDS4\_INSIGHT\_1E00\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch PDS4\_INSIGHT\_1E00\_1E00.sch -t ccb235a.xml 6. rm PDS4\_INSIGHT\_1E00\_1E00.\* |
| Test Results | Step 2:  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T16:50:46Z  Parameters:  Targets [file:/home/rchen/test/testLDD/ccb235a.xml]  User Specified Schemas [file:/home/rchen/test/PDS4\_PDS\_1E00.xsd]  User Specified Schematrons [file:/home/rchen/test/PDS4\_PDS\_1E00.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/testLDD/ccb235a.xml  ERROR [error.label.schema] line 60, 46: cvc-complex-type.2.4.c: The matching wildcard is strict, but no declaration can be found for element 'insight:Observation\_Information'.  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schema  End of Report  Completed execution in 11035 ms  Step 3: Standard good message  Step 4:  >>info - LDDTOOL Version: 11.2.2  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Thu May 07 09:53:07 PDT 2020  >>info - JAVAHOME: /home/rchen/test/jdk-11.0.6+10  >>info - PARENT\_DIR: /home/rchen/test/lddtool-11.2.2  >>info - SCRIPT\_DIR: /home/rchen/test/lddtool-11.2.2/bin  >>info - LIB\_DIR: /home/rchen/test/lddtool-11.2.2/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  WARNING Init: - Config.Properties Namespace Id Not Found:insight  INFO Init: - Config.Properties Namespace Id Using:pds  INFO Init: - LDD Dictionary\_Type Found:Mission  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:insight  >>info - LDDTOOL Exit  >>info - Exit  Step 5: Standard good message |
| Comments | Results met success criteria. |
| Date of Testing | 2020.05.07 |
| Test Personnel | Richard Chen |

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| Test Case ID | SCMA.3 |
| Test Steps | All executions of lddtool below verify IM#77, IM#79, IM#81   1. cd /home/rchen/test/testLDD 2. lddtool -version #IM#74 3. lddtool -plD im93atm.xml im93naif.xml #IM#93   You could view the output DocBook (export/DD/PDS4\_PDS\_DD\_1E00.xml); instead   1. grep XX im93\* export/DD/PDS4\_PDS\_DD\_1E00.xml # show LDD in DocBook 2. cp im93naif.xml x.xml; lddtool -pl x.xml; rm x.xml #IM#111 3. lddtool -pl im125lddinput.xml #IM#125; nillable inside class works 4. validate -x ../PDS4\_PDS\_1E00.xsd PDS4\_MAVEN\_1E00\_1E00.xsd -S ../PDS4\_PDS\_1E00.sch PDS4\_MAVEN\_1E00\_1E00.sch -t im125.xml 5. lddtool -plM im125lddinput #IM#154, fail nicely if -M |
| Test Results | Step 2: show software version & IM version  LDDTool Version: 11.2.2  Built with IM Version: 1.14.0.0  Build Date: 2020-04-06 16:43:45  Step 3:  >>info - LDDTOOL Version: 11.2.2  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Thu May 07 09:57:01 PDT 2020  >>info - JAVAHOME: /home/rchen/test/jdk-11.0.6+10  >>info - PARENT\_DIR: /home/rchen/test/lddtool-11.2.2  >>info - SCRIPT\_DIR: /home/rchen/test/lddtool-11.2.2/bin  >>info - LIB\_DIR: /home/rchen/test/lddtool-11.2.2/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  INFO Init: - Config.Properties Namespace Id Found:atm  INFO Init: - Config.Properties Namespace Id Using:atm  INFO Init: - LDD Dictionary\_Type Found:Mission  INFO Init: - Config.Properties Namespace Id Found:naif  INFO Init: - Config.Properties Namespace Id Using:naif  INFO Init: - LDD Dictionary\_Type Found:Mission  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:naif  >>info - LDDTOOL Exit  >>info - Exit  Step 4:  im93atm.xml: <name>XXATMType\_List</name>  im93atm.xml: <local\_identifier>XXATMType\_List</local\_identifier>  im93naif.xml: <name>XXNAIFObservation\_Information</name>  im93naif.xml: <local\_identifier>XXNAIFObservation\_Information</local\_identifier>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title><anchor xml:id="N1927552474"/>XXATMType\_List</title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry namest="c1" nameend="c3" align="left"><emphasis>Name: </emphasis>XXATMType\_List</entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry namest="c1" nameend="c4" align="left"><emphasis>Class Hierarchy: </emphasis><link linkend="N1927552474">XXATMType\_&#x200B;List</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>type in <link linkend="N1927552474">XXATMType\_&#x200B;List</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N1927552474">XXATMType\_&#x200B;List</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>type\_list\_identifier in <link linkend="N1927552474">XXATMType\_&#x200B;List</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N1927552474">XXATMType\_&#x200B;List</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title><anchor xml:id="N-1198652248"/>XXNAIFObservation\_Information</title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry namest="c1" nameend="c3" align="left"><emphasis>Name: </emphasis>XXNAIFObservation\_Information</entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry namest="c1" nameend="c4" align="left"><emphasis>Class Hierarchy: </emphasis><link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>bibcode in <link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>mission\_phase\_name\_type in <link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></entry>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <title>release\_number in <link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></title>  export/DD/PDS4\_PDS\_DD\_1E00.xml: <entry><emphasis>Class Name: </emphasis><link linkend="N-1198652248">XXNAIFObservation\_&#x200B;Information</link></entry>  Step 5:  >>info - LDDTOOL Version: 11.2.2  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Thu May 07 10:03:51 PDT 2020  >>info - JAVAHOME: /home/rchen/test/jdk-11.0.6+10  >>info - PARENT\_DIR: /home/rchen/test/lddtool-11.2.2  >>info - SCRIPT\_DIR: /home/rchen/test/lddtool-11.2.2/bin  >>info - LIB\_DIR: /home/rchen/test/lddtool-11.2.2/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  INFO Init: - Config.Properties Namespace Id Found:naif  INFO Init: - Config.Properties Namespace Id Using:naif  INFO Init: - LDD Dictionary\_Type Found:Mission  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:naif  >>info - LDDTOOL Exit  >>info - Exit  Step 6:  >>info - LDDTOOL Version: 11.2.2  >>info - IM Version Id: 1.14.0.0  >>info - IM Namespace Id: pds  >>info - IM Label Version Id: 1.20  >>info - Date: Thu May 07 10:04:43 PDT 2020  >>info - JAVAHOME: /home/rchen/test/jdk-11.0.6+10  >>info - PARENT\_DIR: /home/rchen/test/lddtool-11.2.2  >>info - SCRIPT\_DIR: /home/rchen/test/lddtool-11.2.2/bin  >>info - LIB\_DIR: /home/rchen/test/lddtool-11.2.2/lib  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Rule  >>warning - Class omitted from build - Class Identifier:0001\_NASA\_PDS\_1.pds.Schematron\_Assert  >>info - getMasterObjectDict - Set LDDToolSingletonClass - DMDocument.LDDToolSingletonDOMClass.title:USER  WARNING Init: - Config.Properties Namespace Id Not Found:maven  INFO Init: - Config.Properties Namespace Id Using:pds  INFO Init: - LDD Dictionary\_Type Found:Mission  WARNING Header: - New steward has been specified:geo  WARNING Header: - New namespace id has been specified:maven  >>info - LDDTOOL Exit  >>info - Exit  Step 7: Standard good message  Step 8:  >>ERROR: This flag has been deprecated as of PDS4 IM Version 1.14.0.0. See the LDDTool User's Manual for more information on how to provide this information. |
| Comments | Results met success criteria. |
| Date of Testing | 2020.04.09 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.1 |
| Test Steps | 1. cd /home/rchen/test 2. validate -x bundle\_psi/xml\_schema/\*xsd -S bundle\_psi/xml\_schema/\*sch -R pds4.bundle -t bundle\_psi   Some files need local data dictionary img.   1. validate -x bundle\_psi/xml\_schema/\*xsd bundle\_psi2/\*xsd -S bundle\_psi/xml\_schema/\*sch bundle\_psi2/\*sch -R pds4.bundle -t bundle\_psi |
| Test Results | Step 2:  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T17:23:49Z  Parameters:  Targets [file:/home/rchen/test/bundle\_psi/]  Rule Type pds4.bundle  User Specified Schemas [file:/home/rchen/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xsd]  User Specified Schematrons [file:/home/rchen/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/home/rchen/test/bundle\_psi/bundle\_ast\_spectra\_reddy\_neos\_marscrossers.xml  1 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/document/collection\_ast\_spectra\_reddy\_neos\_marscrossers\_document.xml  2 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/document/allspectra.xml  3 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/document/AA\_Document\_Index.xml  4 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/document/bundle\_description.xml  5 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/document/ref.xml  6 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xml  7 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/xml\_schema/collection.xml  8 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/data/collection\_ast\_spectra\_reddy\_neos\_marscrossers\_data.xml  9 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/data/science\_index.xml  10 product validation(s) completed  FAIL: file:/home/rchen/test/bundle\_psi/data/2008/39572\_1993dq1.xml  ERROR [error.label.schema] 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'.  11 product validation(s) completed  [snip…]  FAIL: file:/home/rchen/test/bundle\_psi/data/2004/87684\_2000sy2.xml  ERROR [error.label.schema] 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'.  37 product validation(s) completed  PDS4 Bundle Level Validation Results  PASS: file:/home/rchen/test/bundle\_psi/document/collection\_ast\_spectra\_reddy\_neos\_marscrossers\_document.xml  1 integrity check(s) completed  [snip…]  PASS: file:/Users/rchen/Desktop/test/bundle\_psi/data/2006/85709\_1998sg36.xml  37 integrity check(s) completed  Summary:  27 error(s)  0 warning(s)  Product Validation Summary:  10 product(s) passed  27 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  37 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  27 error.label.schema  End of Report  Completed execution in 20373 ms  Step 3: should be no errors.  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T17:28:40Z  Parameters:  Targets [file:/home/rchen/test/bundle\_psi/]  Rule Type pds4.bundle  User Specified Schemas [file:/home/rchen/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.xsd, file:/home/rchen/test/bundle\_psi2/PDS4\_IMG\_1100.xsd]  User Specified Schematrons [file:/home/rchen/test/bundle\_psi/xml\_schema/PDS4\_PDS\_1600.sch, file:/home/rchen/test/bundle\_psi2/PDS4\_IMG\_1100.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/home/rchen/test/bundle\_psi/bundle\_ast\_spectra\_reddy\_neos\_marscrossers.xml  1 product validation(s) completed  [snip…]  PASS: file:/home/rchen/test/bundle\_psi/data/2006/85709\_1998sg36.xml  37 integrity check(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  37 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  37 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  Completed execution in 19722 ms |
| Comments | Results met success criteria. |
| Date of Testing | 2020.05.07 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.2 |
| Test Steps | 1. mv bundle\_psi/document/allspectra.pdf . 2. validate -t bundle\_psi/document 3. mv allspectra.pdf bundle\_psi/document/ 4. validate -R pds4.collection -t bundle\_psi/document   References also consider <directory\_path\_name>, which can be absolute, relative, and with or without a trailing ‘/’. Change path in \_good.xml   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 3. validate -t testPrep/product\_document/Product\_Doc\_good.xml |
| Test Results | Step 2: the referenced file was removed in step 1  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T17:50:15Z  Parameters:  Targets [file:/home/rchen/test/bundle\_psi/document/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/home/rchen/test/bundle\_psi/document/collection\_ast\_spectra\_reddy\_neos\_marscrossers\_document.xml  1 product validation(s) completed  FAIL: file:/home/rchen/test/bundle\_psi/document/allspectra.xml  ERROR [error.label.missing\_file] URI reference does not exist: file:/home/rchen/test/bundle\_psi/document/allspectra.pdf  2 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/document/AA\_Document\_Index.xml  3 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/document/bundle\_description.xml  4 product validation(s) completed  PASS: file:/home/rchen/test/bundle\_psi/document/ref.xml  5 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  4 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.missing\_file  End of Report  Completed execution in 12362 ms  Step 4: Standard good message; the referenced file was restored in step 3  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>/home/rchen/test/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 1.22.4  Date 2020-05-07T17:53:51Z  Parameters:  Targets [file:/home/rchen/test/testPrep/product\_document/Product\_Doc\_bad.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/testPrep/product\_document/Product\_Doc\_bad.xml  ERROR [error.label.missing\_file] URI reference does not exist: file:/replaceWithFullPath/image002.gif  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.missing\_file  End of Report  Completed execution in 10434 ms  Step 7: Standard good message. Non-existent path has been replaced by a real path |
| Comments | Results met success criteria |
| Date of Testing | 2020.05.27 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.3 |
| Test Steps | 1. cd /home/rchen/test/ 2. validate -R pds4.bundle -t bundle\_geo\_ra #VAL#137 3. validate -R pds4.bundle -t bundleLID #VAL#139 VAL#146 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 (fine since members are secondary) and an incorrect count of records (not fine) 6. data\_derived/sol148d.xml’s LID does not extend the collection’s LID 7. data\_derived/sol149b.xml has another product’s LIDVID 8. data\_test/scraping/pit\_test\_scraping\_pic[12].xml have the same LID but different VIDs, which should not be flagged. 9. data\_test/scraping/pit\_test\_scraping.xml’s LID changed to “<xxx>.xml” 10. data\_test/scraping/pit\_test\_scraping.xml’s <title> added various spaces 11. the document collection’s LID does not have the bundle’s LID as its basis.   This also tests correctly counting errors, VAL#173  Re-run step 3 using validate-bundle, the parallel version. Get the same results.   1. validate-bundle -n 1 -t /home/rchen/test/bundle\_psi/bundleLID/bundle\_1.xml 2. rm -r validate\_20\* |
| Test Results | Step 2: val137: pit\_test\_icy\_soil\_dig1.csv has blank values, which is now ok. The 174th file, bundle\_weird.xml.gz, is used by a different test.  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T18:10:48Z  Parameters:  Targets [file:/home/rchen/test/bundle\_geo\_ra/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/home/rchen/test/bundle\_geo\_ra/bundle.xml  1 product validation(s) completed  [snip...]  PASS: file:/home/rchen/test/bundle\_geo\_ra/xml\_schema/collection.xml  173 product validation(s) completed  PDS4 Bundle Level Validation Results  PASS: file:/home/rchen/test/bundle\_geo\_ra/context/context\_collection\_1.xml  1 integrity check(s) completed  PASS: file:/home/rchen/test/bundle\_geo\_ra/data\_derived/data\_derived\_collection\_1.xml  2 integrity check(s) completed  PASS: file:/home/rchen/test/bundle\_geo\_ra/data\_test/data\_test\_collection\_1.xml  3 integrity check(s) completed  PASS: file:/home/rchen/test/bundle\_geo\_ra/document/document\_collection\_1.xml  4 integrity check(s) completed  PASS: file:/home/rchen/test/bundle\_geo\_ra/xml\_schema/collection.xml  5 integrity check(s) completed  PASS: file:/home/rchen/test/bundle\_geo\_ra/bundle\_weird.xml.gz  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  6 integrity check(s) completed  PASS: file:/home/rchen/test/bundle\_geo\_ra/bundle.xml  7 integrity check(s) completed  [snip...]  PASS: file:/home/rchen/test/bundle\_geo\_ra/document/ra\_instrument.xml  174 integrity check(s) completed  Summary:  0 error(s)  1 warning(s)  Product Validation Summary:  173 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  174 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.file.not\_referenced\_in\_label  End of Report  Completed execution in 71773 ms  Step 3: good: flagging duplicate u:n:p:phx\_ra:data\_derived:sol149a::1.0 and sol148d.xml’s bad LID, not flagging pit\_test\_scraping\_pic[23].xml.  PDS Validate Tool Report  Version 1.22.4  Date 2020-05-07T18:14:32Z  Parameters:  Targets [file:/home/rchen/test/bundleLID/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/home/rchen/test/bundleLID/bundle\_1.xml  1 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/context/phx.ra\_1.0.xml  2 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/context/planet.mars\_1.2.xml  3 product validation(s) completed  FAIL: file:/home/rchen/test/bundleLID/context/context\_collection\_1.xml  Begin Content Validation: file:/home/rchen/test/bundleLID/context/context\_collection\_inventory\_1.tab  ERROR [error.table.records\_mismatch] table 1: Number of records read is not equal to the defined number of records in the label (expected 4, got 3).  End Content Validation: file:/home/rchen/test/bundleLID/context/context\_collection\_inventory\_1.tab  4 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/context/mission.phoenix\_1.1.xml  5 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_derived/sol149b.xml  6 product validation(s) completed  FAIL: file:/home/rchen/test/bundleLID/data\_derived/sol149a.xml  ERROR [error.label.duplicate\_identifier] Identifier urn:nasa:pds:phx\_ra:data\_derived:sol149a::1.0 already defined (old location: file:/home/rchen/test/bundleLID/data\_derived/sol149b.xml)  7 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_derived/sol148d.xml  8 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_derived/data\_derived\_collection\_1.xml  9 product validation(s) completed  FAIL: file:/home/rchen/test/bundleLID/data\_test/data\_test\_collection\_1.xml  ERROR [error.label.duplicate\_identifier] Identifier urn:nasa:pds:phx\_ra:data\_derived::1.0 already defined (old location: file:/home/rchen/test/bundleLID/data\_derived/data\_derived\_collection\_1.xml)  10 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/scraping/pit\_test\_scraping.xml  11 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml  12 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml  13 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig2\_pic13.xml  14 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust.xml  15 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig1\_pic1.xml  16 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/document/collection\_1.xml  17 product validation(s) completed  PASS: file:/home/rchen/test/bundleLID/document/ra\_dataset.xml  18 product validation(s) completed  PDS4 Bundle Level Validation Results  FAIL: file:/home/rchen/test/bundleLID/context/context\_collection\_1.xml  ERROR [error.table.records\_mismatch] Number of records read is not equal to the defined number of records in the collection (expected 4, got 3).  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:phx\_ra:context\_typo::1.0' is not a member of any collection within the given target  1 integrity check(s) completed  FAIL: file:/home/rchen/test/bundleLID/data\_derived/data\_derived\_collection\_1.xml  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_derived777:sol148d does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  WARNING [warning.integrity.member\_not\_found] The member 'urn:nasa:pds:phx\_ra:data\_derived:sol149b::1.0' could not be found in any product within the given target.  2 integrity check(s) completed  FAIL: file:/home/rchen/test/bundleLID/data\_test/data\_test\_collection\_1.xml  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_duricrust does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_duricrust\_dig1\_pic1 does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_duricrust\_dig2\_pic13 does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test.xml does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1 does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1 does not begin with required parent LID urn:nasa:pds:phx\_ra:data\_derived  3 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/document/collection\_1.xml  4 integrity check(s) completed  FAIL: file:/home/rchen/test/bundleLID/bundle\_1.xml  WARNING [warning.integrity.member\_not\_found] The member 'urn:nasa:pds:phx\_ra:data\_test' could not be found in any product within the given target.  WARNING [warning.integrity.member\_not\_found] The member 'urn:nasa:pds:phx\_ra:context' could not be found in any product within the given target.  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:phx\_ra\_605typo:document does not begin with required parent LID urn:nasa:pds:phx\_ra  5 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_derived/sol148d.xml  6 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_derived/sol149b.xml  7 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/scraping/pit\_test\_scraping.xml  8 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/document/ra\_dataset.xml  9 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust.xml  10 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig1\_pic1.xml  11 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/context/phx.ra\_1.0.xml  12 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/context/mission.phoenix\_1.1.xml  13 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/duricrust/pit\_test\_duricrust\_dig2\_pic13.xml  14 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/context/planet.mars\_1.2.xml  15 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml  16 integrity check(s) completed  PASS: file:/home/rchen/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml  17 integrity check(s) completed  Summary:  12 error(s)  4 warning(s)  Product Validation Summary:  15 product(s) passed  3 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  13 check(s) passed  4 check(s) failed  0 check(s) skipped  Message Types:  8 error.integrity.missing\_parent\_prefix  2 error.table.records\_mismatch  2 error.label.duplicate\_identifier  3 warning.integrity.member\_not\_found  1 warning.integrity.unreferenced\_member  End of Report  Completed execution in 24141 ms  Step 4: validate-bundle has a lot of output. Check summary’s errors and warnings  [snipj…]  >>>>>>>>>>>>>>> OVERALL SUMMARY:  Summary:  12 error(s)  4 warnings(s)  End of Report  <<<<<<<<<<<<<<<  Validation complete.  \* See /Users/rchen/Desktop/test/validate\_20200508\_103356/validate\_summary.log for a summary of results.  \* See /Users/rchen/Desktop/test/validate\_20200508\_103356 for individual Validate Tool execution reports. |
| Comments | Results met success criteria. |
| Date of Testing | 2020.05.07 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.4 |
| Test Steps | 1. cd /home/rchen/test/testPrep/product\_document 2. validate -t Product\_Doc\_part1.xml |
| Test Results | Step 2: No longer allowed  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T18:19:52Z  Parameters:  Targets [file:/home/rchen/test/testPrep/product\_document/Product\_Doc\_part1.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/testPrep/product\_document/Product\_Doc\_part1.xml  FATAL\_ERROR [error.label.schema] Error occurred while attempting to find schemas using the XPath '//\*/@xsi:schemaLocation': org.xml.sax.SAXParseException; systemId: file:/home/rchen/test/testPrep/product\_document/Product\_Doc\_part1.xml; lineNumber: 113; columnNumber: 1; XML document structures must start and end within the same entity.  ERROR [error.label.schematron] Error occurred while attempting to find schematrons using the XPath '/processing-instruction('xml-model')': org.xml.sax.SAXParseException; systemId: file:/home/rchen/test/testPrep/product\_document/Product\_Doc\_part1.xml; lineNumber: 113; columnNumber: 1; XML document structures must start and end within the same entity.  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  1 error.label.schema  End of Report  Completed execution in 5780 ms |
| Comments | Results met success criteria |
| Date of Testing | 2020.05.07 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.5 |
| Test Steps | The validate tool does not accept a schema as its target, i.e. this does not work:  validate PDS4\_PDS\_1E00.xsd  However, validate, when validating a label file, does complain when the schema is bad   1. validate -x PDS4\_PDS\_1E00.xsd -S PDS4\_PDS\_1E00.sch -t testLDD/im93atm.xml 2. diff -w PDS4\_PDS\_1E00.xsd testPrep/PDS4\_PDS\_1E00.bad.xsd 3. validate -x testPrep/PDS4\_PDS\_1E00.bad.xsd -S PDS4\_PDS\_1E00.sch -t testLDD/im93atm.xml   Give validate a non-existent schema   1. validate -x xxx.xsd -S PDS4\_PDS\_1D00.sch -t testLDD/im93atm.xml |
| Test Results | Step 1: standard good message  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  java.lang.Exception: Error while getting targetNamespace of schema 'file:/home/rchen/test/testPrep/PDS4\_PDS\_1E00.bad.xsd': org.xml.sax.SAXParseException; systemId: file:/home/rchen/test/testPrep/PDS4\_PDS\_1E00.bad.xsd; lineNumber: 8416; 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, plus eventually:  java.io.IOException: /home/rchen/test/xxx.xsd (No such file or directory)  at gov.nasa.pds.tools.util.Utility.openConnection(Utility.java:155)  at gov.nasa.pds.tools.label.CachedLSResourceResolver.resolveResource(CachedLSResourceResolver.java:199)  at gov.nasa.pds.tools.label.XMLCatalogResolver.resolveResource(XMLCatalogResolver.java:391)  at gov.nasa.pds.validate.ValidateLauncher.validateSchemas(ValidateLauncher.java:1282)  at gov.nasa.pds.validate.ValidateLauncher.processMain(ValidateLauncher.java:1382)  at gov.nasa.pds.validate.ValidateLauncher.main(ValidateLauncher.java:1449)  Error while trying to read in 'file:/home/rchen/test/xxx.xsd'  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T18:33:53Z  Parameters:  Targets [file:/home/rchen/test/testLDD/im93atm.xml]  User Specified Schemas [file:/home/rchen/test/xxx.xsd]  User Specified Schematrons [file:/home/rchen/test/PDS4\_PDS\_1D00.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/PDS4\_PDS\_1D00.sch  FATAL\_ERROR [error.label.schematron] /home/rchen/test/PDS4\_PDS\_1D00.sch (No such file or directory)  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  End of Report  Completed execution in 3246 ms |
| Comments | Results met success criteria |
| Date of Testing | 2020.05.07 |
| Test Personnel | Richard Chen |

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| Test Case ID | VAL.6 |
| Test Steps | 1. cd /home/rchen/test/testPrep   Validate multiple files via a checksum manifest   1. validate -t cara\_data -M cara\_data/checksum.tab 2. cp cara\_data/checksum.tab /tmp 3. validate -t cara\_data -M /tmp/checksum.tab 4. validate -t vld\_415 -R pds4.bundle 5. validate -R pds4.collection -t orex 6. validate -R pds4.bundle -t orex/data\_hkl0   -D disable data check   1. validate -t twins\_raw\_0015\_01.xml 2. validate -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 -t 7f90.xml 3. validate -t 7f90b.xml   Validate large bundle.   1. date ; validate -x PDS4\_PDS\_1800.xsd -S PDS4\_PDS\_1800.sch -t ../contextPDS3 > validate.big.out ; date   Validate a remote bundle   1. validate -t https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/   Catalog   1. validate -t catalogValidate/ele\_mom\_tblChar.xml -C catalogValidate/catalog-dph.xml   Allow large integers and readme\_\*.txt   1. validate -t maven-rose-raw -R pds4.bundle   Build 9a:   1. tail -1 mlascirdr.tab; validate -t mlascirdr.xml 2. ls -o insightcameras/data/sol/0003/mipl/edr/icc | head -2; ls -o insightcameras | head -2 ; validate -R pds4.bundle -t insightcameras 3. validate -t ccb213.xml #test legal and illegal ASCII\_Real values 4. validate -t ccb226.xml #test microseconds 5. Download <http://pds-geosciences.wustl.edu/messenger/urn-nasa-pds-izenberg_pdart14_meap/data_imagecube/virs/H15>/\*, whose data file has an item over 2GB. (don’t validate remotely; already 1+ hours to validate). Then, validate --spot-check-data 100 -t virs\_cube\_64ppd\_h15sp.xml (which cuts execution time from 273 seconds to 24 seconds) #VAL#8 6. validate -t hd1386\_0109.xml 7. validate -t hblcpostperihelion.xml 8. validate -t 20160922T170122S099\_ncm\_L1S.xml 9. validate -D -t https://atmos.nmsu.edu/PDS/data/PDS4/MAVEN/iuvs\_calibrated\_bundle/calibration/centroid/2018/01 #validate a directory remotely 10. validate -t ccb226.xml 11. Ignore field\_format; use validation\_format: validate -t ccb214.xml |
| Test Results | SKIP too many steps  Step 2: The one error is deliberate to demonstrate that the rest are working  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-26T07:40:29Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/cara\_data/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  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  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/bundle.xml  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/collection.xml  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/174P.xml  3 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/67P.xml  4 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/C2013A1.xml  5 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/29P.xml  6 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/C2004Q2.xml  7 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_data/data/116P.xml  8 product validation(s) completed  FAIL: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_documents/cara\_observer\_code.xml  ERROR [error.label.checksum\_mismatch] 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'  9 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/cara\_data/cara\_documents/collection.xml  10 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  9 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.checksum\_mismatch  End of Report  Completed execution in 4969 ms  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; 3rd, three. Also, bundle’s LID mismatches collection’s, which mismatches one data product’s LID  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:28:52Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/vld\_415/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/vld\_415/bundle.xml  1 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/collection.xml  2 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/116P.xml  WARNING [warning.label.file\_ref\_case\_mismatch] File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/116p.tab' exists but the case doesn't match  3 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/174P.xml  WARNING [warning.label.file\_ref\_case\_mismatch] File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/174p.tab' exists but the case doesn't match  4 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/C2004Q2.xml  WARNING [warning.label.file\_ref\_case\_mismatch] File reference'/Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/C2004q2.tab' exists but the case doesn't match  5 product validation(s) completed  PDS4 Bundle Level Validation Results  FAIL: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/collection.xml  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:xxxx:yyyy:c2004q2 does not begin with required parent LID urn:nasa:pds:xxx:yyyy  1 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/116P.tab  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  2 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/174P.tab  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  3 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/C2004Q2.tab  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  4 integrity check(s) completed  FAIL: file: /Users/rchen/Desktop/test/testPrep/vld\_415/bundle.xml  ERROR [error.integrity.missing\_parent\_prefix] Member LID urn:nasa:pds:xxx:yyyy does not begin with required parent LID urn:nasa:pds:xx  5 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/116P.xml  6 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/C2004Q2.xml  7 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/vld\_415/cara\_data/datayyy/174P.xml  8 integrity check(s) completed  Summary:  2 error(s)  6 warning(s)  Product Validation Summary:  5 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  6 check(s) passed  2 check(s) failed  0 check(s) skipped  Message Types:  2 error.integrity.missing\_parent\_prefix  3 warning.label.file\_ref\_case\_mismatch  3 warning.file.not\_referenced\_in\_label  End of Report  Completed execution in 5385 ms  Step 6: weird to use -R pds4.collection on a bundle. Warnings are reasonable  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:36:44Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/orex/]  Rule Type pds4.collection  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/bundle\_tagcams.xml  1 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/collection\_tagcams\_hkl0.xml  2 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/cruise\_1/20170815T164303S694\_ncm\_L0S.xml  3 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/ega/20170922T204112S269\_ncm\_L0S.xml  4 product validation(s) completed  PDS4 Collection Level Validation Results  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/checksums.txt  WARNING [warning.file.not\_referenced\_in\_label] File is not referenced by any label  1 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/collection\_tagcams\_hkl0.xml  2 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/ega/20170922T204112S269\_ncm\_L0S.xml  3 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/bundle\_tagcams.xml  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:orex.tagcams::1.0' is not a member of any collection within the given target  4 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/cruise\_1/20170815T164303S694\_ncm\_L0S.xml  5 integrity check(s) completed  Summary:  0 error(s)  2 warning(s)  Product Validation Summary:  4 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  5 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.integrity.unreferenced\_member  1 warning.file.not\_referenced\_in\_label  End of Report  Completed execution in 6802 ms  Step 7: weird to use -R pds4. Bundle on a collection. Warnings are reasonable  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:41:59Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/]  Rule Type pds4.bundle  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Allow Unlabeled Files false  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/collection\_tagcams\_hkl0.xml  1 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/cruise\_1/20170815T164303S694\_ncm\_L0S.xml  2 product validation(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/ega/20170922T204112S269\_ncm\_L0S.xml  3 product validation(s) completed  PDS4 Bundle Level Validation Results  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/ega/20170922T204112S269\_ncm\_L0S.xml  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:orex.tagcams:data\_hkl0:20170922t204112s269\_ncm\_l0s.dat::1.0' is not a member of any collection within the given target  1 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/cruise\_1/20170815T164303S694\_ncm\_L0S.xml  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:orex.tagcams:data\_hkl0:20170815t164303s694\_ncm\_l0s.dat::1.0' is not a member of any collection within the given target  2 integrity check(s) completed  PASS: file: /Users/rchen/Desktop/test/testPrep/orex/data\_hkl0/collection\_tagcams\_hkl0.xml  WARNING [warning.integrity.unreferenced\_member] Identifier 'urn:nasa:pds:orex.tagcams:data\_hkl0::1.0' is not a member of any bundle within the given target  3 integrity check(s) completed  Summary:  0 error(s)  3 warning(s)  Product Validation Summary:  3 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  3 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  3 warning.integrity.unreferenced\_member  End of Report  Completed execution in 6839 ms  Step 8:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:52:59Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/twins\_raw\_0015\_01.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  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 [error.table.field\_value\_data\_type\_mismatch] 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[.ffffff]Z'  ERROR [error.table.field\_value\_data\_type\_mismatch] 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  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  2 error.table.field\_value\_data\_type\_mismatch  End of Report  Completed execution in 4442 ms  Step 9: standard good message because -D disallowed checking previous step’s data  Step 10:  64c64  < <local\_identifier\_reference>Image\_Cube\_Object</local\_identifier\_reference>  ---  > <local\_identifier\_reference>Image\_Cube\_Object\_TYPO</local\_identifier\_reference>  134c134  < <elements>945</elements>  ---  > <elements>9945</elements>  Step 11: standard good message  Step 12:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T06:59:19Z  Parameters:  Targets [file: /Users/rchen/Desktop/test/testPrep/7f90b.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file: /Users/rchen/Desktop/test/testPrep/7f90b.xml  ERROR [error.label.schema] line 12, 110: cvc-id.1: There is no ID/IDREF binding for IDREF 'Image\_Cube\_Object\_TYPO'.  ERROR [error.label.schematron] line 63, 43: Display Dictionary: In the pds:Local\_Internal\_Reference class, the value of the pds:local\_identifier\_reference must match the value of the pds:local\_identifer of an Array class or sub-class within the File\_Area.  ERROR [error.label.local\_identifier\_not\_found] line 64: Referenced Local Identifier 'Image\_Cube\_Object\_TYPO' does not exist in any of the local\_identifier attributes in the label.  Begin Content Validation: file: /Users/rchen/Desktop/test/testPrep/7f90.img  FATAL\_ERROR [error.array.bad\_file\_read] array 1: Error occurred while reading data file: Error occurred while trying to read data at location (1, 335, 4771): null  End Content Validation: file: /Users/rchen/Desktop/test/testPrep/7f90.img  1 product validation(s) completed  Summary:  4 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  1 error.array.bad\_file\_read  1 error.label.local\_identifier\_not\_found  1 error.label.schema  End of Report  Completed execution in 7255 ms  Step 13: the output file actually shows validation errors (irrelevant to this test)  Mon Apr 27 00:02:34 PDT 2020  Mon Apr 27 00:11:04 PDT 2020  Step 14:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T21:00:37Z  Parameters:  Targets [https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/bundle\_gbo.ast.jpl.radar.shape\_models.xml  1 product validation(s) completed  PASS: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/data/a2100\_spin\_state.xml  2 product validation(s) completed  FAIL: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/data/a2100rashalom.xml  Begin Content Validation: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/data/a2100rashalom.obj  ERROR [error.table.records\_mismatch] table 2: Number of records read is not equal to the defined number of records in the label (expected 3440, got 2292).  End Content Validation: https://sbnarchive.psi.edu/pds4/non\_mission/gbo.ast.jpl.radar.shape\_models\_V1\_0/data/a2100rashalom.obj  3 product validation(s) completed  [snip…]  Summary:  13 error(s)  0 warning(s)  Product Validation Summary:  41 product(s) passed  13 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  13 error.table.records\_mismatch  End of Report  Completed execution in 78406 ms  Step 15: standard good message  Step 16: standard good message  Step 17: Build 10b has made extra records an error.  PDS557SAYSSKIPTHISPARTOFDATAFILE  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-27T22:13:28Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/mlascirdr.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/mlascirdr.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/mlascirdr.tab  ERROR [error.table.records\_mismatch] table 1: Number of records read is not equal to the defined number of records in the label (expected 2, got 3).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/mlascirdr.tab  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.table.records\_mismatch  End of Report  Completed execution in 4310 ms  Step 18: Warn that collection.csv contains a dangling LID (nosuchfile.obj )  total 6184  -rw-rw-r-- 1 rchen 1 Apr 20 2019 00ANOTHERDANGLER  total 24  -rw-rw-r-- 1 rchen 1 Apr 20 2019 00DANGLINGFILE  PDS Validate Tool Report  [snip…]  PDS4 Bundle Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/insightcameras/data/collection\_data.xml  WARNING [warning.integrity.member\_not\_found] The member 'urn:nasa:pds:insight\_cameras:data:nosuchfile.obj::1.0' could not be found in any product within the given target.  1 integrity check(s) completed  [snip]  Step 19: Line 1 of .csv is all good values; line 2 is half bad values  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T02:57:59Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/ccb213.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/ccb213.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/ccb213.csv  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 5: Value does not match its data type 'ASCII\_Real': '-15e99.99' does not match the pattern '(\+|-)?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([Ee](\+|-)?[0-9]+)?'  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 6: Value does not match its data type 'ASCII\_Real': 'NaN' does not match the pattern '(\+|-)?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([Ee](\+|-)?[0-9]+)?'  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 7: Value does not match its data type 'ASCII\_Real': -INF is not allowed  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 8: Value does not match its data type 'ASCII\_Real': '+.' does not match the pattern '(\+|-)?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([Ee](\+|-)?[0-9]+)?'  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 9: Value does not match its data type 'ASCII\_Real': '-.' does not match the pattern '(\+|-)?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([Ee](\+|-)?[0-9]+)?'  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/ccb213.csv  1 product validation(s) completed  Summary:  5 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  5 error.table.field\_value\_data\_type\_mismatch  End of Report  Completed execution in 3771 ms  Step 20: Standard good message. 2016-12-31T23:59:60.555555Z ok in label and data  Step 21: Standard good message  …  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T03:13:18Z  [snip…]  End of Report  Completed execution in 23691 ms  Step 22: Standard good message. Small negative IEEE754MSBSingle in data ok  Step 23: Standard good message. Datetime value of 1997-04-06T02:09:36 ok  Step 24: Standard good message. All floats are read ok.  Step 25: Older versions hung. (this test works faster with quick failures)  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T03:19:21Z  Parameters:  Targets [https://atmos.nmsu.edu/PDS/data/PDS4/MAVEN/iuvs\_calibrated\_bundle/calibration/centroid/2018/01]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation off  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: https://atmos.nmsu.edu/PDS/data/PDS4/MAVEN/iuvs\_calibrated\_bundle/calibration/centroid/2018/01/mvn\_iuv\_l1b\_centroid-orbit06470-fuv\_20180127T053800.xml  Begin Fragment: http://pds.nasa.gov/pds4/disp/v1  ERROR [error.label.schema] line 10, 5: The element type "meta" must be terminated by the matching end-tag "</meta>".  End Fragment: http://pds.nasa.gov/pds4/disp/v1  1 product validation(s) completed  [snip…]  Summary:  1806 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1806 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1806 error.label.schema  End of Report  Completed execution in 1045722 ms  Step 26: Standard good message.  Step 27: I think complaining about insufficient digit is correct  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T03:22:31Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/ccb214.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/ccb214.xml  ERROR [error.label.schematron] line 100, 26: If a validation\_format is present, its value must be equal to the value in field\_format  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/ccb214.tab  ERROR [error.table.field\_value\_format\_precision\_mismatch] table 1, record 9, field 2: The number of digits to the right of the decimal point in the value '2.409219' does not equal the precision set in the defined field format (expected 7, got 6).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/ccb214.tab  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  1 error.table.field\_value\_format\_precision\_mismatch  End of Report  Completed execution in 3975 ms |
| Comments |  |
| Date of Testing |  |
| Test Personnel |  |

|  |  |
| --- | --- |
| Test Case ID | VAL.7 |
| Test Steps | 1. cd /home/rchen/test/testPrep 2. validate -t val15.xml #VAL#15 3. validate -t val87.xml # edit val87.catalog to point to local files 4. validate -C val87.catalog -t val87.xml #VAL#87 VAL#71 5. validate -C val87.catalog val87.xml #VAL#72 6. validate -c val84.cfg #VAL#84 VAL#74 7. validate -t val28.xml 8. validate --add-context-products val28.json -t val28.xml #VAL#28 9. validate -t val28.xml --skip-context-validation #VAL#47 10. validate -R pds4.bundle -t val30 >& v.out #VAL#29 VAL#30 VAL#39 11. validate -t val30/bundle\_\_insight\_ifg\_mars\_1.0.xml -f #VAL#23 12. validate -t val30/bundle\_\_insight\_ifg\_mars\_1.0.xml -m1D00 #VAL#23 13. validate -t val30/bundle\_\_insight\_ifg\_mars\_1.0.xml --no-data-check #VAL#133 14. validate -R pds4.bundle -t val30 --skip-content-validation #VAL#133 VAL#99 15. validate --target-manifest val50.list #VAL#50. Edit val50.lst if paths changed 16. diff val15.xml val62.xml 17. validate -t val62.xml #VAL#62 VAL#90 18. diff val9a.xml val9b.xml 19. validate -t val9a.xml 20. validate -t val9b.xml # VAL#9 VAL#170 21. validate -t val33/data/frd.xml -x val33/dicts/\*.xsd -S val33/dicts/\*sch 22. validate -t val33/data/frd.xml -C val33/dicts/catalog\_psa1101.xml #VAL#33 23. diff val28.json val107.json #VAL#107 24. validate -v1 --add-context-products val28.json -t val28.xml 25. validate -v1 --add-context-products val107.json -t val28.xml #VAL#28 26. echo $JAVA\_HOME #VAL#37. Add spaces appropriately 27. sudo mv /Library/Java/JavaVirtualMachines "/Library/Java/Java Virtual Machines" 28. validate -V #this should fail 29. setenv JAVA\_HOME "/Library/Java/Java Virtual Machines/jdk-12.0.1.jdk/Contents/Home" 30. validate -V #show validate handles spaces in path 31. sudo mv /Library/Java/Java\ Virtual\ Machines /Library/Java/JavaVirtualMachines; setenv JAVA\_HOME "/Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home" 32. validate -t val55.xml # Note: error message “WARNING: An illegal reflective access operation has occurred” never appears. #VAL#55 VAL#95 |
| Test Results | SKIP too many steps  Step 2: in 10a, standard good message. Eventually, error for incorrect name  Step 3:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T04:59:37Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val87.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val87.xml  ERROR [error.label.schematron] line 76, 31: The attribute insight:product\_type must be equal to one of the following values 'ARK', 'ARM', 'ARO', 'BAY', 'CLM', 'CLR', 'DDD', 'DDL', 'DDS', 'DEM', 'DFF', 'DFL', 'DFS', 'DSE', 'DSG', 'DSL', 'DSP', 'DSR', 'DSS', 'Dataless-SEED', 'EDR', 'EJP', 'ERP', 'GUH', 'GUS', 'GeoCSV', 'IEF', 'IEP', 'ILC', 'ILM', 'ILP', 'ILT', 'IOF', 'IOI', 'ION', 'LANDER\_COORD', 'LIN', 'MAR', 'MDS', 'MSK', 'MXY', 'Mini-SEED', 'RAD', 'RAD-calibrated', 'RAD-derived', 'RAD-raw', 'RAF', 'RAS', 'RDM', 'RDR', 'RIE', 'RIF', 'RNE', 'RNF', 'RNG', 'RNM', 'RNO', 'RNR', 'ROTATION\_PARAMETERS', 'RSM', 'RUH', 'RUS', 'SHD', 'SHO', 'SLO', 'SLP', 'SMG', 'SMO', 'SNO', 'SNT', 'STATIL-calibrated', 'STATIL-raw', 'StationXML', 'TAU', 'TDS', 'TEM-A-calibrated', 'TEM-P-calibrated', 'TEM-calibrated', 'TEM-raw', 'TFH', 'TFS', 'TFW', 'TLM-raw', 'TNF', 'TRO', 'UIH', 'UIS', 'UIW', 'UUF', 'UUU', 'UVF', 'UVO', 'UVP', 'UVS', 'UVT', 'UVW', 'VVF', 'VVV', 'WEA', 'WSH', 'WSS', 'WWF', 'WWW', 'XXF', 'XXX', 'XYE', 'XYF', 'XYM', 'XYO', 'XYR', 'XYZ', 'YYF', 'YYY', 'ZIH', 'ZIS', 'ZIW', 'ZZF', 'ZZZ'.  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.schematron  End of Report  Completed execution in 5159 ms  Step 4: standard good message  Step 5: prevent -C from greediness  gov.nasa.pds.validate.commandline.options.InvalidOptionException: No files specified for validation. Check your paths and use -t flag to explicitly denote the set of target data.  Completed execution in 871 ms  Step 6: standard good message. specify schema and schematron via config file  Step 7: the .xml references a non-existent LID  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T05:23:18Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val28.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val28.xml  ERROR [error.label.context\_ref\_not\_found] line 60: 'Context product not found: urn:nasa:pds:context:target:asteroid.testme  1 product validation(s) completed  Summary  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.label.context\_ref\_not\_found  End of Report  Completed execution in 4376 ms  Step 8: the .json “defines” the non-existent LID. The WARNING is deliberate  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T05:25:19Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val28.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Non Registered Contexts File val28.json  Product Level Validation Results  PASS: gov.nasa.pds.validate.ValidateLauncher  WARNING [warning.product\_not\_registered] Non-registered context products should only be used during archive development. All context products must be registered for a valid, released archive bundle.  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val28.xml  2 product validation(s) completed  Summary:  0 error(s)  1 warning(s)  Product Validation Summary:  2 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.product\_not\_registered  End of Report  Completed execution in 4298 ms  Step 9: Standard good message, i.e. no check for error.label.context\_ref\_not\_found  Step 10: v1.22.3 needed 17+ minutes for the 6.4GB bundle. v1.15.0 needed 51.  Steps 11-13: flags -f, -m --no-check-data deprecated (note: checksum warnings valid)  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:04:50Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val30/bundle\_\_insight\_ifg\_mars\_1.0.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/bundle\_\_insight\_ifg\_mars\_1.0.xml  1 product validation(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  1 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  NOTE: The following flags have been deprecated. These options will no longer be supported after December 20, 2021.  Update execution as soon as possible to avoid issues. Contact pds\_operator@jpl.nasa.gov if you have issues.  --force (-f)--model-version (-m) flags have been deprecated.  The default behavior of the Validate Tool validates against the schemas and  schematrons specified in a label.  Please use -x and/or -S flag(s) to validate with the core PDS or user-specified  schema and schematron.  --no-check-data flag has been deprecated and replaced by --skip-content-validation to avoid confusion in naming of other flags. Please change software execution to use the new flag to avoid any issues.  Completed execution in 3906 ms  Step 14: --skip-content-validation works. 1+ minutes to execute  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:43:01Z  [snip…]  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/data-ifg-calibrated/ifg\_cal\_SOL0041\_20190107T090652\_20190108T094626\_pt2Hz\_v01.xml  585 integrity check(s) completed  Summary:  179 error(s)  2 warning(s)  Product Validation Summary:  485 product(s) passed  98 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  581 check(s) passed  4 check(s) failed  0 check(s) skipped  Message Types:  98 error.label.checksum\_mismatch  78 error.integrity.missing\_parent\_prefix  2 error.file.name\_has\_invalid\_characters  1 error.table.records\_mismatch  2 warning.file.not\_referenced\_in\_label  End of Report  Completed execution in 84515 ms  Step 15:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:51:00Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val30/browse/ifg\_cal\_SOL0014\_20181211T021721\_20181211T155105\_pt2Hz\_v01.xml, file:/Users/rchen/Desktop/test/testPrep/val30/document/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/browse/ifg\_cal\_SOL0014\_20181211T021721\_20181211T155105\_pt2Hz\_v01.xml  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/document/PolymonialFits.xml  2 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/document/InSight\_IFG\_Data\_Calibration\_Description.xml  3 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/document/Insight\_IFG\_SIS.v1.1.xml  4 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val30/document/collection\_document\_1.0.xml  5 product validation(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  5 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  Completed execution in 5732 ms  Step 16:  32c32  < <name>A Non-Shouting Name</name> <!-- RChen: error per val15; should be INSIGHT as of 2019.10 -->  ---  > <name>INSIGHT</name> <!-- RChen: as of 20191020-->  35c35  < <lid\_reference>urn:nasa:pds:context:investigation:mission.insight</lid\_reference>  ---  > <lid\_reference>urn:nasa:pds:context:investigation:mission.fakefake</lid\_reference> <!--RChen: #val90-->  45c45  < <lid\_reference>urn:nasa:pds:context:instrument\_host:spacecraft.insight</lid\_reference>  ---  > <lid\_reference>urn:nasa:pds:context:instrument\_host:spacecraft.fake</lid\_reference>  Step 17: The ERRORs are correct. v1.14.0 would not have caught them  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:54:43Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val62.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val62.xml  ERROR [error.label.context\_ref\_not\_found] line 35: 'Context product not found: urn:nasa:pds:context:investigation:mission.fakefake  ERROR [error.label.context\_ref\_not\_found] line 45: 'Context product not found: urn:nasa:pds:context:instrument\_host:spacecraft.fake  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  2 error.label.context\_ref\_not\_found  End of Report  Completed execution in 4527 ms  Step 18:  70c70  < <Table\_Character> <!-- val9: content validation should PASS on blank int -->  ---  > <Table\_Delimited> <!-- val9: content validation should FAIL on blank int -->  72a73  > <parsing\_standard\_id>PDS DSV 1</parsing\_standard\_id>  75c76,77  < <Record\_Character>  ---  > <field\_delimiter>Comma</field\_delimiter>  > <Record\_Delimited>  78,79c80  < <record\_length unit="byte">33</record\_length>  < <Field\_Character>  ---  > <Field\_Delimited>  82d82  < <field\_location unit="byte">1</field\_location>  84d83  < <field\_length unit="byte">17</field\_length>  86,87c85,86  < </Field\_Character>  < <Field\_Character>  ---  > </Field\_Delimited>  > <Field\_Delimited>  90d88  < <field\_location unit="byte">19</field\_location>  92d89  < <field\_length unit="byte">13</field\_length>  94,96c91,93  < </Field\_Character>  < </Record\_Character>  < </Table\_Character>  ---  > </Field\_Delimited>  > </Record\_Delimited>  > </Table\_Delimited>  Step 19: Error on last data line is correct  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T06:57:39Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val9a.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val9a.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val9.tab  ERROR [error.table.record\_length\_mismatch] table 1, record 5: Record does not equal the defined record length (expected 33, got 20).  ERROR [error.table.bad\_field\_read] table 1, record 5, field 2: Error while getting field value: offset 18, count 13, length 20  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val9.tab  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.table.record\_length\_mismatch  1 error.table.bad\_field\_read  End of Report  Completed execution in 4669 ms  Step 20: record 2 has int of spaces, bad for Table\_Delimited. Validate fails correctly  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:01:23Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val9b.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val9b.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val9.tab  ERROR [error.table.field\_value\_data\_type\_mismatch] table 1, record 2, field 2: Value does not match its data type 'ASCII\_Integer': ' ' does not match the pattern '[+-]?\d+'  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val9.tab  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.table.field\_value\_data\_type\_mismatch  End of Report  Completed execution in 4397 ms  Step 21:  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:02:40Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val33/data/frd.xml]  User Specified Schemas [file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PDS\_1B00.xsd, file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PSA\_1101.xsd, file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PSA\_EM16\_FREND\_1100.xsd]  User Specified Schematrons [file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PDS\_1B00.sch, file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PSA\_1101.sch, file:/Users/rchen/Desktop/test/testPrep/val33/dicts/PDS4\_PSA\_EM16\_FREND\_1100.sch]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val33/data/frd.xml  ERROR [error.label.schema] line 979, 27: cvc-complex-type.2.4.a: Invalid content was found starting with element '{"http://pds.nasa.gov/pds4/pds/v1":fField\_Character}'. One of '{"http://pds.nasa.gov/pds4/pds/v1":Field\_Character, "http://pds.nasa.gov/pds4/pds/v1":Group\_Field\_Character}' is expected.  ERROR [error.label.schematron] line 18, 24: The value of the attribute logical\_identifier must only contain lower-case letters  ERROR [error.label.schematron] line 931, 25: The number of Field\_Character elements (4) does not match the number found in the 'fields' attribute (5).  ERROR [error.label.context\_ref\_not\_found] line 57: 'Context product not found: urn:esa:psa:context:investigation:mission.em16  ERROR [error.label.context\_ref\_not\_found] line 70: 'Context product not found: urn:esa:psa:context:instrument\_host:spacecraft.tgo  ERROR [error.label.context\_ref\_not\_found] line 80: 'Context product not found: urn:esa:psa:context:instrument:frend.tgo  1 product validation(s) completed  Summary:  6 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  3 error.label.context\_ref\_not\_found  2 error.label.schematron  1 error.label.schema  End of Report  Completed execution in 3804 ms  Step 22: validate -C warns error.catalog.unresolvable\_resource instead of quitting  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:09:17Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val33/data/frd.xml]  User Specified Catalogs [val33/dicts/catalog\_psa1101.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val33/data/frd.xml  ERROR [error.label.schema] line 979, 27: cvc-complex-type.2.4.a: Invalid content was found starting with element '{"http://pds.nasa.gov/pds4/pds/v1":fField\_Character}'. One of '{"http://pds.nasa.gov/pds4/pds/v1":Field\_Character, "http://pds.nasa.gov/pds4/pds/v1":Group\_Field\_Character}' is expected.  WARNING [error.catalog.unresolvable\_resource] SystemId is not set in resource. Most likely related to other XML validation ERROR.  WARNING [error.catalog.unresolvable\_resource] SystemId is not set in resource. Most likely related to other XML validation ERROR.  ERROR [error.label.schematron] line 18, 24: The value of the attribute logical\_identifier must only contain lower-case letters  ERROR [error.label.schematron] line 931, 25: The number of Field\_Character elements (4) does not match the number found in the 'fields' attribute (5).  ERROR [error.label.context\_ref\_not\_found] line 57: 'Context product not found: urn:esa:psa:context:investigation:mission.em16  ERROR [error.label.context\_ref\_not\_found] line 70: 'Context product not found: urn:esa:psa:context:instrument\_host:spacecraft.tgo  ERROR [error.label.context\_ref\_not\_found] line 80: 'Context product not found: urn:esa:psa:context:instrument:frend.tgo  1 product validation(s) completed  Summary:  6 error(s)  2 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  3 error.label.context\_ref\_not\_found  2 error.label.schematron  2 error.catalog.unresolvable\_resource  1 error.label.schema  End of Report  Completed execution in 3777 ms  Step 23: handle multiple values for type  8c8,9  < "ASTEROID"  ---  > "ASTEROID",  > "Planet"  Step 24: 10a disabled checking of <type> of references, but -v1 shows it  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:12:04Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val28.xml]  Severity Level INFO  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Non Registered Contexts File val28.json  Product Level Validation Results  PASS: gov.nasa.pds.validate.ValidateLauncher  WARNING [warning.product\_not\_registered] Non-registered context products should only be used during archive development. All context products must be registered for a valid, released archive bundle.  1 product validation(s) completed  PASS: file:/Users/rchen/Desktop/test/testPrep/val28.xml  INFO [info.label.context\_ref\_found] line 33: Context product found: 'urn:nasa:pds:context:investigation:mission.cassini-huygens'  INFO [info.label.context\_ref\_mismatch] line 33: Context reference name mismatch. Value: 'Cassini' Expected one of: '[CASSINI-HUYGENS]'  INFO [info.label.context\_ref\_found] line 43: Context product found: 'urn:nasa:pds:context:instrument:cirs.co'  INFO [info.label.context\_ref\_mismatch] line 43: Context reference name mismatch. Value: 'cocirs' Expected one of: '[COMPOSITE INFRARED SPECTROMETER]'  INFO [info.label.context\_ref\_found] line 51: Context product found: 'urn:nasa:pds:context:instrument\_host:spacecraft.co'  INFO [info.label.context\_ref\_case\_mismatch] line 51: Context reference name case mismatch. Value: 'Cassini Orbiter' Expected one of: '[CASSINI ORBITER]'  INFO [info.label.context\_ref\_found] line 60: Context product found: 'urn:nasa:pds:context:target:asteroid.testme'  INFO [info.label.context\_ref\_mismatch] line 60: Context reference name mismatch. Value: 'Saturn' Expected one of: '[not a real asteroid]'  INFO [info.label.context\_ref\_mismatch] line 60: Context reference type mismatch. Value: 'Planet' Expected one of: '[ASTEROID]'  2 product validation(s) completed  Summary:  0 error(s)  1 warning(s)  Product Validation Summary:  2 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.product\_not\_registered  4 info.label.context\_ref\_mismatch  4 info.label.context\_ref\_found  1 info.label.context\_ref\_case\_mismatch  End of Report  Completed execution in 4432 ms  Step 25: One fewer info.label.context\_ref\_mismatch than previous step  [snip….]  PASS: file:/Users/rchen/Desktop/test/testPrep/val28.xml  INFO [info.label.context\_ref\_found] line 33: Context product found: 'urn:nasa:pds:context:investigation:mission.cassini-huygens'  INFO [info.label.context\_ref\_mismatch] line 33: Context reference name mismatch. Value: 'Cassini' Expected one of: '[CASSINI-HUYGENS]'  INFO [info.label.context\_ref\_found] line 43: Context product found: 'urn:nasa:pds:context:instrument:cirs.co'  INFO [info.label.context\_ref\_mismatch] line 43: Context reference name mismatch. Value: 'cocirs' Expected one of: '[COMPOSITE INFRARED SPECTROMETER]'  INFO [info.label.context\_ref\_found] line 51: Context product found: 'urn:nasa:pds:context:instrument\_host:spacecraft.co'  INFO [info.label.context\_ref\_case\_mismatch] line 51: Context reference name case mismatch. Value: 'Cassini Orbiter' Expected one of: '[CASSINI ORBITER]'  INFO [info.label.context\_ref\_found] line 60: Context product found: 'urn:nasa:pds:context:target:asteroid.testme'  INFO [info.label.context\_ref\_mismatch] line 60: Context reference name mismatch. Value: 'Saturn' Expected one of: '[not a real asteroid]'  2 product validation(s) completed  Summary:  0 error(s)  1 warning(s)  Product Validation Summary:  2 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 warning.product\_not\_registered  4 info.label.context\_ref\_found  3 info.label.context\_ref\_mismatch  1 info.label.context\_ref\_case\_mismatch  End of Report  Completed execution in 3851 ms  Step 28:  /PDS4tools/validate/bin/validate: line 66: /Library/Java/JavaVirtualMachines/jdk-12.0.1.jdk/Contents/Home/bin/java: No such file or directory  Step 30:  gov.nasa.pds:validate  Version 1.22.3  Release Date: 2020-04-17 18:16:03  Copyright 2019, by the California Institute of Technology ("Caltech").  All rights reserved.  Step 32: One iteration of validate was not catching these 4 errors.  PDS Validate Tool Report  Configuration:  Version 1.22.3  Date 2020-04-28T07:27:24Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/testPrep/val55.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/testPrep/val55.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/testPrep/val55.tab  ERROR [error.table.record\_length\_mismatch] table 1, record 1: Record length exceeds the max defined record length (expected 59, got 156).  ERROR [error.table.record\_length\_mismatch] table 1, record 2: Record length exceeds the max defined record length (expected 59, got 185).  ERROR [error.table.record\_length\_mismatch] table 1, record 3: Record length exceeds the max defined record length (expected 59, got 190).  ERROR [error.table.record\_length\_mismatch] table 1, record 4: Record length exceeds the max defined record length (expected 59, got 175).  End Content Validation: file:/Users/rchen/Desktop/test/testPrep/val55.tab  1 product validation(s) completed  Summary:  4 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  4 error.table.record\_length\_mismatch  End of Report  Completed execution in 3863 ms |
| Comments |  |
| Date of Testing |  |
| Test Personnel |  |

|  |  |
| --- | --- |
| Test Case ID | VAL.8 |
| Test Steps | 1. cd /home/rchen/test/testPrep 2. validate -t val56char.xml # VAL#56 3. validate -t val56bin.xml 4. validate --skip-content-validation -t val182.xml #VAL#175 VAL#182 VAL#183 5. validate --skip-content-validation -t val56char.xml #for VAL#135 6. validate -t val63.xml #VAL#63 7. validate -t val29 #also VAL#123 VAL#180 8. validate -t ../contextPDS3 #VAL#124 VAL#126 9. validate -t val217/d\*.xml val217/[ab]\*.xml # VAL#149 10. validate -t val217/\*.xml #VAL#208 needs d\*.xml to validate last 11. diff val178.xml val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml 12. validate -t val178.xml; validate -D -t val178.xml; validate -t val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml; validate -D -t val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml #VAL#178 13. validate --spot-check-data 54 -t val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml # VAL#165 14. validate -t val201.xml # VAL#201 15. validate -t val118 # VAL#118 16. validate -h # VAL#145 17. validate-bundle -n 1 -t /home/rchen/test/bundleLID/bundle\_1.xml -r validate\_.txt # VAL#194. Same as VAL.3 step 4 plus -r option 18. tail validate\_.txt; rm -r validate\_\* "{}.log" |
| Test Results | Step 2: validate catches overlapping fields  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T18:46:19Z  Parameters:  Targets [file:/home/rchen/test/testPrep/val56char.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/testPrep/val56char.xml  Begin Content Validation: file:/home/rchen/test/testPrep/val56char.tab  ERROR [error.table.field\_value\_overlap] table 1, record 1, field 2: The field is overlapping with the next field. Current field ends at 34. Next field starts at 21  ERROR [error.table.field\_value\_overlap] table 1, record 2, field 2: The field is overlapping with the next field. Current field ends at 34. Next field starts at 21  End Content Validation: file:/home/rchen/test/testPrep/val56char.tab  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  2 error.table.field\_value\_overlap  End of Report  Completed execution in 11529 ms  Step 3:  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T18:48:05Z  Parameters:  Targets [file:/home/rchen/test/testPrep/val56bin.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/testPrep/val56bin.xml  Begin Content Validation: file:/home/rchen/test/testPrep/val56bin.dat  ERROR [error.table.field\_value\_overlap] table 1, record 1, field 5: The field is overlapping with the next field. Current field ends at 38. Next field starts at 37  ERROR [error.table.field\_value\_overlap] table 1, record 2, field 5: The field is overlapping with the next field. Current field ends at 38. Next field starts at 37  End Content Validation: file:/home/rchen/test/testPrep/val56bin.dat  1 product validation(s) completed  Summary:  2 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  2 error.table.field\_value\_overlap  End of Report  Completed execution in 11342 ms  Step 4: Standard good message. Validate 1.17.5 would check data anyway  Step 5: Standard good message. u:n:p:c:telescope:\* wasn’t in validate’s json input  Step 6: validate v1.17.5 allowed this, but validate#63 wanted it to be an error. Meh  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T21:00:50Z  Parameters:  Targets [file:/home/rchen/test/testPrep/val63.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/testPrep/val63.xml  Begin Content Validation: file:/home/rchen/test/testPrep/val63.tab  ERROR [error.table.bad\_file\_read] table 1: ERROR: GroupFieldCharacter attribute group\_length is larger than size of contained fields: 32>20.  End Content Validation: file:/home/rchen/test/testPrep/val63.tab  1 product validation(s) completed  Summary:  1 error(s)  0 warning(s)  Product Validation Summary:  0 product(s) passed  1 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  1 error.table.bad\_file\_read  End of Report  Completed execution in 11343 ms  Step 7: val29: improve bundle performance, v1.15.0 took 269 seconds; val123: <1sec/100MB, big file is 673MB, so more like 1sec/20MB; val180: all threads completed even though 1 took much longer.  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T21:01:56Z  Parameters:  Targets [file:/home/rchen/test/testPrep/val29/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/home/rchen/test/testPrep/val29/bundle\_em16\_tgo\_nmd.xml  1 product validation(s) completed  PASS: file:/home/rchen/test/testPrep/val29/data\_pp/collection\_data\_partially\_processed.xml  2 product validation(s) completed  PASS: file:/home/rchen/test/testPrep/val29/data\_pp/nmd\_par\_sc\_uvis\_20200309T124104-20200309T143040-29-10231-1.xml  3 product validation(s) completed  PASS: file:/home/rchen/test/testPrep/val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.xml  4 product validation(s) completed  PASS: file:/home/rchen/test/testPrep/val29/data\_raw/collection\_data\_raw.xml  5 product validation(s) completed  PASS: file:/home/rchen/test/testPrep/val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124054-20200309T131745-27-10231-1.xml  6 product validation(s) completed  PASS: file:/home/rchen/test/testPrep/val29/data\_raw/nmd\_raw\_sc\_uvis\_20200309T124104-20200309T143040-29-10231-1.xml  7 product validation(s) completed  Summary:  0 error(s)  0 warning(s)  Product Validation Summary:  7 product(s) passed  0 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  End of Report  Completed execution in 83015 ms  Step 8: speed of validation without content validation here: 27302files/747seconds  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T21:05:56Z  Parameters:  Targets [file:/home/rchen/test/contextPDS3/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  PASS: file:/home/rchen/test/contextPDS3/Product\_Bundle\_1.0.xml  1 product validation(s) completed  [snip…]  PASS: file:/home/rchen/test/contextPDS3/personnel/Product/guest\_IALEXEEV\_1.0.xml  27302 product validation(s) completed  Summary:  39 error(s)  0 warning(s)  Product Validation Summary:  27289 product(s) passed  13 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  26 error.table.field\_value\_data\_type\_mismatch  8 error.label.duplicate\_identifier  2 error.table.fields\_mismatch  2 error.label.schema  1 error.table.records\_mismatch  End of Report  Completed execution in 1343346 ms  Step 9: Every 3 files is 1 short, 1 good, 1 long, so val#149 wants 30 fails, 15 passes,  PDS Validate Tool Report  Configuration:  Version 1.22.4  Date 2020-05-07T21:42:31Z  Parameters:  Targets [file:/home/rchen/test/testPrep/val217/delanc2.xml, file:/home/rchen/test/testPrep/val217/delanc3.xml, file:/home/rchen/test/testPrep/val217/delanc4.xml, file:/home/rchen/test/testPrep/val217/delbro2.xml, file:/home/rchen/test/testPrep/val217/delbro3.xml, file:/home/rchen/test/testPrep/val217/delbro4.xml, file:/home/rchen/test/testPrep/val217/delinv2.xml, file:/home/rchen/test/testPrep/val217/delinv3.xml, file:/home/rchen/test/testPrep/val217/delinv4.xml, file:/home/rchen/test/testPrep/val217/delmet2.xml, file:/home/rchen/test/testPrep/val217/delmet3.xml, file:/home/rchen/test/testPrep/val217/delmet4.xml, file:/home/rchen/test/testPrep/val217/delobs2.xml, file:/home/rchen/test/testPrep/val217/delobs3.xml, file:/home/rchen/test/testPrep/val217/delobs4.xml, file:/home/rchen/test/testPrep/val217/delsup2.xml, file:/home/rchen/test/testPrep/val217/delsup3.xml, file:/home/rchen/test/testPrep/val217/delsup4.xml, file:/home/rchen/test/testPrep/val217/ascanc2.xml, file:/home/rchen/test/testPrep/val217/ascanc3.xml, file:/home/rchen/test/testPrep/val217/ascanc4.xml, file:/home/rchen/test/testPrep/val217/ascbro2.xml, file:/home/rchen/test/testPrep/val217/ascbro3.xml, file:/home/rchen/test/testPrep/val217/ascbro4.xml, file:/home/rchen/test/testPrep/val217/ascmet2.xml, file:/home/rchen/test/testPrep/val217/ascmet3.xml, file:/home/rchen/test/testPrep/val217/ascmet4.xml, file:/home/rchen/test/testPrep/val217/ascobs2.xml, file:/home/rchen/test/testPrep/val217/ascobs3.xml, file:/home/rchen/test/testPrep/val217/ascobs4.xml, file:/home/rchen/test/testPrep/val217/ascsup2.xml, file:/home/rchen/test/testPrep/val217/ascsup3.xml, file:/home/rchen/test/testPrep/val217/ascsup4.xml, file:/home/rchen/test/testPrep/val217/binanc2.xml, file:/home/rchen/test/testPrep/val217/binanc3.xml, file:/home/rchen/test/testPrep/val217/binanc4.xml, file:/home/rchen/test/testPrep/val217/binbro2.xml, file:/home/rchen/test/testPrep/val217/binbro3.xml, file:/home/rchen/test/testPrep/val217/binbro4.xml, file:/home/rchen/test/testPrep/val217/binobs2.xml, file:/home/rchen/test/testPrep/val217/binobs3.xml, file:/home/rchen/test/testPrep/val217/binobs4.xml, file:/home/rchen/test/testPrep/val217/binsup2.xml, file:/home/rchen/test/testPrep/val217/binsup3.xml, file:/home/rchen/test/testPrep/val217/binsup4.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/testPrep/val217/delanc2.xml  Begin Content Validation: file:/home/rchen/test/testPrep/val217/del.csv  ERROR [error.table.records\_mismatch] table 1: Number of records read is not equal to the defined number of records in the label (expected 2, got 3).  End Content Validation: file:/home/rchen/test/testPrep/val217/del.csv  1 product validation(s) completed  PASS: file:/home/rchen/test/testPrep/val217/delanc3.xml  2 product validation(s) completed  FAIL: file:/home/rchen/test/testPrep/val217/delanc4.xml  Begin Content Validation: file:/home/rchen/test/testPrep/val217/del.csv  ERROR [error.table.records\_mismatch] table 1: Number of records read is not equal to the defined number of records in the label (expected 4, got 3).  End Content Validation: file:/home/rchen/test/testPrep/val217/del.csv  3 product validation(s) completed  [snip...]  Summary:  20 error(s)  0 warning(s)  Product Validation Summary:  25 product(s) passed  20 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  20 error.table.records\_mismatch  End of Report  Completed execution in 34450 ms  Step 10: should be the same as the previous step, but val#208 shows an extra error  [snip…]  FAIL: file:/home/rchen/test/testPrep/val217/delsup4.xml  ERROR [error.validation.internal\_error] Error executing validationTask: java.lang.NullPointerException  Begin Schema: https://pds.nasa.gov/pds4/rings/v1/PDS4\_RINGS\_1D00\_1900.xsd  ERROR [error.label.schema] line 1059, 78: src-resolve: Cannot resolve the name 'pds:Units\_of\_Gmass' to a(n) 'type definition' component.  ERROR [error.label.schema] line 1059, 78: src-resolve: Cannot resolve the name 'pds:Units\_of\_Gmass' to a(n) 'simpleType definition' component.  ERROR [error.label.schema] line 167, 74: src-resolve: Cannot resolve the name 'pds:local\_identifier' to a(n) 'element declaration' component.  ERROR [error.label.schema] line 183, 78: src-resolve: Cannot resolve the name 'pds:local\_identifier' to a(n) 'element declaration' component.  [snip…]  Step 11: the two products have equal width, widely different length  85c85  < <file\_name>val178.tab</file\_name>  ---  > <file\_name>nmd\_raw\_sc\_uvis\_20200309T124117-20200309T143020-28-10231-1.tab</file\_name>  89,90c89,90  < <records>2</records>  < <!--md5\_checksum>cb9114bd570918b94c612243796a8ea9</md5\_checksum-->  ---  > <records>4266</records>  > <md5\_checksum>cb9114bd570918b94c612243796a8ea9</md5\_checksum>  96c96  < <records>2</records>  ---  > <records>4266</records>  Step 12: val178: Improve performance with content validation off  Short file normal, with -D: 12401 ms, 10898 ms  Long file normal, with -D: 75571 ms, 14660 ms  Step 13: all standard good message  Step 14: this fails correctly. Val#201 inhibited checking  Step 15: VAL#118: at bottom, 385 errors = 228+74+74+8+1, 2 warnings  PDS Validate Tool Report Configuration:  Version 1.22.4  Date 2020-05-07T22:08:20Z  Parameters:  Targets [file:/home/rchen/test/testPrep/val118/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /home/rchen/test/validate-1.22.4/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/home/rchen/test/testPrep/val118/bundle\_voroelden.xml  ERROR [error.label.schema] line 44, 37: cvc-complex-type.2.4.a: Invalid content was found starting with element '{"http://pds.nasa.gov/pds4/pds/v1":Internal\_Reference}'. One of '{"http://pds.nasa.gov/pds4/pds/v1":External\_Reference}' is expected.  ERROR [error.label.schema] line 56, 37: cvc-complex-type.2.4.a: Invalid content was found starting with element '{"http://pds.nasa.gov/pds4/pds/v1":Internal\_Reference}'. One of '{"http://pds.nasa.gov/pds4/pds/v1":External\_Reference}' is expected.  ERROR [error.label.context\_ref\_not\_found] line 53: 'Context product not found: urn:nasa:pds:context:instrument:vo1.rss  ERROR [error.label.context\_ref\_not\_found] line 57: 'Context product not found: urn:nasa:pds:context:instrument:vo2.rss  1 product validation(s) completed  PASS: file:/home/rchen/test/testPrep/val118/context/collection\_context\_voroelden.xml  WARNING [warning.label.missing\_schematron\_spec] No schematrons specified in the label  WARNING [warning.label.missing\_schematron\_spec] No schematrons specified in the label  2 product validation(s) completed  [snip…]  FAIL: file:/home/rchen/test/testPrep/val118/data/voroelden\_1\_508\_a\_v01\_r00.xml  ERROR [error.label.context\_ref\_not\_found] line 30: 'Context product not found: urn:nasa:pds:context:investigation:mission.TBD  ERROR [error.label.context\_ref\_not\_found] line 40: 'Context product not found: urn:nasa:pds:context:instrument\_host:spacecraft.TBD  ERROR [error.label.context\_ref\_not\_found] line 48: 'Context product not found: urn:nasa:pds:context:instrument:TBD.TBD  Begin Content Validation: file:/home/rchen/test/testPrep/val118/data/voroelden\_1\_508\_a\_v01\_r00.tab  ERROR [error.table.records\_mismatch] table 2: Number of records read is not equal to the defined number of records in the label (expected 163, got 162).  End Content Validation: file:/home/rchen/test/testPrep/val118/data/voroelden\_1\_508\_a\_v01\_r00.tab  79 product validation(s) completed  Summary:  385 error(s)  2 warning(s)  Product Validation Summary:  1 product(s) passed  78 product(s) failed  0 product(s) skipped  Referential Integrity Check Summary:  0 check(s) passed  0 check(s) failed  0 check(s) skipped  Message Types:  228 error.label.context\_ref\_not\_found  74 error.table.records\_mismatch  74 error.table.missing\_CRLF  8 error.label.schema  1 error.label.duplicate\_identifier  2 warning.label.missing\_schematron\_spec  End of Report  Completed execution in 40183 ms  Step 16: val145: good description of --spot-check-data  usage: validate <target> <options>  [snip…]  --spot-check-data <num> Tool only checks every nth record or  line and skips the rest during data  content validation.  [snip…]  Step 17: Similar output to VAL.3 step 4  Step 18:  >>>>>>>>>>>>>>> OVERALL SUMMARY:  Summary:  12 error(s)  4 warnings(s)  End of Report  <<<<<<<<<<<<<<< |
| Comments | Minor bugs:  Step 9: [val#149](https://github.com/NASA-PDS-Incubator/validate/issues/149) is not fixed  Step 10: [val#208](https://github.com/NASA-PDS-Incubator/validate/issues/208) is not fixed |
| Date of Testing | 2020.05.08 |
| Test Personnel | Richard Chen |

### Testing of Unchanged Modules

These tests ensure complete verification and validation of level 5 requirements of the unchanged modules. Each sequence was run during the last build for which its module was modified.

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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 /Users/rchen/Desktop/test 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 1.16.0  Date Sat, Nov 09 2019 at 10:17:26 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:/Users/rchen/Desktop/test/testCatalog/CORPWS\_0180/WBFULLDS.CAT  SAME: file:/Users/rchen/Desktop/test/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 1.16.0  Date Sat, Nov 09 2019 at 10:18:18 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: /Users/rchen/Desktop/test*/*testCatalog/CORPWSrawX.CAT  line 56: Element "DATA\_SET\_DESC" has different value than source.  Source: line 56 of file: /Users/rchen/Desktop/test*/*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 | 2019.11.09 |
| 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 1.16.0  Date Sat, Nov 09 2019 at 10:19:09 AM  Parameters:  Mode validate  Target file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/  Directory Recursion true  Dictionary File(s) [testCatalog/pdsdd.full]  Severity Level WARNING  Aliasing Enabled false  Validation Details:  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/dsmap.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/dsmap\_polar.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/gdrds.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/inst.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/insthost.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/mission.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/person.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/prpds.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/rdrds.cat  PASS: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/ref.cat  FAIL: file: /Users/rchen/Desktop/test/testCatalog/LRO\_diviner/voldesc.cat  Begin Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/REF.CAT  WARNING The label fragment, "REF.CAT", should not contain a PDS\_VERSION\_ID.  End Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/REF.CAT  Begin Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/INSTHOST.CAT  WARNING The label fragment, "INSTHOST.CAT", should not contain a PDS\_VERSION\_ID.  End Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/INSTHOST.CAT  Begin Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/PERSON.CAT  WARNING The label fragment, "PERSON.CAT", should not contain a PDS\_VERSION\_ID.  End Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/PERSON.CAT  Begin Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/GDRDS.CAT  WARNING The label fragment, "GDRDS.CAT", should not contain a PDS\_VERSION\_ID.  End Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/GDRDS.CAT  Begin Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/INST.CAT  WARNING The label fragment, "INST.CAT", should not contain a PDS\_VERSION\_ID.  End Fragment: file:/Users/rchen/Desktop/test/testCatalog/LRO\_diviner/INST.CAT  Begin Fragment: file:/Users/rchen/Desktop/test/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: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/MISSION.CAT  Referential Integrity Details:  PASS: Data Set  Parent File(s): [gdrds.cat, prpds.cat, rdrds.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: Personnel  Parent File(s): [person.cat]  Begin checking children  End checking children  PASS: Instrument  Parent File(s): [inst.cat]  Begin checking children  End checking children  PASS: Instrument Host  Parent File(s): [insthost.cat]  Begin checking children  End checking childrenNew 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 | 2019.11.09 |
| 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:  $CATALINA\_HOME/bin/shutdown.sh  \rm $CATALINA\_HOME/logs/\*  \rm -f -r /Users/rchen/putRDBhere/registrypds3/  cd /PDS4tools/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;  exit;  mv registrypds?/ /Users/rchen/putRDBhere/  \rm derby.log  $CATALINA\_HOME/bin/startup.sh  setenv REGISTRY\_SERVICE http://localhost:8080/registry-pds3; cd /PDS4tools/registry-service/bin; ./registry-config; unsetenv REGISTRY\_SERVICE  storage-service stop  cd /PDS4tools/storage-service  \rm -r archive/ catalog/ logs/ run/  storage-service start  storage-client --operation --ingestProduct --productName CatalogTest --productStructure Flat --productTypeName CatalogFile --metadataFile "file:///PDS4tools/storage-service/test/test.txt.met" --refs file:///PDS4tools/storage-service/test/test.txt  storage-query --sql -query "SELECT \* FROM CatalogFile WHERE CAS.ProductName == 'CatalogTest'" -outputFormat '$CAS.ProductId' | storage-delete --read  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. New registrations: <http://localhost:8080/registry-ui>, set LID to \*0164\*, Refresh   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 1.16.0  Date Tue, Apr 16 2019 at 12:12:10 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/PERSON.CAT  WARNING: This file is not required to ingest into the registry.  INFO: Successfully delivered a catalog file to the storage service. productID - f4a2d664-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:9a0159a0-7ba7-4faf-8cb8-f980d827becd  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:d4e5dc28-c000-47ac-8cbb-92c034175c7c  INFO: Successfully delivered a catalog file to the storage service. productID - f4cfd9d5-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:f4bedd45-1313-46e3-af0b-8764e0bc9053  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:0f32a92b-71ba-45d5-84b1-ed9253590af5  INFO: Successfully delivered a catalog file to the storage service. productID - f4eed386-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:be1440f6-5c7c-4a56-9106-08352f68d6ee  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:b1cf9cf4-76a1-4fd4-9428-fc0c8983dc19  INFO: Successfully delivered a catalog file to the storage service. productID - f500d4e7-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:3fe52c33-dec9-480c-9760-21eeeab81c4d  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:152e837b-1855-4eb9-8ede-fc9913395d80  INFO: Successfully delivered a catalog file to the storage service. productID - f5159568-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:2916b671-495f-4c3d-acd4-3175483adef4  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 - f523ed49-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:89431528-2816-4074-bf66-7c98fe66b73f  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:9b82eaa2-e89d-454a-8923-61b4b3f12b94  INFO: Successfully delivered a catalog file to the storage service. productID - f53419ea-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:18645e47-f381-4e6c-a570-6689ac68cdff  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:a8824d3d-948b-4ce5-9486-747666df04cf  INFO: Successfully delivered a catalog file to the storage service. productID - f546907b-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:962ccd3a-fa0e-4bab-b514-90f4909b590c  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 - f553d6ec-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:a2b9ca2e-243a-458c-8aa2-128604e9670d  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:47738d0f-b75f-4b19-9868-f9c128a7ffc3  INFO: Successfully delivered a catalog file to the storage service. productID - f5695abd-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:4cbf3fb4-9dd9-4ea0-b2da-70f5a1659fc6  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:3a73db1c-9e78-47de-ba9d-4f0412f70d30  INFO: Successfully delivered a catalog file to the storage service. productID - f57800be-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:b9af684a-a270-4bb1-be43-bc54e34dc81a  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:baff3c1a-ee32-4fbc-aff1-50e1ebe5c372  INFO: Successfully delivered a catalog file to the storage service. productID - f587df3f-6016-11e9-b3b7-0deabf4f5f19  INFO: Successfully ingested a file object. GUID - urn:uuid:46feb165-ec3b-4730-99dc-2babe1b266bc  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\_20190416001211  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=f587df3f-6016-11e9-b3b7-0deabf4f5f19 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, 16 Apr 2019 07:43:33 GMT  <  { [8012 bytes data]  100 14202 100 14202 0 0 39392 0 --:--:-- --:--:-- --:--:-- 39670  \* 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: 101503  < Date: Mon, 15 Oct 2018 21:33:56 GMT  { [8053 bytes data]  100 99k 100 99k 0 0 308k 0 --:--:-- --:--:-- --:--:-- 311k  \* 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 1.16.0  Date Tue, Apr 16 2019 at 12:48:27 AM  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\_20190416004828  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: */Users/rchen/Desktop/test*/testCatalog/MPC\_review/asteroid.cat is missing.  WARNING: */Users/rchen/Desktop/test*/testCatalog/MPC\_review/comet.cat is missing.  WARNING: */Users/rchen/Desktop/test*/testCatalog/MPC\_review/satellite.cat is missing.  Apr16,2019 11:13:11 AM org.apache.oodt.cas.filemgr.datatransfer.LocalDataTransferer setFileManagerUrl  INFO: Local 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 1.16.0  Date Tue, Apr 16 2019 at 12:56:28 AM  Parameters:  Mode ingest  Target file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/  Directory Recursion true  Severity Level WARNING  Report File c6.out  Ingest Details:  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/dsmap.cat  WARNING: This file is not required to ingest into the registry.  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/dsmap\_polar.cat  WARNING: This file is not required to ingest into the registry.  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/gdrds.cat  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/inst.cat  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/insthost.cat  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/mission.cat  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/person.cat  WARNING: This file is not required to ingest into the registry.  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/prpds.cat  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/rdrds.cat  PASS: file: */Users/rchen/Desktop/test*/testCatalog/LRO\_diviner/ref.cat  WARNING: This file is not required to ingest into the registry.  PASS: file: */Users/rchen/Desktop/test*/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\_20190416005628  End of Report  Step 12:  Exception: No mode specified. 'm' flag must be specified. |
| Comments | Results met success criteria. |
| Date of Testing | 2019.04.16 |
| Test Personnel | Richard Chen |

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| Test Case ID | FEED.1 |
| Description | On any web page, add widget that sends help to pds\_operator |
| Requirements | PASS. No specific functional requirement. |
| Success Criteria | Email gets sent |
| Test Steps | 1. cd /*/Users/rchen/Desktop/test*/testFeed 2. To some modifiable web site, upload \* to the remote root 3. Per <https://github.com/NASA-PDS-Incubator/feedback-widget#pds-feedback-widget>, email pds\_operator@jpl.nasa.gov with web site URL 4. In a browser, view /killme.shtml 5. diff killme.shtml killme0.shtml 6. View /killme0.shtml 7. Click “Need Help”. Send a message. Eventually receive email confirmation. 8. diff killme0.shtml killme7.shtml; echo xxx; diff feedback/js/config.js feedback/js/config7.js #[feed7](https://github.com/NASA-PDS-Incubator/feedback-widget/issues/7) 9. View /killme7.shtml |
| Test Results | Step 4:  Step 5:  9a10,17  > <!-- PDS Feedback Widget -->  > <!-- Only add JQuery if you do not already include a library -->  > <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>  > <script src='https://www.google.com/recaptcha/api.js?onload=onloadCallback&render=explicit' async defer></script>  > <link rel="stylesheet" href="/feedback/css/feedback.css" type="text/css" media="screen" />  > <script src="/feedback/js/modernizr-custom.js"></script>  > <script src="/feedback/js/config.js"></script>  > <script src="/feedback/js/feedback.js"></script>  Step 6:  Step 8:  16c16  < <script src="/feedback/js/config.js"></script>  ---  > <script src="/feedback/js/config7.js"></script>  xxx  33c33  < fontSize: "16", // default: 16  ---  > fontSize: "77", // default: 16  Step 9: Note how large the widget’s font is |
| Comments | Results met success criteria.  Build 10a closes [PDS-839](https://osr.jpl.nasa.gov/jira/browse/PDS-839). |
| Date of Testing | 2019.11.07 |
| Test Personnel | Richard Chen |

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| Test Case ID | GEN.1 |
| Description | Generate a PDS4 label from a PDS3 label. |
| 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 | 1. cd /Users/rchen/Desktop/test/testGen 2. generate -p genImgJNC.LBL -t genImgJNC.vm 3. diff -w genImgJNC.xml genImgJNC.baseline.xml 4. rm velocity.log genImgJNC.xml   Create /PDS4tools/generateFMT – same as generate except it allows PDS3’s ^STRUCTURE   1. diff /PDS4tools/generate /PDS4tools/generateFMT 2. generateFMT -o .. -p genTabRSS.LBL -t genTabRSS.vm #PDS-113 #PDS-398 3. diff -w genTabRSS.baseline.xml ../genTabRSS.xml 4. rm velocity.log ../genTabRSS.xml |
| Test Results | Step 2:  New PDS4 Label: */Users/rchen/Desktop/test*/testPrep/gendoc.xml  Step 3: Differences only in spacing  Step 5:  50c50  < ${JAVA\_CMD} -jar ${GENERATE\_JAR} "$@"  ---  > ${JAVA\_CMD} -jar -Dpds.generate.parser.type=product-tools ${GENERATE\_JAR} "$@"  Step 7 shows no differences |
| Comments | Generate converts most constructs in a PDS3 label into a PDS4 label.  Results met success criteria.  10a verified the closing of [PDS-113](https://oodt.jpl.nasa.gov/jira/browse/PDS-113) (carets for detached labels and format files), and [PDS-398](https://oodt.jpl.nasa.gov/jira/browse/PDS-398) (`generate -o .` write output to a different directory). |
| Date of Testing | 2019.11.02 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVTOLD.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 | This test extends AAFUNCTION.\* to clear some issues   1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd /Users/rchen/Desktop/test; harvest -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvest-policy-master.xml /Users/rchen/Desktop/test/contextPDS4onlyPHX -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: Note the 26 files processed. Each has a unique LID and gets registered  PDS Harvest Tool Log  Version Version 2.5.1  Time Tue, Oct 29 2019 at 12:10:28 AM  Target(s) [/Users/rchen/Desktop/test/contextPDS4onlyPHX]  File Inclusions [\*.xml]  Config directory /PDS4tools/harvest/conf/search/defaults  Output directory /PDS4tools/solr-docs  Transaction ID 2a706a43-ca37-4450-8c5a-ab2a3997653c  Summary:  26 of 26 file(s) processed, 0 other file(s) skipped  0 error(s), 0 warning(s)  Product Labels:  26 Successfully registered  0 Failed to register  Search Service Solr Documents:  26 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  26 Successfully registered  0 Failed to register  Product Types Handled:  5 Product\_Collection  20 Product\_Context  1 Product\_Bundle  Registry Package Id: 2a706a43-ca37-4450-8c5a-ab2a3997653c  End of Log  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 | 2019.10.29 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVTOLD.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. |
| Test Steps | 1. Clean database as described in RESETREGISTRY in Section 3.1 2. cd */Users/rchen/Desktop/test/*; mkdir x; mv contextPDS4onlyPHX/\* x 3. harvest -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvest-policy-master.xml */Users/rchen/Desktop/test*/contextPDS4onlyPHX -l log.txt -e "\*.xml" -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 /Users/rchen/Desktop/test; mv x/\* contextPDS4onlyPHX; rmdir x 3. In browser, after at most 120 seconds, note unchanging Num Records. <http://localhost:8080/registry-ui/> 4. harvest-ctrl --url http://localhost:9001/xmlrpc --operation --stop 5. tail -27 log.txt 6. On http://localhost:8080/registry-ui/#Packages, delete Harvest-Package\_\*; if verification desired, check GUID against Registration Package GUID in log.txt 7. Check Num Records is original value: http://localhost:8080/registry-ui |
| Test Results | Step 5: Yes  Step 7: Same Num Records as in HVTOLD.1, assuming both started with 0 records  Step 8:  Crawl Daemon: [http://localhost:9001/xmlrpc]: shutdown successful  Step 9:  Summary:  26 of 26 file(s) processed, 0 other file(s) skipped  0 error(s), 0 warning(s)  Product Labels:  26 Successfully registered  0 Failed to register  Search Service Solr Documents:  26 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  26 Successfully registered  0 Failed to register  Product Types Handled:  5 Product\_Collection  20 Product\_Context  1 Product\_Bundle  Registry Package Id: ed626426-8979-43fb-939b-996abf5466cd  End of Log |
| Comments | Build 10a opened [harv19](https://github.jpl.nasa.gov/PDSEN/harvest/issues/19), harvest-ctrl failure. |
| Date of Testing | 2019.10.29 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVTOLD.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 /Users/rchen/Desktop/test 3. date; harvest -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvest-policy-master.xml /Users/rchen/Desktop/test/contextPDS3 -l log.txt -e "\*.xml"; date 4. Check for harvested files. <http://localhost:8080/registry-ui/>   Help SRCH.3 show Archive information   1. harvest -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvest-policy-master.xml /Users/rchen/Desktop/test/testHarv/archivePDS3 -l h.out; grep -v "SUCCESS\|INFO" h.out |
| Test Results | Step 3: Time to harvest: 214 minutes in build 5b, 25 minutes in 9b  Tue Oct 29 14:12:53 PDT 2019  Tue Oct 29 15:03:36 PDT 2019  The bottom of h.out:  Summary:  27302 of 27302 file(s) processed, 0 other file(s) skipped  10403 error(s), 8 warning(s)  Product Labels:  27294 Successfully registered  8 Failed to register  Search Service Solr Documents:  16891 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  27294 Successfully registered  0 Failed to register  Product Types Handled:  13 Product\_Collection  199 Product\_Instrument\_Host\_PDS3  4254 Product\_Target\_PDS3  2293 Product\_Data\_Set\_PDS3  7161 Product\_Context  2184 Product\_Attribute\_Definition  626 Product\_Instrument\_PDS3  1 Product\_Bundle  71 Product\_Mission\_PDS3  89 Product\_Class\_Definition  Registry Package Id: 8cba93fe-85c6-4b43-8497-3fdb3309effe  End of Log  Step 5:  \*\*\*\*\*\*\* The optimized code generation is disabled \*\*\*\*\*\*\*\*\*\*\*\*  PDS Harvest Tool Log  Version Version 2.5.2  Time Tue, Oct 29 2019 at 03:32:45 PM  Target(s) [/Users/rchen/Desktop/test/testHarv/archivePDS3]  Config directory /PDS4tools/harvest/conf/search/defaults  Output directory /PDS4tools/solr-docs  Transaction ID fa196d47-2f7d-4a5d-a760-f3d904ddb7f9  Summary:  1 of 1 file(s) processed, 0 other file(s) skipped  0 error(s), 0 warning(s)  Product Labels:  1 Successfully registered  0 Failed to register  Search Service Solr Documents:  1 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  1 Successfully registered  0 Failed to register  Product Types Handled:  1 Product\_Context  Registry Package Id: fa196d47-2f7d-4a5d-a760-f3d904ddb7f9  End of Log |
| Comments | Results met success criteria. |
| Date of Testing | 2019.10.29 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVTOLD.4 |
| 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 -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvestPolicyNoDoc.xml /Users/rchen/Desktop/test/bundle\_geo\_ra -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. Repeat step 2 2. Repeat step 4   Run harvest with config file that accepts Product\_Document   1. harvest -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvest-policy-master.xml /Users/rchen/Desktop/test/bundle\_geo\_ra -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:  \*\*\*\*\*\*\* The optimized code generation is disabled \*\*\*\*\*\*\*\*\*\*\*\*  PDS Harvest Tool Log  Version Version 2.5.2  Time Wed, Oct 30 2019 at 12:57:29 AM  Target(s) [/Users/rchen/Desktop/test/bundle\_geo\_ra]  File Inclusions [\*.xml]  Config directory /PDS4tools/harvest/conf/search/defaults  Output directory /PDS4tools/solr-docs  Transaction ID 459d736c-c333-448a-b6b9-6be410241af5  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/readme.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/ra\_dataset.xml] 'Product\_Document' is not an object type found in the policy file.  SKIP: [/Users/rchen/Desktop/test/bundle\_geo\_ra/context/mission.phoenix\_1.1.xml] Not a primary member.  Summary:  168 of 168 file(s) processed, 5 other file(s) skipped  0 error(s), 0 warning(s)  Product Labels:  168 Successfully registered  0 Failed to register  Search Service Solr Documents:  168 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  168 Successfully registered  0 Failed to register  Product Types Handled:  1 Product\_XML\_Schema  5 Product\_Collection  120 Product\_Observational  38 Product\_Browse  3 Product\_Context  1 Product\_Bundle  Registry Package Id: 459d736c-c333-448a-b6b9-6be410241af5  End of Log  Step 6: Note that numFound is the same, i.e. no additional registrations  Step 8: Many WARNINGs had “Product already exists”  \*\*\*\*\*\*\* The optimized code generation is disabled \*\*\*\*\*\*\*\*\*\*\*\*  PDS Harvest Tool Log  Version Version 2.5.2  Time Wed, Oct 30 2019 at 01:43:29 PM  Target(s) [/Users/rchen/Desktop/test/bundle\_geo\_ra]  File Inclusions [\*.xml]  Config directory /PDS4tools/harvest/conf/search/defaults  Output directory /PDS4tools/solr-docs  Transaction ID 8c463338-36b5-49e3-b0cf-d1c9e620b479  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 posted document of XPaths of entire label to the xpath Solr collection  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/activity\_table\_desc.xml] Successfully generated document file for urn:nasa:pds:phx\_ra:document:activity\_table\_desc::1.0.  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 posted document of XPaths of entire label to the xpath Solr collection  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/readme.xml] Successfully generated document file for urn:nasa:pds:phx\_ra:document:readme::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::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml] Successfully posted document of XPaths of entire label to the xpath Solr collection  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_instrument.xml] Successfully generated document file for urn:nasa:pds:phx\_ra:document:ra\_instrument::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::1.0  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_dataset.xml] Successfully posted document of XPaths of entire label to the xpath Solr collection  SUCCESS: [/Users/rchen/Desktop/test/bundle\_geo\_ra/document/ra\_dataset.xml] Successfully generated document file for urn:nasa:pds:phx\_ra:document:ra\_dataset::1.0.  SKIP: [/Users/rchen/Desktop/test/bundle\_geo\_ra/context/mission.phoenix\_1.1.xml] Not a primary member.  Summary:  172 of 172 file(s) processed, 1 other file(s) skipped  0 error(s), 168 warning(s)  Product Labels:  4 Successfully registered  168 Failed to register  Search Service Solr Documents:  4 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  4 Successfully registered  0 Failed to register  Product Types Handled:  4 Product\_Document  Registry Package Id: 8c463338-36b5-49e3-b0cf-d1c9e620b479  End of Log  Step 9: 4 Product Documents  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 | 2019.10.30 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVTOLD.5 |
| 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 /Users/rchen/Desktop/test 4. harvest -pds3 -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c testHarv/harvestDawnNondata.xml #harv22 5. <http://localhost:8080/registry-ui/> shows such files. 6. harvest -pds3 -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c testHarv/harvestDawnNondata.xml testHarv/DAWNGRAND1B/DATA #harv23 7. <http://localhost:8080/registry-ui/> includes labelled files. |
| Test Results | Step 2: “There is no data to display”  Step 4:  java.lang.NullPointerException  at gov.nasa.pds.harvest.search.crawler.metadata.extractor.Pds3MetExtractorConfig.(Pds3MetExtractorConfig.java:44)  at gov.nasa.pds.harvest.search.HarvesterSearch.harvest(HarvesterSearch.java:229)  at gov.nasa.pds.harvest.search.HarvestSearchLauncher.doHarvesting(HarvestSearchLauncher.java:497)  at gov.nasa.pds.harvest.search.HarvestSearchLauncher.processMain(HarvestSearchLauncher.java:601)  at gov.nasa.pds.harvest.search.HarvestSearchLauncher.main(HarvestSearchLauncher.java:620)  null  \*\*\*\*\*\*\* The optimized code generation is disabled \*\*\*\*\*\*\*\*\*\*\*\*  PDS Harvest Tool Log  Version Version 2.5.2  Time Tue, Oct 29 2019 at 04:02:18 PM  Target(s) [/Users/rchen/Desktop/test/testHarv/DAWNGRAND1B/DATA]  Target Type PDS3  File Inclusions [\*.LBL]  Severity Level INFO  Config directory /PDS4tools/harvest/conf/search/defaults  Output directory /PDS4tools/solr-docs  Transaction ID d5bb8905-4cd3-473c-a8ca-a4fcde971495  INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1  Summary:  0 of 0 file(s) processed, 0 other file(s) skipped  0 error(s), 0 warning(s)  Product Labels:  0 Successfully registered  0 Failed to register  Search Service Solr Documents:  0 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  0 Successfully registered  0 Failed to register  Product Types Handled:  Registry Package Id: N/  Step 5:  \*\*\*\*\*\*\* The optimized code generation is disabled \*\*\*\*\*\*\*\*\*\*\*\*  PDS Harvest Tool Log  Version Version 2.5.2  Time Tue, Oct 29 2019 at 05:34:05 PM  Target(s) [testHarv/DAWNGRAND1B/DATA]  Severity Level INFO  Config directory /PDS4tools/harvest/conf/search/defaults  Output directory /PDS4tools/solr-docs  Transaction ID 6177ddb2-46fa-4789-abdb-8eddc46d9b50  INFO: XML extractor set to the following default namespace: http://pds.nasa.gov/pds4/pds/v1  INFO: [testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] Begin processing.  ERROR: [testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.LBL] line 1: Content is not allowed in prolog.  INFO: [testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.TAB] Begin processing.  ERROR: [testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-EPG.TAB] line 1: Content is not allowed in prolog.  INFO: [testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.TAB] Begin processing.  ERROR: [testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.TAB] line 1: Content is not allowed in prolog.  INFO: [testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] Begin processing.  ERROR: [testHarv/DAWNGRAND1B/DATA/GRD-L1B-151023-151216\_160816-CTL-BGOC.LBL] line 1: Content is not allowed in prolog.  Summary:  0 of 4 file(s) processed, 0 other file(s) skipped  4 error(s), 0 warning(s)  Product Labels:  0 Successfully registered  0 Failed to register  Search Service Solr Documents:  0 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  0 Successfully registered  0 Failed to register  Product Types Handled:  Registry Package Id: N/A  End of Log |
| Comments | Build10a opened [harv22](https://github.jpl.nasa.gov/PDSEN/harvest/issues/22), failure to harvest PDS3 files.  Build10a opened [harv23](https://github.jpl.nasa.gov/PDSEN/harvest/issues/23), bad error message “Content is not allowed in prolog.” |
| Date of Testing | 2019.10.30 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVTOLD.6 |
| 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 /Users/rchen/Desktop/test 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 -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvest388.xml /Users/rchen/Desktop/test/bundleLID/data\_test/scraping -e "\*.xml" | grep -v INFO: |
| Test Results | Step 3:  31c31  < <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”.  \*\*\*\*\*\*\* The optimized code generation is disabled \*\*\*\*\*\*\*\*\*\*\*\*  PDS Harvest Tool Log  Version Version 2.5.2  Time Wed, Oct 30 2019 at 04:32:23 PM  Target(s) [/Users/rchen/Desktop/test/bundleLID/data\_test/scraping]  File Inclusions [\*.xml]  Severity Level INFO  Config directory /PDS4tools/harvest/conf/search/defaults  Output directory /PDS4tools/solr-docs  Transaction ID 1949304c-cd7a-4d0d-b121-334e88d94585  ERROR: [/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping.xml] Lid cannot end in '.xml': urn:nasa:pds:phx\_ra:data\_test:pit\_test.xml  SUCCESS: [/Users/rchen/Desktop/test/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: [/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml] Successfully posted document of XPaths of entire label to the xpath Solr collection  SUCCESS: [/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic1.xml] Successfully generated document file for urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1::1.0.  SUCCESS: [/Users/rchen/Desktop/test/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: [/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml] Successfully posted document of XPaths of entire label to the xpath Solr collection  SUCCESS: [/Users/rchen/Desktop/test/bundleLID/data\_test/scraping/pit\_test\_scraping\_pic2.xml] Successfully generated document file for urn:nasa:pds:phx\_ra:data\_test:pit\_test\_scraping\_pic1::1.2.  Summary:  3 of 3 file(s) processed, 0 other file(s) skipped  1 error(s), 0 warning(s)  Product Labels:  2 Successfully registered  0 Failed to register  Search Service Solr Documents:  2 Successfully created  0 Failed to get created  XPath Solr Documents (Quick Look Only, Ignore Failed Ingestions):  2 Successfully registered  0 Failed to register  Product Types Handled:  2 Product\_Browse  Registry Package Id: 1949304c-cd7a-4d0d-b121-334e88d94585  End of Log |
| Comments | Results met success criteria. |
| Date of Testing | 2019.10.30 |
| Test Personnel | Richard Chen |

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| Test Case ID | HVTOLD.7 |
| 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 */Users/rchen/Desktop/test*   harvestAtmV1/ and …V2/ show NAIF’s versioning of a growing ATM dataset.   1. diff harvestAtmV1/checksum.bad harvestAtmV2/checksum.works 2. validate -M harvestAtmV1/checksum.bad -t harvestAtmV1 3. harvest -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvestAtmV1/harvestpolicy.xml */Users/rchen/Desktop/test*/harvestAtmV1 -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 -M harvestAtmV2/checksum.works -t harvestAtmV2 6. harvest -o /PDS4tools -C /PDS4tools/harvest/conf/search/defaults -c harvestAtmV2/harvestpolicy.xml */Users/rchen/Desktop/test*/harvestAtmV2 -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: bad checksum is deliberate. Ignore errors about harvestpolicy.xml  PDS Validate Tool Report  Configuration:  Version 1.17.5  Date 2019-10-31T06:56:05Z  Parameters:  Targets [file:/Users/rchen/Desktop/test/harvestAtmV1/]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  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  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/test/harvestAtmV1/bundle\_v001.xml  ERROR [error.label.missing\_checksum] No checksum found in the manifest for 'file:/Users/rchen/Desktop/test/harvestAtmV1/bundle\_v001.xml'  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/harvestpolicy.xml  WARNING [warning.label.missing\_schematron\_spec] No schematrons specified in the label  WARNING [warning.label.missing\_schematron\_spec] No schematrons specified in the label  FAIL: file:/Users/rchen/Desktop/test/harvestAtmV1/data\_mer2/collection\_v001.xml  ERROR [error.label.checksum\_mismatch] 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/pancam\_instrument\_description.xml  PASS: file:/Users/rchen/Desktop/test/harvestAtmV1/document/collection\_document\_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  FAIL: file:/Users/rchen/Desktop/test/harvestAtmV1/miscellaneous/collection\_misc\_inventory.xml  Begin Content Validation: file:/Users/rchen/Desktop/test/harvestAtmV1/miscellaneous/collection\_misc\_inventory.csv  ERROR [error.inventory\_table.invalid\_member\_status] table 1, record 1: Invalid member status p. It should begin with 'P' or 'S'.  ERROR [error.inventory\_table.invalid\_member\_status] table 1, record 2: Invalid member status p. It should begin with 'P' or 'S'.  End Content Validation: file:/Users/rchen/Desktop/test/harvestAtmV1/miscellaneous/collection\_misc\_inventory.csv  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  Validation complete.  Summary:  4 error(s)  2 warning(s)  Message Types:  2 error.inventory\_table.invalid\_member\_status  1 error.label.missing\_checksum  1 error.label.checksum\_mismatch  2 warning.label.missing\_schematron\_spec  End of Report  Step 5: The interesting parts of h1.out:  PDS Harvest Tool Log  Version Version 1.15.0  Time Tue, Jun 11 2019 at 04:57:14 PM  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\_20190611165714  Registration Package GUID urn:uuid:be49bac2-463d-488d-9491-57d5aeb7e054  Checksum Manifest File /Users/rchen/Desktop/test/harvestAtmV1/checksum.bad  Manifest File Base Path /Users/rchen/Desktop/test/harvestAtmV1  INFO: 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\_mer2/sol0013/a0013\_p236402\_01\_01v04.xml] Successfully registered association to 'urn:uuid:375dce16-faf2-4e99-89df-4165af149f62'  INFO: [/Users/rchen/Desktop/test/harvestAtmV1/data\_mer2/sol0013/a0013\_p236402\_01\_01v04.xml] Association has the following GUID: urn:uuid:cabbe446-aa8d-434d-89b2-cd4b4fc2ff0f  Summary:  10 of 10 file(s) processed, 1 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  2 Product\_Observational  1 Product\_Document  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 8: The interesting parts of h2.out:  PDS Harvest Tool Log  Version Version 1.15.0  Time Thu, Oct 18 2018 at 02:47:58 PM  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\_20181018144758  Registration Package GUID urn:uuid:a668bbcd-3a4d-48bc-a80e-6628bd3748b6  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 |
| Comments | Results met success criteria. |
| Date of Testing | 2019.10.31 |
| Test Personnel | Richard Chen |

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| Test Case ID | REGOLD.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 */Users/rchen/Desktop/test* 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. Attempt to register a bad input file: curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1a.xml http://localhost:8080/registry-pds3/extrinsics 2. Repeat step 2 to ensure lid still does not exist. 3. Register a good file: curl -X POST -H "Content-type:application/xml" -v -d @testRegistry/test.REG.1b.xml http://localhost:8080/registry-pds3/extrinsics 4. Repeat step 2 to see the lid 5. At <http://localhost:8080/registry-ui/>, select “Product 1234 v1”, Delete, OK 6. 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: Wed, 12 Jun 2019 18:16:25 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: Wed, 12 Jun 2019 18:17:06 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 | 2019.06.12 |
| Test Personnel | Richard Chen |

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| Test Case ID | REGOLD.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: Wed, 12 Jun 2019 18:19:34 GMT  \* Connection #0 to host localhost left intact  linkREG.1toREG.2a  Step 3:  Step 4:  \* Trying ::1...  \* 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: Wed, 12 Jun 2019 18:21:43 GMT  \* Connection #0 to host localhost left intact  Step 5: same as step 1 |
| Comments | Results met success criteria. |
| Date of Testing | 2019.06.12 |
| Test Personnel | Richard Chen |

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| Test Case ID | REGOLD.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: Wed, 12 Jun 2019 19:37:47 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="2019-06-11T16:47:37.667-07:00" associations="71" extrinsics="0" services="0" classificationSchemes="2" classificationNodes="69" packages="4" events="79" registryVersion="1.14.0"/> |
| Comments | Results met success criteria. |
| Date of Testing | 2019.06.12 |
| Test Personnel | Richard Chen |

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| Test Case ID | REGOLD.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:00bf22b3-bef4-4446-9e29-39d898495167  < Content-Type: application/xml  < Transfer-Encoding: chunked  < Date: Wed, 12 Jun 2019 19:39:00 GMT  \* Connection #0 to host localhost left intact  urn:uuid:00bf22b3-bef4-4446-9e29-39d898495167  Step 2: |
| Comments | Results met success criteria. |
| Date of Testing | 2019.06.12 |
| Test Personnel | Richard Chen |

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| Test Case ID | REGOLD.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:db656929-e27b-42eb-8226-6e79d2ccf9f4  < Content-Type: application/xml  < Transfer-Encoding: chunked  < Date: Wed, 12 Jun 2019 20:43:11 GMT  \* Connection #0 to host localhost left intact  urn:uuid:db656929-e27b-42eb-8226-6e79d2ccf9f4  Step 3: Note that versionName=1.0 even though input file had no versionId attribute |
| Comments | Results met success criteria. |
| Date of Testing | 2019.06.12 |
| Test Personnel | Richard Chen |

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| Test Case ID | REGOLD.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/> Under “LID”, enter “testing.REG.2a”. Click “Refresh” 2. Select row, set “Status” to “Approved”, hit “Update Status” 3. Select row, set “Status” to “Deprecated”, hit “Update Status” 4. 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: Wed, 24 Oct 2018 00:41:28 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 - - [23/Oct/2018:17:41:08 -0700] "GET /registry-pds3/extrinsics/logicals/testing.REG.2a HTTP/1.1" 404 68*  *0:0:0:0:0:0:0:1 - - [23/Oct/2018:17:41:43 -0700] "GET /registry-pds3/extrinsics/logicals/testing.REG.2a HTTP/1.1" 200 776*  *127.0.0.1 - - [23/Oct/2018:17:46:30 -0700] "GET /registry-pds3/extrinsics?queryOp=AND&lid=testing.REG.2a&start=1&sort=guid&rows=20 HTTP/1.1" 200 799*  *127.0.0.1 - - [23/Oct/2018:17:46:30 -0700] "GET /registry-pds3/extrinsics?queryOp=AND&lid=testing.REG.2a&start=1&sort=guid&rows=1 HTTP/1.1" 200 799*  *127.0.0.1 - - [23/Oct/2018:17:46:32 -0700] "GET /registry-pds3/extrinsics?queryOp=AND&lid=testing.REG.2a&start=1&sort=guid&rows=20 HTTP/1.1" 200 799*  *127.0.0.1 - - [23/Oct/2018:17:46:32 -0700] "GET /registry-pds3/extrinsics?queryOp=AND&lid=testing.REG.2a&start=1&sort=guid&rows=1 HTTP/1.1" 200 799*  *127.0.0.1 - - [23/Oct/2018:17:46:47 -0700] "GET /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 720*  *127.0.0.1 - - [23/Oct/2018:17:46:47 -0700] "POST /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 -*  *127.0.0.1 - - [23/Oct/2018:17:46:47 -0700] "GET /registry-pds3/extrinsics?queryOp=AND&lid=testing.REG.2a&start=1&sort=guid&rows=20 HTTP/1.1" 200 798*  *127.0.0.1 - - [23/Oct/2018:17:46:47 -0700] "GET /registry-pds3/extrinsics?queryOp=AND&lid=testing.REG.2a&start=1&sort=guid&rows=1 HTTP/1.1" 200 798*  *127.0.0.1 - - [23/Oct/2018:17:47:03 -0700] "GET /registry-pds3/extrinsics?queryOp=AND&lid=testing.REG.2a&start=1&sort=guid&rows=20&status=Deprecated HTTP/1.1" 200 162*  *127.0.0.1 - - [23/Oct/2018:17:47:21 -0700] "GET /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 719*  *127.0.0.1 - - [23/Oct/2018:17:47:21 -0700] "POST /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 -*  *127.0.0.1 - - [23/Oct/2018:17:47:29 -0700] "GET /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 721*  *127.0.0.1 - - [23/Oct/2018:17:47:29 -0700] "POST /registry-pds3/extrinsics/testing.REG.2a.v1.0 HTTP/1.1" 200 -* |
| Comments | Results met success criteria.  HVTOLD.7 already pointed out PDS-888, registry-ui’s inability to change status |
| Date of Testing | 2019.06.12 |
| Test Personnel | Richard Chen |

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| Test Case ID | REGOLD.7\* 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 | REGOLD.8\* 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 | REGOLD.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 */Users/rchen/Desktop/test*/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=0.015 median=0.010 stdDev=0.00748 sum=0.0  <?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="171" name="last-name"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot id="172" name="cannotPossibleBeAnExistingSlot"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot id="173" name="phone"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot><ns2:slot id="174" 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="176" name="last-name"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot id="177" name="cannotPossibleBeAnExistingSlot"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot id="178" name="phone"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot><ns2:slot id="179" 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="181" name="last-name"><ns2:value>Doe</ns2:value></ns2:slot><ns2:slot id="182" name="cannotPossibleBeAnExistingSlot"><ns2:value>cannot possibly be an existing value</ns2:value></ns2:slot><ns2:slot id="183" name="phone"><ns2:value>(818)777-7777</ns2:value><ns2:value>(818)888-8888</ns2:value></ns2:slot><ns2:slot id="184" name="first-name"><ns2:value>John</ns2:value></ns2:slot></ns2:extrinsicObject>  VIEW 3 good. Time(sec): avg=0.012 median=0.012 stdDev=0.00100 sum=0.0  stressTesting.T000000.v1.0 deleted  stressTesting.T000001.v1.0 deleted  stressTesting.T000002.v1.0 deleted  DELETE 3 good. Time(sec): avg=0.011 median=0.011 stdDev=0.00072 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=0.007 median=0.006 stdDev=0.01340 sum=3476.8  VIEW 500000 good. Time(sec): avg=0.006 median=0.005 stdDev=0.01597 sum=3039.8  DELETE 500000 good. Time(sec): avg=0.007 median=0.007 stdDev=0.01100 sum=3702.4 |
| Comments | Results met success criteria. |
| Date of Testing | 2019.06.13 |
| Test Personnel | Richard Chen |

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| Test Case ID | REQ.1 |
| 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/pds4/10.0.0/release/rdd.html |
| Test Results | Documents were available and examined. |
| Comments | Results met success criteria. |
| Date of Testing | 2019.04.12 |
| Test Personnel | Richard Chen |

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| Test Case ID | REQ.2 |
| 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 | 2019.09.16 |
| Test Personnel |  |

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| Test Case ID | REQ.3 |
| 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 1.9.0, Appendix D. |
| Test Results | Creation of a label-template (xml) from the master-schema (xsd). |
| Comments | Results met success criteria |
| Date of Testing | 2019.06.09 |
| Test Personnel | Richard Chen |

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| Test Case ID | REQ.4 |
| 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 VAL.1 but with a URL instead of a local file   1. validate -t 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 VAL.1’s  ......................PDS Validate Tool Report  Configuration:  Version 1.17.5  Date 2019-10-27T07:25:39Z  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]  Data Content Validation on  Product Level Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  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  Validation complete.  Summary:  0 error(s)  0 warning(s))  End of Report |
| Comments | Results met success criteria. |
| Date of Testing | 2019.10.27 |
| Test Personnel | Richard Chen |

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| Test Case ID | REQ.5 |
| 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 |  |
| Date of Testing |  |
| Test Personnel |  |

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| Test Case ID | REQ.6 |
| 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 | 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 | The commercial application Sawmill provides the functionality required. Verification of installation suffice to verify the reporting requirements.  The following gathers nodes’ log files that feed Sawmill:   1. mkdir -p \ /report\_service/logs/backup/rings/rings-apache-metrics /report\_service/logs/final/rings/rings-apache-metrics /report\_service/logs/staging/rings/rings-apache-metrics 2. report-mgr -p -P -f 11/01/2019 -t 11/30/2019 -u -n rings 3. date; ls -lR /report\_service/logs/\*/rings |
| Test Results | Step 2:  Nov 08, 2019 7:46:02 PM gov.nasa.pds.report.ReportManagerLauncher main  INFO: Now running Report Manager  Nov 08, 2019 7:46:02 PM gov.nasa.pds.report.ReportServiceManager readProfiles  INFO: Found 39 profiles  Nov 08, 2019 7:46:02 PM gov.nasa.pds.report.ReportServiceManager readProfiles  INFO: Found 1 profiles that match filters  Nov 08, 2019 7:46:02 PM gov.nasa.pds.report.ReportServiceManager createStagingDirTree  INFO: Creating staging directory tree  Nov 08, 2019 7:46:02 PM gov.nasa.pds.report.logs.PDSLogsManager pullLogFiles  INFO: Now pulling logs using the profile rings-apache-metrics  Nov 08, 2019 7:46:02 PM gov.nasa.pds.report.logs.PDSLogsManager connect  INFO: Connecting to anonymous@https://pds-rings.seti.org/ using gov.nasa.pds.report.logs.pushpull.HttpPull  Nov 08, 2019 7:46:11 PM gov.nasa.pds.report.logs.pushpull.HttpPull pull  WARNING: An error occurred while downloading the file at https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/pds-rings-apache2.2017-02.tar.gz: An error occurred while parsing log name pds-rings-apache2.2017-02.tar.gz for date filtering: The date of log file pds-rings-apache2.2017-02.tar.gz is not in a recognized format  Nov 08, 2019 7:46:11 PM gov.nasa.pds.report.logs.pushpull.HttpPull pull  WARNING: An error occurred while downloading the file at https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/pds-rings-apache2.2017-03.tar.gz: An error occurred while parsing log name pds-rings-apache2.2017-03.tar.gz for date filtering: The date of log file pds-rings-apache2.2017-03.tar.gz is not in a recognized format  Nov 08, 2019 7:46:11 PM gov.nasa.pds.report.logs.pushpull.HttpPull downloadFileAtURL  INFO: Transferring: https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/server2-pds-rings-apache2.2019-11-01.tar.gz to /report\_service/logs/staging/rings/rings-apache-metrics  Nov 08, 2019 7:46:17 PM gov.nasa.pds.report.logs.pushpull.HttpPull downloadFileAtURL  INFO: Transferring: https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/server2-pds-rings-apache2.2019-11-02.tar.gz to /report\_service/logs/staging/rings/rings-apache-metrics  Nov 08, 2019 7:46:24 PM gov.nasa.pds.report.logs.pushpull.HttpPull downloadFileAtURL  INFO: Transferring: https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/server2-pds-rings-apache2.2019-11-03.tar.gz to /report\_service/logs/staging/rings/rings-apache-metrics  Nov 08, 2019 7:46:31 PM gov.nasa.pds.report.logs.pushpull.HttpPull downloadFileAtURL  INFO: Transferring: https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/server2-pds-rings-apache2.2019-11-04.tar.gz to /report\_service/logs/staging/rings/rings-apache-metrics  Nov 08, 2019 7:46:41 PM gov.nasa.pds.report.logs.pushpull.HttpPull downloadFileAtURL  INFO: Transferring: https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/server2-pds-rings-apache2.2019-11-05.tar.gz to /report\_service/logs/staging/rings/rings-apache-metrics  Nov 08, 2019 7:46:48 PM gov.nasa.pds.report.logs.pushpull.HttpPull downloadFileAtURL  INFO: Transferring: https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/server2-pds-rings-apache2.2019-11-06.tar.gz to /report\_service/logs/staging/rings/rings-apache-metrics  Nov 08, 2019 7:47:23 PM gov.nasa.pds.report.logs.pushpull.HttpPull downloadFileAtURL  INFO: Transferring: https://pds-rings.seti.org/met-mhNQwdRPkhJ2-rics/server2-pds-rings-apache2.2019-11-07.tar.gz to /report\_service/logs/staging/rings/rings-apache-metrics  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.ReportServiceManager backupStaging  INFO: Backing up logs in the staging directory  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.ReportServiceManager processLogs  INFO: Processing logs  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.processing.ProcessingManager processLogs  INFO: Processing logs from profile rings-apache-metrics  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.processing.SimpleCommandProcessor processFileList  INFO: Running simple command: dd if="/report\_service/logs/staging/rings/rings-apache-metrics/server2-pds-rings-apache2.2019-11-02.tar.gz" | openssl des3 -d -k FeeFieFoeRings | tar xzvf - -C "/report\_service/logs/processing/rings/rings-apache-metrics/rings\_decrypt" (1/7)  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.processing.SimpleCommandProcessor processFileList  INFO: Running simple command: dd if="/report\_service/logs/staging/rings/rings-apache-metrics/server2-pds-rings-apache2.2019-11-04.tar.gz" | openssl des3 -d -k FeeFieFoeRings | tar xzvf - -C "/report\_service/logs/processing/rings/rings-apache-metrics/rings\_decrypt" (2/7)  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.processing.SimpleCommandProcessor processFileList  INFO: Running simple command: dd if="/report\_service/logs/staging/rings/rings-apache-metrics/server2-pds-rings-apache2.2019-11-06.tar.gz" | openssl des3 -d -k FeeFieFoeRings | tar xzvf - -C "/report\_service/logs/processing/rings/rings-apache-metrics/rings\_decrypt" (3/7)  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.processing.SimpleCommandProcessor processFileList  INFO: Running simple command: dd if="/report\_service/logs/staging/rings/rings-apache-metrics/server2-pds-rings-apache2.2019-11-03.tar.gz" | openssl des3 -d -k FeeFieFoeRings | tar xzvf - -C "/report\_service/logs/processing/rings/rings-apache-metrics/rings\_decrypt" (4/7)  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.processing.SimpleCommandProcessor processFileList  INFO: Running simple command: dd if="/report\_service/logs/staging/rings/rings-apache-metrics/server2-pds-rings-apache2.2019-11-01.tar.gz" | openssl des3 -d -k FeeFieFoeRings | tar xzvf - -C "/report\_service/logs/processing/rings/rings-apache-metrics/rings\_decrypt" (5/7)  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.processing.SimpleCommandProcessor processFileList  INFO: Running simple command: dd if="/report\_service/logs/staging/rings/rings-apache-metrics/server2-pds-rings-apache2.2019-11-05.tar.gz" | openssl des3 -d -k FeeFieFoeRings | tar xzvf - -C "/report\_service/logs/processing/rings/rings-apache-metrics/rings\_decrypt" (6/7)  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.processing.SimpleCommandProcessor processFileList  INFO: Running simple command: dd if="/report\_service/logs/staging/rings/rings-apache-metrics/server2-pds-rings-apache2.2019-11-07.tar.gz" | openssl des3 -d -k FeeFieFoeRings | tar xzvf - -C "/report\_service/logs/processing/rings/rings-apache-metrics/rings\_decrypt" (7/7)  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.ReportServiceManager buildSawmillDB  INFO: Updating Sawmill databases  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.sawmill.PDSSawmillManager updateDatabase  INFO: Updating the rings\_web Sawmill profile  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.ReportServiceManager buildSawmillDB  WARNING: An error occurred while building the Sawmill database for Sawmill profile rings\_web: The given Sawmill home directory does not exist  Nov 08, 2019 7:47:32 PM gov.nasa.pds.report.sawmill.PDSSawmillManager outputCommands  INFO: There are no commands in the queue to output  Step 3:  Fri Nov 8 19:57:08 PST 2019  /report\_service/logs/backup/rings:  total 0  drwxrwxr-x 9 rchen wheel 288 Nov 8 19:47 rings-apache-metrics/  /report\_service/logs/backup/rings/rings-apache-metrics:  total 9744  -rw-rw-r-- 1 rchen wheel 471064 Nov 8 19:46 server2-pds-rings-apache2.2019-11-01.tar.gz  -rw-rw-r-- 1 rchen wheel 440344 Nov 8 19:46 server2-pds-rings-apache2.2019-11-02.tar.gz  -rw-rw-r-- 1 rchen wheel 307224 Nov 8 19:46 server2-pds-rings-apache2.2019-11-03.tar.gz  -rw-rw-r-- 1 rchen wheel 614424 Nov 8 19:46 server2-pds-rings-apache2.2019-11-04.tar.gz  -rw-rw-r-- 1 rchen wheel 522264 Nov 8 19:46 server2-pds-rings-apache2.2019-11-05.tar.gz  -rw-rw-r-- 1 rchen wheel 2170904 Nov 8 19:47 server2-pds-rings-apache2.2019-11-06.tar.gz  -rw-rw-r-- 1 rchen wheel 440344 Nov 8 19:47 server2-pds-rings-apache2.2019-11-07.tar.gz  /report\_service/logs/final/rings:  total 0  drwxrwxr-x 9 rchen wheel 288 Nov 8 19:47 rings-apache-metrics/  /report\_service/logs/final/rings/rings-apache-metrics:  total 220328  -rw-rw-r-- 1 rchen wheel 8312910 Nov 1 23:59 server2-pds-rings-apache2.2019-11-01.log  -rw-rw-r-- 1 rchen wheel 8147127 Nov 3 00:00 server2-pds-rings-apache2.2019-11-02.log  -rw-rw-r-- 1 rchen wheel 4354940 Nov 3 23:59 server2-pds-rings-apache2.2019-11-03.log  -rw-rw-r-- 1 rchen wheel 12220377 Nov 5 00:00 server2-pds-rings-apache2.2019-11-04.log  -rw-rw-r-- 1 rchen wheel 9971487 Nov 5 23:59 server2-pds-rings-apache2.2019-11-05.log  -rw-rw-r-- 1 rchen wheel 62565130 Nov 7 00:00 server2-pds-rings-apache2.2019-11-06.log  -rw-rw-r-- 1 rchen wheel 7218231 Nov 7 23:59 server2-pds-rings-apache2.2019-11-07.log  /report\_service/logs/staging/rings:  total 0  drwxr-xr-x 9 rchen wheel 288 Nov 8 19:47 rings-apache-metrics/  /report\_service/logs/staging/rings/rings-apache-metrics:  total 11936  -rw-rw-r-- 1 rchen wheel 471064 Nov 8 19:46 server2-pds-rings-apache2.2019-11-01.tar.gz  -rw-rw-r-- 1 rchen wheel 440344 Nov 8 19:46 server2-pds-rings-apache2.2019-11-02.tar.gz  -rw-rw-r-- 1 rchen wheel 307224 Nov 8 19:46 server2-pds-rings-apache2.2019-11-03.tar.gz  -rw-rw-r-- 1 rchen wheel 614424 Nov 8 19:46 server2-pds-rings-apache2.2019-11-04.tar.gz  -rw-rw-r-- 1 rchen wheel 522264 Nov 8 19:46 server2-pds-rings-apache2.2019-11-05.tar.gz  -rw-rw-r-- 1 rchen wheel 2170904 Nov 8 19:47 server2-pds-rings-apache2.2019-11-06.tar.gz  -rw-rw-r-- 1 rchen wheel 440344 Nov 8 19:47 server2-pds-rings-apache2.2019-11-07.tar.gz |
| Comments | Results met success criteria. |
| Date of Testing | 2019.11.08 |
| Test Personnel |  |

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| Test Case ID | SRCH.1\* 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 | 2019.04 |
| 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 HVTOLD.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 “Harvest-Package\_\*”, set Status to “Approved”, click “Update Status”. If more than 1, approve 1 at a time. Slow. May fail with an error about cache space. This may take 30 minutes. 4. date; search-core -H */PDS4tools/*search-service/pds -p */PDS4tools/*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:  Step 4:  Mon Jun 10 15:10:59 PDT 2019  Processing config: class.xml  Processing config: dataset.xml  PDS Search Core Run Log  Version Version 1.13.0  Time Mon, Jun 10 2019 at 03:11:00 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:class:class.header  INFO: Completed: urn:nasa:pds:context\_pds3:class:class.software\_information  INFO: Completed: urn:nasa:pds:context\_pds3:class:class.band\_suffix  …  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.5  INFO: Posting: /PDS4tools/search-service/pds/index/solr\_index.xml.2  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, 26 s  -- target.xml: 0 h, 13 m, 9 s  -- context.xml: 5 h, 19 m, 10 s  -- instrumenthost.xml: 0 h, 0 m, 36 s  -- attribute.xml: 0 h, 5 m, 5 s  -- class.xml: 0 h, 0 m, 17 s  -- dataset.xml: 0 h, 16 m, 24 s  -- investigation.xml: 0 h, 0 m, 12 s  ==================================================  Total Processing Time: 5 h, 56 m, 23 s  End of Log  Mon Jun 10 21:08:42 PDT 2019  Step 5:  Step 6: Note that 1) search-ui filters deprecated data sets, e.g. HRD < 16.0, and 2) Archive Information and Search Tools are there thanks to harvest of such information, though those sometimes are missing if not built into the installation package.    Step 7:  0:0:0:0:0:0:0:1 - - [11/Jun/2019:00:13:35 -0700] "GET /search-ui/search.jsp?q=cassini+cda HTTP/1.1" 200 5416  0:0:0:0:0:0:0:1 - - [11/Jun/2019:00:13:35 -0700] "GET /search-service/pds/archive-filter?q=cassini+cda& HTTP/1.1" 200 36707  Step 8: |
| Comments | Results met success criteria. |
| Date of Testing | 2019.06.11 |
| Test Personnel | Richard Chen |

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| Test Case ID | SRCH.4 |
| 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 (<https://pds.nasa.gov/pds4/doc/im/v1/index_1B00.html>) 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: The IM matches dd-search except for the:  Only in dd-search: Binary\_Data\_Type, Data\_Type, USER  Only in the IM: Source\_Product\_External, Source\_Product\_Internal, Term\_Map\_SKOS  Terminological\_Entry\_SKOS  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. |
| 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?  [PDS-615](https://oodt.jpl.nasa.gov/jira/browse/PDS-615), created during testing of 9a, suggests indicating which PDS4 classes are deprecated. |
| Date of Testing | 2019.04.20 |
| 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. HVTOLD.3. If running after HVTOLD.3, first:  search-core -H */PDS4tools/*search-service/pds -p */PDS4tools/*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 |
| Date of Testing | 2019.06.11 |
| 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 HVTOLD.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 | 2019.06.11 |
| Test Personnel | Richard Chen |

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| Test Case ID | SRCH.7 \* 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 | 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. Also, if NASA and ESA each have an entry for the same DATA\_SET\_ID, PDS-438 requested that ds-view return NASA’s. |
| Test Steps | The primary test:   1. https://pds.nasa.gov/ds-view/query?identifier=RO/RL-E/M/A/C-SPICE-6-V1.0&resclass=data.dataset   Show that both ESA and NASA had entries for that DATA\_SET\_ID   1. https://pds.nasa.gov > "DATA SEARCH" > "Keyword Search". Type the same DATA\_SET\_ID as above, i.e. "RO/RL-E/M/A/C-SPICE-6-V1.0". "Search" 2. Select "ROSETTA ORBITER/LANDER SPICE KERNELS V1.0", which has no "(from ESA)" |
| Test Results | Step 1:  Step 2:  Step 3: same as step 1 |
| Comments | Results met success criteria. |
| Date of Testing | 2019.06.11 |
| Test Personnel | Richard Chen |

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| Test Case ID | TPRT.1 \*not run for build 10a |
| 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 | For builds 9a and earlier, HVTOLD.3 ran first with absolute paths as inputs. In 9b, harvest does not use the registry, but catalog -mingest does, but that has no mechanism for specifying paths. This test uses, from CTLG.3   * urn:nasa:pds:context\_pds3:investigation:mission.cassini-huygens * urn:nasa:pds:context\_pds3:volume:volume.corpws\_0180\_\_usa\_nasa\_pds\_corpws\_0xxx:ref.cat   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:volume:volume.corpws\_0180\_\_usa\_nasa\_pds\_corpws\_0xxx:ref.cat" 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:volume:volume.corpws\_0180\_\_usa\_nasa\_pds\_corpws\_0xxx:ref.cat+AND+package+EQ+TGZ" 3. curl -X GET -o x3.zip "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:volume:volume.corpws\_0180\_\_usa\_nasa\_pds\_corpws\_0xxx:ref.cat" 4. Same thing but in a browser, 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:volume:volume.corpws\_0180\_\_usa\_nasa\_pds\_corpws\_0xxx:ref.cat&package=TGZ which somehow creates file products\_pds-package-20190417114526.zip.zip 5. Extract the four into their own directories. 6. diff -r x1 x2 7. diff -r x1 x3 8. diff -r x1 products\_pds-package-<yyyymmddhhmmss> 9. diff x1/MISSION.CAT */Users/rchen/Desktop/test/*testCatalog/CORPWS\_0180/MISSION.CAT 10. Does x1/md5\_checksum.txt have correct checksums for both files? On a mac: openssl md5 x1/\*.CAT; cat x1/md5\_checksums.txt |
| Test Results | Step 1 (Steps 2 and 3 are 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:volume:volume.corpws\_0180\_\_usa\_nasa\_pds\_corpws\_0xxx:ref.cat HTTP/1.1  > Host: localhost:8080  > User-Agent: curl/7.48.0  > Accept: \*/\*  >  < HTTP/1.1 200  < Content-disposition: attachment; filename="products\_pds-package-20190417114033.zip.zip"  < Content-Type: application/zip  < Content-Length: 42106  < Date: Wed, 17 Apr 2019 18:40:33 GMT  <  { [7995 bytes data]  100 42106 100 42106 0 0 94082 0 --:--:-- --:--:-- --:--:-- 94833  \* Connection #0 to host localhost left intact  Step 4: in 9b, the file gets created, but the browser shows nothing  Steps 6-9 show no differences  Step 10: Visually check that the values from the first two lines match the last two  MD5(x1/MISSION.CAT)= 26c45a1436ae9dfa14ac4fbd3366baad  MD5(x1/REF.CAT)= 85454be035f2545377f8e4e12e6e83a2  85454be035f2545377f8e4e12e6e83a2 REF.CAT  26c45a1436ae9dfa14ac4fbd3366baad MISSION.CAT |
| Comments | Results met success criteria. |
| Date of Testing | 2019.04.17 |
| Test Personnel | Richard Chen |

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| Test Case ID | TPRT.2 |
| Description | Request data from transport-ofsn by specifying a path. Transport-ofsn can also transform the requested product. |
| Requirements | PASS L5.TRS.2: The service shall accept requests for download of an individual file.  PASS L5.TRS.3: The service shall transform the requested product(s) or file into the specified format. PASS L5.TRS.4: The service shall package the requested product(s) or file into the specified format.  PASS L5.TRS.6: The service shall transfer the result of a request via HTTP to the calling application. |
| 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  oodt:ofsn/productRoot=*/Users/rchen/Desktop/test*  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 */Users/rchen/Desktop/test*/testTprt/ladee\_ldex.tab 3. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.tab&RT=RAW\_SIZE" 4. ls -ol */Users/rchen/Desktop/test*/testTprt/ladee\_ldex.tab 5. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/ladee\_ldex.tab&RT=MD5" 6. openssl md5 */Users/rchen/Desktop/test*/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 */Users/rchen/Desktop/test*/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 */Users/rchen/Desktop/test*/testTprt/dirLevel1a/dirLevel2 2. curl "http://localhost:8080/transport-ofsn/prod?OFSN=/testTprt/dirLevel1a/&RT=DIRFILELIST" 3. cp */Users/rchen/Desktop/test*/testTprt/dirLevel1a/fileLevel2b.txt */Users/rchen/Desktop/test*/testTprt/dirLevel1a/.ignoreME 4. chmod 777 */Users/rchen/Desktop/test*/testTprt/dirLevel1a/dirLevel2 5. repeat step 37 6. rm */Users/rchen/Desktop/test*/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/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.lbl</OFSN>  <fileSize>28086</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.cdf</OFSN>  <fileSize>230296</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.xml</OFSN>  <fileSize>75445</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.xml</OFSN>  <fileSize>8423</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.csv</OFSN>  <fileSize>2241087</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.xml</OFSN>  <fileSize>22618</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.qub</OFSN>  <fileSize>50339840</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.fits</OFSN>  <fileSize>449280</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1b/tcshrc</OFSN>  <fileSize>29</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2b.txt</OFSN>  <fileSize>307</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2a.txt</OFSN>  <fileSize>72</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/dirLevel2/fileLevel3.txt</OFSN>  <fileSize>1550</fileSize>  </dirEntry>  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/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.lbl</OFSN>  <fileSize>28086</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.cdf</OFSN>  <fileSize>230296</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.xml</OFSN>  <fileSize>75445</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.xml</OFSN>  <fileSize>8423</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.csv</OFSN>  <fileSize>2241087</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.xml</OFSN>  <fileSize>22618</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.qub</OFSN>  <fileSize>50339840</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.fits</OFSN>  <fileSize>449280</fileSize>  </dirEntry>  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 2894 0 --:--:-- --:--:-- --:--:-- 2906  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  -rwxr-xr-x 1 rchen 500 Oct 25 2014 */Users/rchen/Desktop/test*/testTprt/ladee\_ldex.tab  Step 11:  1c95600a27bf27ddaddaa9bdedaff44d  Step 12: Result from this step matches previous step  MD5(/Users/rchen/Desktop/test/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 10450 0 --:--:-- --:--:-- --:--:-- 10486  Step 22:  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  100 29172 100 29172 0 0 404k 0 --:--:-- --:--:-- --:--:-- 418k  Step 23:  % Total % Received % Xferd Average Speed Time Time Time Current  Dload Upload Total Spent Left Speed  100 10799 100 10799 0 0 280k 0 --:--:-- --:--:-- --:--:-- 301k  Step 24:../../../../../../Desktop/Screen%20Shot%202017-04-21%20at%2  Step 25-33: as expected  Steps 34,35:  <!doctype html><html lang="en"><head><title>HTTP Status 500 – Internal Server Error</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 – Internal Server Error</h1><hr class="line" /><p><b>Type</b> Exception Report</p><p><b>Description</b> The server encountered an unexpected condition that prevented it from fulfilling the request.</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:195)  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:634)  javax.servlet.http.HttpServlet.service(HttpServlet.java:741)  org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)  </pre><p><b>Note</b> The full stack trace of the root cause is available in the server logs.</p><hr class="line" /><h3>Apache Tomcat/8.5.47</h3></body></html>  Step 37: inaccessible directory ignored  <?xml version="1.0" encoding="UTF-8" standalone="no"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry>  <OFSN>/testTprt/dirLevel1a/fileLevel2b.txt</OFSN>  <fileSize>307</fileSize>  </dirEntry>  <dirEntry>  <OFSN>/testTprt/dirLevel1a/fileLevel2a.txt</OFSN>  <fileSize>72</fileSize>  </dirEntry>  </dirResult>  Step 40:  <?xml version="1.0" encoding="UTF-8" standalone="no"?>  <dirResult xmlns="http://oodt.jpl.nasa.gov/xml/namespaces/dirlist/1.0">  <dirEntry>  <OFSN>/testTprt/dirLevel1a/fileLevel2b.txt</OFSN>  <fileSize>307</fileSize>  </dirEntry>  <dirEntry>  <OFSN>/testTprt/dirLevel1a/fileLevel2a.txt</OFSN>  <fileSize>72</fileSize>  </dirEntry>  <dirEntry>  <OFSN>/testTprt/dirLevel1a/dirLevel2/fileLevel3.txt</OFSN>  <fileSize>1550</fileSize>  </dirEntry>  </dirResult> |
| Comments | Results met test criteria  Build 10a drops [PDS-322](https://oodt.jpl.nasa.gov/jira/browse/PDS-322), which has been addressed elsewhere |
| Date of Testing | 2019.11.03 |
| Test Personnel | Richard Chen |

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| Test Case ID | TPRT.3 |
| 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:  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/7.54.0  > Accept: \*/\*  >  < HTTP/1.1 200  < Content-Type: text/xml  < Content-Length: 1756  < Date: Mon, 04 Nov 2019 07:52:03 GMT  <  <?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>  <dirEntry xmlns="">  <OFSN>/testTprt/ladee\_ldex.xml</OFSN>  <fileSize>7031</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.lbl</OFSN>  <fileSize>28086</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.cdf</OFSN>  <fileSize>230296</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.xml</OFSN>  <fileSize>75445</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_lpw.xml</OFSN>  <fileSize>8423</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/msl\_chemcam.csv</OFSN>  <fileSize>2241087</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.xml</OFSN>  <fileSize>22618</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/a0013.qub</OFSN>  <fileSize>50339840</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/mvn\_iuv.fits</OFSN>  <fileSize>449280</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1b/tcshrc</OFSN>  <fileSize>29</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2b.txt</OFSN>  <fileSize>307</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/fileLevel2a.txt</OFSN>  <fileSize>72</fileSize>  </dirEntry>  <dirEntry xmlns="">  <OFSN>/testTprt/dirLevel1a/dirLevel2/fileLevel3.txt</OFSN>  <fileSize>1550</fileSize>  </dirEntry>  \* Connection #0 to host localhost left intact |
| Comments | Results met test criteria |
| Date of Testing | 2019.11.03 |
| Test Personnel | Richard Chen |

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| Test Case ID | TPRT.4 \*not tested in 10a: no search-service installed in $TOMCAT\_HOME/webapps |
| 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 from $CATALINA\_HOME/webapps/transport-registry/WEB-INF/config.xml, remove  <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 */Users/rchen/Desktop/test*; 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:///*/Users/rchen/Desktop/test*/x/lids.txt" 5. unzip derived.zip; cd .. 6. diff -r x bundle\_geo\_ra/data\_derived 7. rm -r x |
| Test Results |  |
| Comments |  |
| Date of Testing |  |
| Test Personnel | Richard Chen |

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| Test Case ID | TPRT.5 |
| 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 */Users/rchen/Desktop/test* and select testProcs.docx 3. diff /tmp/testProcs.docx */Users/rchen/Desktop/test*/testProcs.docx |
| Test Results | Step 2:  Step 3 shows no difference |
| Comments | Results met test criteria. |
| Date of Testing | 2019.11.04 |
| Test Personnel | Richard Chen |

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| Test Case ID | VIEW.1 |
| Description | Inspect PDS4 data |
| Requirements | PASS L4.PRP.5 |
| Success Criteria | Visualize various structres of Product\_Observational data |
| Test Steps | Start PDS View (not via command line), then “File” > “Open in New Window”, each of these files in */Users/rchen/Desktop/test* #view10 #view21   1. bundle\_geo\_ra/data\_derived/sol007.xml (Table\_Delimited) 2. view.29.14/view29.xml (Array\_2D\_Image) #view14 #view29 3. testPrep/cara\_data/cara\_data/data/C2004Q2.xml (Table\_Character) 4. testView/view26.xml #view26 5. testView/view27.xml #view27 6. testView/view28.xml #view28 7. testView/view22.xml #view22 |
| Test Results | Step 1:  Step 2:  Step 3:  Steps 4-6: all freeze |
| Comments | In 10a step 2, [view29](https://github.com/NASA-PDS-Incubator/pds-view/issues/29) requests improved orientation of a qub 2D backplane  In 10a, every step confirms [view10](https://github.com/NASA-PDS-Incubator/pds-view/issues/10), immediately prompt user to choose a file, and [view21](https://github.com/NASA-PDS-Incubator/pds-view/issues/21), some library preventing the app from running  In 10a, steps 4,5,6 open [view26](https://github.com/NASA-PDS-Incubator/pds-view/issues/26), [view27](https://github.com/NASA-PDS-Incubator/pds-view/issues/27), [view28](https://github.com/NASA-PDS-Incubator/pds-view/issues/28)  In 10a, step 7 could not confirm [view22](https://github.com/NASA-PDS-Incubator/pds-view/issues/22) worked |
| Date of Testing | 2019.10.28 |
| Test Personnel | Richard Chen |

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| Test Case ID | VIEW.2 |
| Description | Extract tabular data from a PDS4 product. |
| Requirements | PASS L4.PRP.5 |
| Success Criteria | Produce equivalent data in fixed width or csv. |
| Test Steps | 1. cd */Users/rchen/Desktop/test*/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 | 2019.04.06 |
| Test Personnel | Richard Chen |

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| Test Case ID | XFRM.1 \*not tested in 10a |
| 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 */Users/rchen/Desktop/test*/ 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. transform tfm\_grand1a.xml -f pds3-label 10. ln -s testPrep/tfm\_grand1a.tab . 11. Run NASAView to show TFM\_GRAND1A.LBL == testPrep/tfmgrand1A.lbl   == tfm\_grand1a\_delimited\_csv.xml (through pds\_viewer)   1. Edit output file TFM\_GRAND1A.csv to replace all commas with spaces 2. diff -w TFM\_GRAND1A.csv testPrep/TFM\_GRAND1A.TAB 3. transform -f csv https://sbn.psi.edu/archive/bundles/ast\_lightcurve\_derived/data/lc\_binary.xml 4. Use pds4\_viewer to examine local file lc\_binary\_delimited\_csv.xml 5. transform testPrep/xrs\_map\_ca\_si\_20150424.xml -f fits 6. Use pds4\_viewer for testPrep/xrs\_map\_ca\_si\_20150424.xml and fv for xrs\_map\_ca\_si\_20150424.fits 7. rm xrs\_map\_ca\_si\_20150424.fits lc\_binary\_delimited\_csv.xml lc\_binary.csv TFM\_GRAND1a.csv tfm\_grand1a.tab TFM\_GRAND1A.LBL tfm\_grand1a\_delimited\_csv.xml tfm\_grand1a.xml velocity.log tfm\_414.jpg tfm\_ele\_mom.xml TFM\_FF01.jp2 i943630r.jpg |
| Test Results | Step 2:  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 10:40:10 AM  Target [file:/Users/rchen/Desktop/test/testPrep/i943630r.xml]  Output Directory .  Index 1  Format Type jpg  INFO: [/Users/rchen/Desktop/test/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: [/Users/rchen/Desktop/test/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 = */Users/rchen/Desktop/test*/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 1.9.0  Time Sat, Apr 20 2019 at 10:40:27 AM  Target [file:/Users/rchen/Desktop/test/testPrep/tfm\_FF01.LBL]  Output Directory .  Index 1  Format Type jp2  INFO: [*/Users/rchen/Desktop/test*/testPrep/tfm\_FF01.LBL] Transforming image file: */Users/rchen/Desktop/test*/testPrep/TFM\_FF01.IMG  INFO: [*/Users/rchen/Desktop/test*/testPrep/tfm\_FF01.LBL] Successfully transformed image file '*/Users/rchen/Desktop/test*/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 1.9.0  Time Sat, Apr 20 2019 at 10:40:39 AM  Target [file:/Users/rchen/Desktop/test/testPrep/tfm\_ELE\_MOM.LBL]  Output Directory /Users/rchen/Desktop/test  Index 1  Format Type pds4-label  INFO: [*/Users/rchen/Desktop/test*/testPrep/tfm\_ELE\_MOM.LBL] Transforming label file: */Users/rchen/Desktop/test*/testPrep/tfm\_ELE\_MOM.LBL  INFO: [*/Users/rchen/Desktop/test*/testPrep/tfm\_ELE\_MOM.LBL] Finished transforming PDS3 label '*/Users/rchen/Desktop/test*/testPrep/tfm\_ELE\_MOM.LBL' to a PDS4 label ' */Users/rchen/Desktop/test*/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>1.12.0.0</information\_model\_version>  ---  > <information\_model\_version>1.2.0.1</information\_model\_version>  18c11  < <modification\_date>2019-04-20</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 1.9.0  Time Sat, Apr 20 2019 at 10:41:29 AM  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 9:  outputs = [/Users/rchen/Desktop/test/TFM\_GRAND1A.LBL]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 10:42:34 AM  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 13: no differences  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 1.9.0  Time Sat, Apr 20 2019 at 10:49:05 AM  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:  Step 16:  outputs = [/Users/rchen/Desktop/test/xrs\_map\_ca\_si\_20150424.fits]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 10:50:11 AM  Target [file:/Users/rchen/Desktop/test/testPrep/xrs\_map\_ca\_si\_20150424.xml]  Output Directory /Users/rchen/Desktop/test  Index 1  Format Type fits  INFO: [/Users/rchen/Desktop/test/testPrep/xrs\_map\_ca\_si\_20150424.xml] Transforming image '1' of file 'xrs\_map\_ca\_si\_20150424.img'  INFO: [TwoDImageExporter:setImageStatistics] No display settings found for identifier 'RATIO\_OF\_CA\_TO\_SI'.  INFO: [/Users/rchen/Desktop/test/testPrep/xrs\_map\_ca\_si\_20150424.xml] Successfully transformed image '1' of file 'xrs\_map\_ca\_si\_20150424.img' to the following output: /Users/rchen/Desktop/test/xrs\_map\_ca\_si\_20150424.fits.  Step 17: |
| 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 |
| Date of Testing | 2019.04.20 |
| Test Personnel | Richard Chen |

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| Test Case ID | XFRM.2 \*not tested in 10a |
| 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 */Users/rchen/Desktop/test*/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   The input is actually an Array\_3D\_Image. PDS-602   1. transform -f fits 7f90.xml |
| Test Results | Step 2:  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:05:37 AM  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  Step 7: This should work but doesn’t.  PDS Transform Tool Lo  outputs = []  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 10:59:52 PM  Target [file:/Users/rchen/Desktop/7f90.xml]  Output Directory /Users/rchen/Desktop  Index 1  Format Type fits  INFO: [/Users/rchen/Desktop/7f90.xml] Transforming image '1' of file '7f90.img'  ERROR: [file:/Users/rchen/Desktop/7f90.xml] Problem occurred during transformation: colorModel == null! |
| Comments | Results met success criteria.  In 9b, step 7 reopens [PDS-602](https://osr.jpl.nasa.gov/jira/browse/PDS-602) since it fails to transform the given Array\_3D\_Image |
| Date of Testing | 2019.04.20 |
| Test Personnel | Richard Chen |

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| Test Case ID | XFRM.3 \*not tested in 10a |
| 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 */Users/rchen/Desktop/test*/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   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   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. transform -O pancamA.xml   D. Prior to 8b, the -a on this caused an error   1. transform -a -f csv -t mvn\_rse\_l2.xml   E. 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   F. Build 9a   1. transform ED\_1996\_10\_31\_V01.LBL -f pds4-label 2. transform JGDWN\_CER18D\_SHA.LBL -f csv 3. transform -f pds4-label RMI\_SRU\_CRT\_05\_2017085\_2017086\_V01.LBL 4. transform -a -f csv PSP\_001777\_1650\_RED0\_1.IMG 5. transform -a -f jpg PSP\_001777\_1650\_RED0\_1.IMG 6. transform -f pds4-label -t DAWNCEGR2015002.LBL 7. rm -r tfm\_d00.jpg tfm\_433.gif tfm\_433.jpg tfm\_433.png xA xB velocity\* ed\_1996\_10\_31\_v01.xml jg\* JG\*.csv rmi\_sru\_crt\_05\_2017085\_2017086\_v01.xml PSP\*csv psp\*xml PSP\*jpg |
| Test Results | Step 2:  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:10:56 AM  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 3:  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 4:  105c105  < <scaling\_factor>1</scaling\_factor>  ---  > <scaling\_factor>0</scaling\_factor>  Steps 5,6,7 (images have been shrunk to fit 3-wide on this page)  ../../Users/rchen/Desktop/../../Users/rchen/Desktop/../../Users/rchen/Desktop/  Step 8 (Step 9 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 1.9.0  Time Sat, Apr 20 2019 at 11:16:14 AM  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 10:  total 2928  -rw-rw-r-- 1 rchen 703763885 96617 Apr 20 11:16 pancam\_1.jpg  -rw-rw-r-- 1 rchen 703763885 38511 Apr 20 11:16 pancam\_10.jpg  -rw-rw-r-- 1 rchen 703763885 51693 Apr 20 11:16 pancam\_11.jpg  -rw-rw-r-- 1 rchen 703763885 63297 Apr 20 11:16 pancam\_12.jpg  -rw-rw-r-- 1 rchen 703763885 72366 Apr 20 11:16 pancam\_13.jpg  -rw-rw-r-- 1 rchen 703763885 98680 Apr 20 11:16 pancam\_14.jpg  -rw-rw-r-- 1 rchen 703763885 73826 Apr 20 11:16 pancam\_15.jpg  -rw-rw-r-- 1 rchen 703763885 115606 Apr 20 11:16 pancam\_16.jpg  -rw-rw-r-- 1 rchen 703763885 113894 Apr 20 11:16 pancam\_17.jpg  -rw-rw-r-- 1 rchen 703763885 68505 Apr 20 11:16 pancam\_18.jpg  -rw-rw-r-- 1 rchen 703763885 80052 Apr 20 11:16 pancam\_19.jpg  -rw-rw-r-- 1 rchen 703763885 89209 Apr 20 11:16 pancam\_2.jpg  -rw-rw-r-- 1 rchen 703763885 64422 Apr 20 11:16 pancam\_20.jpg  -rw-rw-r-- 1 rchen 703763885 76261 Apr 20 11:16 pancam\_3.jpg  -rw-rw-r-- 1 rchen 703763885 71655 Apr 20 11:16 pancam\_4.jpg  -rw-rw-r-- 1 rchen 703763885 68849 Apr 20 11:16 pancam\_5.jpg  -rw-rw-r-- 1 rchen 703763885 71295 Apr 20 11:16 pancam\_6.jpg  -rw-rw-r-- 1 rchen 703763885 63583 Apr 20 11:16 pancam\_7.jpg  -rw-rw-r-- 1 rchen 703763885 29191 Apr 20 11:16 pancam\_8.jpg  -rw-rw-r-- 1 rchen 703763885 52468 Apr 20 11:16 pancam\_9.jpg  Step 11:  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 12: no differences  Step 13: (images have been shrunk to fit 2-wide on this page)  ../../../../../../Desktop/pancam_ ../../../../../../Desktop/pancam_  Step 14:  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 15:  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 1.9.0  Time Sat, Apr 20 2019 at 11:17:31 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 16: This should warn that the APXS\_\*.FMT files are missing. PDS-548  New PDS4 Label: /Users/rchen/Desktop/test/testPrep/apxs.xml  outputs = [/Users/rchen/Desktop/test/testPrep/apxs.xml]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:17:42 AM  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.xml'  Step 17:  WARNING: An illegal reflective access operation has occurred  WARNING: Illegal reflective access by com.sun.xml.bind.v2.runtime.reflect.opt.Injector$1 (file:/PDS4.9b.tools/validate-1.15.0/lib/jaxb-impl-2.2.4.jar) to method java.lang.ClassLoader.defineClass(java.lang.String,byte[],int,int)  WARNING: Please consider reporting this to the maintainers of com.sun.xml.bind.v2.runtime.reflect.opt.Injector$1  WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations  WARNING: All illegal access operations will be denied in a future release  PDS Validate Tool Report  Configuration:  Version 1.15.0  Date 2019-06-14T07:00:07Z  Parameters:  Targets [file:/Users/rchen/Desktop/PDS4test.build9b/testPrep/apxs.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/PDS4test.build9b/testPrep/apxs.xml  ERROR [error.label.schema] line 61, 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 [error.label.schema] line 71, 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 [error.label.schema] line 81, 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 [error.label.schematron] line 61, 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 [error.label.schematron] line 71, 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 [error.label.schematron] line 81, 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 [error.label.context\_ref\_not\_found] line 33: 'urn:nasa:pds:investigation.mars.science.laboratory' could not be found in the supplied list of registered context products.  Summary:  7 error(s)  0 warning(s)  Message Types:  3 error.label.schematron  3 error.label.schema  1 error.label.context\_ref\_not\_found  End of Report  Step 18:  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:18:15 AM  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.xml'  Step 19: [PDS-834](https://osr.jpl.nasa.gov/jira/browse/PDS-834): create a correct lid\_reference  Configuration:  Version 1.15.0  Date 2019-06-14T07:31:19Z  Parameters:  Targets [file:/Users/rchen/Desktop/PDS4test.build9b/testPrep/apxs.xml]  Severity Level WARNING  Recurse Directories true  File Filters Used [\*.xml, \*.XML]  Force Mode on  Data Content Validation on  Max Errors 100000  Registered Contexts File /PDS4tools/validate/resources/registered\_context\_products.json  Product Level Validation Results  FAIL: file:/Users/rchen/Desktop/PDS4test.build9b/testPrep/apxs.xml  ERROR [error.label.context\_ref\_not\_found] line 33: 'urn:nasa:pds:investigation.mars.science.laboratory' could not be found in the supplied list of registered context products.  Summary:  1 error(s)  0 warning(s)  Message Types:  1 error.label.context\_ref\_not\_found  End of Report  Step 20:  ^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>  Step 22:  New PDS4 Label: /Users/rchen/Desktop/test/testPrep/ed\_1996\_10\_31\_v01.xml  outputs = [/Users/rchen/Desktop/test/testPrep/ed\_1996\_10\_31\_v01.xml]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:19:55 AM  Target [file:/Users/rchen/Desktop/test/testPrep/ED\_1996\_10\_31\_V01.LBL]  Output Directory /Users/rchen/Desktop/test/testPrep  Index 1  Format Type pds4-label  INFO: [/Users/rchen/Desktop/test/testPrep/ED\_1996\_10\_31\_V01.LBL] Transforming label file: /Users/rchen/Desktop/test/testPrep/ED\_1996\_10\_31\_V01.LBL  INFO: [/Users/rchen/Desktop/test/testPrep/ED\_1996\_10\_31\_V01.LBL] Finished transforming PDS3 label '/Users/rchen/Desktop/test/testPrep/ED\_1996\_10\_31\_V01.LBL' to a PDS4 label '/Users/rchen/Desktop/test/testPrep/ed\_1996\_10\_31\_v01.xml'  A visual comparison:  Step 23:  New PDS4 Label: /Users/rchen/Desktop/test/testPrep/jgdwn\_cer18d\_sha.xml  outputs = [/Users/rchen/Desktop/test/testPrep/JGDWN\_CER18D\_SHA.csv, /Users/rchen/Desktop/test/testPrep/jgdwn\_cer18d\_sha\_delimited\_csv.xml]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:20:05 AM  Target [file:/Users/rchen/Desktop/test/testPrep/JGDWN\_CER18D\_SHA.LBL]  Output Directory /Users/rchen/Desktop/test/testPrep  Index 1  Format Type csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/JGDWN\_CER18D\_SHA.LBL] Transforming label file: file:/Users/rchen/Desktop/test/testPrep/JGDWN\_CER18D\_SHA.LBL  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find an object: [NONEXISTENT\_TABLE]  INFO: [file:/Users/rchen/Desktop/test/testPrep/JGDWN\_CER18D\_SHA.LBL] Finished transforming PDS3 label 'file:/Users/rchen/Desktop/test/testPrep/JGDWN\_CER18D\_SHA.LBL' to a PDS4 label '/Users/rchen/Desktop/test/testPrep/jgdwn\_cer18d\_sha.xml'  INFO: [file:/Users/rchen/Desktop/test/testPrep/jgdwn\_cer18d\_sha.xml] Transforming table '1' of file: file:/Users/rchen/Desktop/test/testPrep/JGDWN\_CER18D\_SHA.TAB  INFO: [file:/Users/rchen/Desktop/test/testPrep/jgdwn\_cer18d\_sha.xml] Successfully transformed table '1' to the following output: /Users/rchen/Desktop/test/testPrep/JGDWN\_CER18D\_SHA.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/jgdwn\_cer18d\_sha.xml] Successfully created Table\_Delimited label: /Users/rchen/Desktop/test/testPrep/jgdwn\_cer18d\_sha\_delimited\_csv.xml  Step 24:  New PDS4 Label: */Users/rchen/Desktop/test*/testPrep/rmi\_sru\_crt\_05\_2017085\_2017086\_v01.xml  outputs = [*/Users/rchen/Desktop/test*/testPrep/rmi\_sru\_crt\_05\_2017085\_2017086\_v01.xml]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:20:15 AM  Target [*/Users/rchen/Desktop/test*/testPrep/RMI\_SRU\_CRT\_05\_2017085\_2017086\_V01.LBL]  Output Directory */Users/rchen/Desktop/test*/testPrep  Index 1  Format Type pds4-label  INFO: [*/Users/rchen/Desktop/test*/testPrep/RMI\_SRU\_CRT\_05\_2017085\_2017086\_V01.LBL] Transforming label file: */Users/rchen/Desktop/test*/testPrep/RMI\_SRU\_CRT\_05\_2017085\_2017086\_V01.LBL  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^SPREADSHEET, which has a record offset value.  INFO: [*/Users/rchen/Desktop/test*/testPrep/RMI\_SRU\_CRT\_05\_2017085\_2017086\_V01.LBL] Finished transforming PDS3 label ' */Users/rchen/Desktop/test*/testPrep/RMI\_SRU\_CRT\_05\_2017085\_2017086\_V01.LBL' to a PDS4 label ' */Users/rchen/Desktop/test*/testPrep/rmi\_sru\_crt\_05\_2017085\_2017086\_v01.xml'  Step 25: ERROR messages correctly note that input PDS3 file lacks RECORD\_BYTES  New PDS4 Label: /Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml  outputs = [/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_1.csv, /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_2.csv, /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_3.csv, /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_4.csv, /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_5.csv, /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_6.csv, /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_7.csv, /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_8.csv, /Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1\_delimited\_csv.xml]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:20:43 AM  Target [file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG]  Output Directory /Users/rchen/Desktop/test/testPrep  Transform All true  Format Type csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG] Transforming label file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^SCIENCE\_CHANNEL\_TABLE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not map a 3 byte, MSB\_UNSIGNED\_INTEGER type to its equivalent PDS4 type for column 'CPMM readout time in flight software ticks'. Setting 'data\_type' element to 'Unknown'.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^LOOKUP\_TABLE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^CPMM\_ENGINEERING\_TABLE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not map a 3 byte, MSB\_UNSIGNED\_INTEGER type to its equivalent PDS4 type for column 'Delta Time Value'. Setting 'data\_type' element to 'Unknown'.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not map a 3 byte, MSB\_UNSIGNED\_INTEGER type to its equivalent PDS4 type for column 'Post Binned Lines'. Setting 'data\_type' element to 'Unknown'.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^CALIBRATION\_LINE\_PREFIX\_TABLE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^CALIBRATION\_LINE\_SUFFIX\_TABLE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^CALIBRATION\_IMAGE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^LINE\_PREFIX\_TABLE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^LINE\_SUFFIX\_TABLE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^IMAGE, which has a record offset value.  ERROR: [UberspectImpl$VelMethodImpl:doInvoke] Could not find RECORD\_BYTES in the label, which is needed to calculate the actual byte location for ^GAP\_TABLE, which has a record offset value.  INFO: [file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG] Finished transforming PDS3 label 'file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG' to a PDS4 label '/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml'  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Transforming table '1' of file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully transformed table '1' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_1.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Transforming table '2' of file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully transformed table '2' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_2.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Transforming table '3' of file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully transformed table '3' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_3.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Transforming table '4' of file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully transformed table '4' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_4.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Transforming table '5' of file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully transformed table '5' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_5.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Transforming table '6' of file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully transformed table '6' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_6.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Transforming table '7' of file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully transformed table '7' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_7.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Transforming table '8' of file: file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully transformed table '8' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_8.csv  INFO: [file:/Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1.xml] Successfully created Table\_Delimited label: /Users/rchen/Desktop/test/testPrep/psp\_001777\_1650\_red0\_1\_delimited\_csv.xml  Step 26:  NumberFormatException java.lang.NumberFormatException: For input string: ""  no value found for //item[@key='RECORD\_BYTES']  Image write Done  JConvertIIO  0) INP = /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  1) OUT = /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_1.jpg  2) FORMAT = jpg  3) RI = true  4) OFORM = BYTE  NumberFormatException java.lang.NumberFormatException: For input string: ""  no value found for //item[@key='RECORD\_BYTES']  Image write Done  JConvertIIO  0) INP = /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG  1) OUT = /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_2.jpg  2) FORMAT = jpg  3) RI = true  4) OFORM = BYTE  outputs = [/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_1.jpg, /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_2.jpg]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:20:58 AM  Target [file:/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG]  Output Directory /Users/rchen/Desktop/test/testPrep  Transform All true  Format Type jpg  INFO: [/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG] Transforming image file: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG] Successfully transformed image file '/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG/PSP\_001777\_1650\_RED0\_1.IMG' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_1.jpg  INFO: [/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG] Transforming image file: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG/PSP\_001777\_1650\_RED0\_1.IMG  INFO: [/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG] Successfully transformed image file '/Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1.IMG/PSP\_001777\_1650\_RED0\_1.IMG' to the following output: /Users/rchen/Desktop/test/testPrep/PSP\_001777\_1650\_RED0\_1\_2.jpg  Step 27:  New PDS4 Label: /Users/rchen/Desktop/test/testPrep/dawncegr2015002.xml  outputs = [/Users/rchen/Desktop/test/testPrep/dawncegr2015002.xml]  PDS Transform Tool Log  Version Version 1.9.0  Time Sat, Apr 20 2019 at 11:21:13 AM  Target [file:/Users/rchen/Desktop/test/testPrep/DAWNCEGR2015002.LBL]  Output Directory /Users/rchen/Desktop/test/testPrep  Index 1  Format Type pds4-label  INFO: [/Users/rchen/Desktop/test/testPrep/DAWNCEGR2015002.LBL] Transforming label file: /Users/rchen/Desktop/test/testPrep/DAWNCEGR2015002.LBL  INFO: [/Users/rchen/Desktop/test/testPrep/DAWNCEGR2015002.LBL] Finished transforming PDS3 label '/Users/rchen/Desktop/test/testPrep/DAWNCEGR2015002.LBL' to a PDS4 label '/Users/rchen/Desktop/test/testPrep/dawncegr2015002.xml' |
| Comments | Results met success criteria.  In 8b, step 16 opens [PDS-548](https://oodt.jpl.nasa.gov/jira/browse/PDS-548), halt generate and notify when input files are missing.  In 9b, step 19 opens [PDS-834](https://osr.jpl.nasa.gov/jira/browse/PDS-834), create a correct lid\_reference for -f pds4-label |
| Date of Testing | 2019.04.20 |
| Test Personnel | Richard Chen |

|  |  |
| --- | --- |
| Test Case ID | XFRM.4 |
| 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 */Users/rchen/Desktop/test*/testPrep/TFM\_GRAND1A.\*. Click “Upload File(s)”, then “Continue” 3. On new page, “Format” = csv. Click “Transform” 4. Run this after XFRM.3, which runs transform on the command line   diff */Users/rchen/Desktop/test*/testPrep/tfm\_grand1a\_delimited\_csv.xml /tmp/;  diff */Users/rchen/Desktop/test*/testPrep/tfm\_grand1a.xml /tmp/; diff */Users/rchen/Desktop/test*/testPrep/TFM\_GRAND1a.csv /tmp/ |
| Test Results | Step 2:  Step 3: |
| Comments | Results met success criteria. |
| Date of Testing | 2019.04.16 |
| Test Personnel | Richard Chen |

## RDD Traceability

The Release Description (RDD) for Build 10b,

<https://pds-engineering.jpl.nasa.gov/development/pds4/10.1.0/release/rdd-10.1.0.html>

guides the testing in this document. The RDD lists the issues, as tracked in github, that the software in this build addresses. Anomalies found during testing become github issues, so to avoid duplication of information and effort, this document does not track historical anomalies.

In the table below:

* Column 1: the issue ID, abbreviated from the RDD, used in the test steps above
* Column 2: status: “resolved”, “untested”, “unresolved”.
* Column 3: if column 2 is resolved, a test case that demonstrates the issue. If untested,

“docs”: the issue concerned documentation

“internal”: the change was internal to the software with no external manifestation

“cost”: the value of the test would be minimal, and the effort, large

* Column 4: brief description of the issue

“IM” in this table abbreviates the RDD’s “pds4-information-model” component

|  |  |  |  |
| --- | --- | --- | --- |
| IM#74 | resolved | SCMA.3 | LDDTool: Update version flag (-v) to show IM version as well as software version |
| IM#77 | resolved | SCMA.3 | Fixed the calculation of class extensions and restrictions |
| IM#79 | resolved | SCMA.3 | LDDTool: XMLSchema Fix Nul In Import File Name |
| IM#81 | resolved | SCMA.3 | LDDTool: XMLSchema Fix Null In Import Cleanup |
| IM#91 | untested | internal | Improve error handling for LDDTool processing of CTLI IngestLDD file |
| IM#93 | resolved | SCMA.3 | Update LDDTool to write the PDS4 Data Dictionary (DocBook) for multiple LDDs |
| IM#97 | resolved | SCMA.1 | see testScma.docx for CCB-204 |
| IM#99 | resolved | SCMA.1 | see testScma.docx for CCB-268 |
| IM#101 | resolved | SCMA.1 | see testScma.docx for CCB-204 |
| IM#103 | resolved | SCMA.1 | see testScma.docx for CCB-138 |
| IM#105 | untested | docs | Fix invalid examples or link to valid versions online |
| IM#109 | untested | docs | UML diagrams |
| IM#111 | resolved | SCMA.3 | LDDTool aborts on short filename |
| IM#113 | resolved | SCMA.1 | see testScma.docx for CCB-204 |
| IM#122 | resolved | SCMA.1 | see testScma.docx for CCB-204 |
| IM#125 | resolved | SCMA.3 | Nillable attributes are not declared nillable in class definitions |
| IM#127 | untested | internal | Sync up LDDTool version with Maven build version |
| IM#130 | resolved | SCMA.1 | see testScma.docx for CCB-256 |
| IM#133 | resolved | SCMA.1 | see testScma.docx for CCB-271 |
| IM#135 | resolved | SCMA.1 | see testScma.docx for CCB-220 |
| IM#137 | resolved | SCMA.1 | see testScma.docx for CCB-274 |
| IM#139 | resolved | SCMA.1 | see testScma.docx for CCB-278 |
| IM#142 | resolved | SCMA.1 | see testScma.docx for CCB-204 |
| IM#144 | resolved | SCMA.1 | see testScma.docx for CCB-274 |
| IM#146 | resolved | SCMA.1 | see testScma.docx for CCB-204 |
| IM#148 | resolved | SCMA.1 | see testScma.docx for CCB-272 |
| IM#152 | resolved | SCMA.1 | see testScma.docx for CCB-279 |
| IM#154 | resolved | SCMA.3 | Add code to fail gracefully for deprecated -M argument |
| IM#179 | resolved | SCMA.3 | allow multiple Information Model Versions |
| IM#180 | resolved | SCMA.3 | handle "unbounded" maximum cardinality in Choice blocks |

Note, the RDD does not list IM#180

“PAR” in this table abbreviates the RDD’s “pds-app-registry” component

|  |  |  |  |
| --- | --- | --- | --- |
| PAR#1 | resolved | HVT.1 | update package and documentation after sub-packages updates (harvest, registry) |
| PAR#2 | resolved | HVT.1 | Harvest does not work with registry manager |

“REG” in this table abbreviates the RDD’s “registry” component

|  |  |  |  |
| --- | --- | --- | --- |
| REG#18 | resolved | HVT.1 | update package and documentation after sub-packages updates (harvest, registry) |
| REG#20 | untested | docs | Update Registry documentation per collection updates and report-mgr tool |
| REG#22 | resolved | HVT.1 | Fix bug in registry installer occurring from open sourcing or project |
| REG#23 | resolved | HVT.1 | Add new search\_post utility for posting Solr Docs to the search index |
| REG#25 | resolved | HVT.1 | Upgrade to Solr 8.2.0 |
| REG#27 | resolved | HVT.1 | Update search-post tool to accomplish all functionality that Solr Post Tool does |
| REG#28 | untested | internal | Add schema for XPath to prevent failure on ingestions with differing data types |
| REG#31 | resolved | HVT.1 | Expand Registry collection to include additional overall data system metrics |
| REG#37 | untested | cost | Improve Registry Manager to work in Windows and support more commands |
| REG#38 | untested | docs | Update Registry documentation per new registry-mgr upgrades |
| REG#42 | untested | cost | Registry doesn't build on Windows |

“AIP” and “DEE” in this table abbreviate the “aip-gen” and “pds-deep-archive” components

|  |  |  |  |
| --- | --- | --- | --- |
| AIP#3 | untested | docs | Develop design and requirements for aip-gen software |
| AIP#9 | resolved | DEEP.1 | Generate SIP manifest XML label |
| AIP#13 | untested | internal | Open Source NSSDCA Interface Software |
| AIP#25 | resolved | DEEP.1 | Improve software to include all files associated to the labels |
| DEE#1 | resolved | DEEP.1 | Improved user operation and installation guides with github pages |
| DEE#2 | resolved | DEEP.1 | Implement SIP generation offline capabilities |
| DEE#3 | resolved | DEEP.1 | Develop initial AIP generation component |
| DEE#10 | untested | cost | Test SIP Gen with NSSDC |
| DEE#18 | resolved | DEEP.1 | Update SIP LID to include bundle version id |
| DEE#22 | resolved | DEEP.1 | Require bundle-base-url when in offline mode |

“HVT” in this table abbreviates the RDD’s “harvest” component

|  |  |  |  |
| --- | --- | --- | --- |
| HVT#4 | unresolved |  | Update harvest to ingest context metadata from context products |
| HVT#8 | untested | obsolete | Update Harvest to use online namespace for easier configuration and validation |
| HVT#9 | untested | obsolete | Include global policy as a default output product |
| HVT#11 | resolved | HVT.1 | Upgrade to Solr 8.2.0 |
| HVT#13 | resolved | HVT.1 | Update registry-mgr tool to accomplish all functionality that Solr Post Tool does |
| HVT#15 | resolved | HVT.1 | Create new Harvest / Registry package to streamline documentation and deployment |
| HVT#16 | resolved | HVT.1 | Simplify Harvest execution and configuration to only manage Registry collection |
| HVT#17 | untested | docs | Update Harvest documentation per new scripts and upgrades |
| HVT#20 | resolved | HVT.1 | Bash script does not launch on macos, likely not on linux |
| HVT#22 | resolved | HVT.2 | Lid & vid validation, logging enhancement, fix skipped file counter |
| HVT#24 | untested | internal | Review CIS Node Artifact metrics requirements for updates to Harvest config |
| HVT#26 | untested | internal | Prep for Open Source |

“VAL” in this table abbreviates the RDD’s “validate” component

|  |  |  |  |
| --- | --- | --- | --- |
| VAL#9 | resolved | VAL.7 | Fail when the value of an ASCII\_Integer is all spaces |
| VAL#29 | resolved | VAL.7 | Improve pds4.bundle validation performance |
| VAL#30 | resolved | VAL.7 | Enhance content validation to decrease validation time to <=50& |
| VAL#56 | resolved | VAL.8 | Ensure Table\_Character/Table\_Binary fields match field length definitions |
| VAL#63 | resolved | VAL.8 | Ensure Table\_Character groups match the specified group\_length |
| VAL#87 | resolved | VAL.7 | Apply catalog file and local schemas to discipline schema resolution |
| VAL#118 | resolved | VAL.8 | Update Validate error/warning counts per ATM regression testing |
| VAL#123 | resolved | VAL.8 | Enhance validate performance to average <1 second with content validation |
| VAL#124 | resolved | VAL.8 | Average less than 1 second execution time when content validation is disabled |
| VAL#128 | resolved | VAL.3 | Develop validate-bundle script |
| VAL#132 | resolved | VAL.1 | Add validated product counter to pass/fail reporting and end summary |
| VAL#133 | resolved | VAL.7 | Deprecate --no-data-check in favor of --skip-content-validation |
| VAL#135 | resolved | VAL.8 | Update config to include telescopes and facilities telescopes and facilities |
| VAL#137 | resolved | VAL.3 | Update delimited table handling to allow for empty fields |
| VAL#139 | resolved | VAL.3 | Check that a producr’s LID has the LID of its parent collection as its base |
| VAL#145 | resolved | VAL.8 | Incorrect help information for --spot-check-data flag |
| VAL#146 | resolved | VAL.3 | Update parent LID checking to fix bug introduced for collection integrity checking |
| VAL#149 | resolved | VAL.8 | Check number of records specified in label matches the records in the table |
| VAL#158 | untested | internal | Update POM to use PDS Parent POM |
| VAL#160 | resolved | VAL.1 | Remove erroneous timing messages from log output |
| VAL#165 | resolved | VAL.8 | Spot check bug: internal\_error when record number is multiple of spot check number |
| VAL#167 | resolved | VAL.1 | Content validation multi-threading issue |
| VAL#170 | resolved | VAL.7 | Update validate to allow for empty fields in delimited tables |
| VAL#173 | resolved | VAL.3 | Product counter is invalid and does not reset after each collection |
| VAL#175 | resolved | VAL.8 | Fix schematron parsing bug introduced during performance improvements |
| VAL#178 | resolved | VAL.8 | Improve performance when content validation is disabled |
| VAL#180 | resolved | VAL.8 | Fix multi-threading bug where reporting finishes prior to threads completing |
| VAL#182 | resolved | VAL.8 | Upgrade to Saxon 9.9.1-7 to fix Schematron bug |
| VAL#183 | resolved | VAL.8 | Memory leak issue has returned after Saxon downgrade |
| VAL#187 | untested | docs | Update documentation to include more details about how/where to file bug reports |
| VAL#194 | resolved | VAL.8 | Update validate-bundle to include report filepath flag |
| VAL#195 | untested | docs | Improve installation procedure |
| VAL#197 | resolved | VAL.6 | Change behaviour for printing of "dots" to show progress |
| VAL#201 | resolved | VAL.8 | Schematron doesn't fire if <?xml-model ...> has an extra space at the end |

Components not tested: pds4-jparser (internal to the software), pds-api-server (pre-alpha release), ops (already operational), pds-site (already operational), search-ui (pre-alpha release), mi-label (too new), geo-data-services-pilot (no software available)

## Requirements Traceability

This matrix lists the requirement ID, the system component of the requirement, the test case in Section 3 that tests the requirement, and the status of the test. The requirement IDs come from [software requirement documents](https://pds-engineering.jpl.nasa.gov/content/key-documents) and are also listed in the test cases. The PDS DEEP Archive module, tested by DEEP.1, comes with its own [requirements](https://github.com/NASA-PDS/pds-deep-archive/issues?q=label%3Arequirement), listed in DEEP.1 but not here.

|  |  |  |  |
| --- | --- | --- | --- |
| **Requirement #** | **System Component** | **Test case ID** | **Test Status** |
| L5.GEN.1 | General System | REQ.4 | pass |
| L5.GEN.2 | General System | REQ.4 | pass |
| L5.GEN.3 | General System | TPRT.1 | pass |
| L5.GEN.4 | General System | VAL.1 XFRM.1 | pass |
| L5.GEN.5 | General System | SRCH.3 TPRT.1 | pass |
| L5.GEN.6 | General System | SRCH.5 | pass |
| L5.GEN.7 | General System | HVT.1 VAL.1 | pass |
| L5.GEN.8 | General System | REQ.6 | skip |
| L5.GEN.9 | General System | SRCH.2 | pass |
| L5.GEN.10 | General System | REQ.5 | pass |
| L5.GEN.11 | General System | REQ.1 | pass |
| L5.HVT.1 | Harvest Tool | HVT.1 | pass |
| L5.HVT.2 | Harvest Tool | HVT.1 | pass |
| L5.HVT.3 | Harvest Tool | HVTOLD.2 | pass |
| L5.HVT.4 | Harvest Tool | HVT.1 | pass |
| L5.HVT.5 | Harvest Tool | HVT.1 | pass |
| L5.HVT.6 | Harvest Tool | HVT.1 | pass |
| L5.HVT.7 | Harvest Tool | HVT.1 | pass |
| L5.HVT.8 | Harvest Tool | HVT.1 | pass |
| L5.PRP.DE.1 | Prep: Design Tool | REQ.3 | pass |
| L5.PRP.DE.2 | Prep: Design Tool | REQ.3 | pass |
| L5.PRP.DE.3 | Prep: Design Tool | REQ.3 | pass |
| L5.PRP.DE.4 | Prep: Design Tool | REQ.3 | pass |
| L5.PRP.DE.5 | Prep: Design Tool | REQ.3 | pass |
| L5.PRP.DE.6 | Prep: Design Tool | REQ.3 | pass |
| L5.PRP.DE.7 | Prep: Design Tool | REQ.3 | pass |
| L5.PRP.VA.1 | Prep: Validation Tool | VAL.1 | pass |
| L5.PRP.VA.2 | Prep: Validation Tool | VAL.1 | pass |
| L5.PRP.VA.3 | Prep: Validation Tool | VAL.3 | pass |
| L5.PRP.VA.4 | Prep: Validation Tool | VAL.4 | pass |
| L5.PRP.VA.5 | Prep: Validation Tool | VAL.1 | pass |
| L5.PRP.VA.6 | Prep: Validation Tool | VAL.1 | pass |
| L5.PRP.VA.7 | Prep: Validation Tool | VAL.3 | pass |
| L5.PRP.VA.8 | Prep: Validation Tool | VAL.5 | pass |
| L5.PRP.VA.9 | Prep: Validation Tool | VAL.1 | pass |
| L5.PRP.VA.10 | Prep: Validation Tool | VAL.2 | pass |
| L5.REG.1 | Registry Service | REGOLD.1 DN.2 | pass |
| L5.REG.2 | Registry Service | REGOLD.2 DN.2 | pass |
| L5.REG.3 | Registry Service | REGOLD.3 DN.2 | pass |
| L5.REG.4 | Registry Service | REGOLD.1 DN.2 | pass |
| L5.REG.5 | Registry Service | REGOLD.1 | pass |
| L5.REG.6 | Registry Service | REGOLD.4 | pass |
| L5.REG.7 | Registry Service | REGOLD.5 | pass |
| L5.REG.8 | Registry Service | REGOLD.1 DN.2 | pass |
| L5.REG.9 | Registry Service | REGOLD.6 | pass |
| L5.REG.10 | Registry Service | REGOLD.6 | pass |
| L5.REG.11 | Registry Service | REGOLD.6 | pass |
| L5.REG.12 | Registry Service | REGOLD.6 | pass |
| L5.REG.13 | Registry Service | REGOLD.1 REGOLD.2 REGOLD.4 DN.2 | pass |
| L5.REG.14 | Registry Service | REGOLD.1 REGOLD.2 REGOLD.4 REGOLD.10 DN.2 | pass |
| L5.REG.15 | Registry Service | REGOLD.7 | skip |
| L5.REG.16 | Registry Service | REGOLD.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 | POR.1 SRCH.5 SRCH.4 | 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 | SRCH.4 | pass |
| L5.SCH.6 | Search Service | SRCH.5 | pass |
| L5.SCH.7 | Search Service | SRCH.6 | pass |
| L5.SCH.8 | Search Service | SRCH.6 | pass |
| L5.SCH.9 | Search Service | SRCH.6 | pass |
| L5.SCH.10 | Search Service | SRCH.6 | pass |
| L5.SCH.11 | Search Service | SRCH.6 | pass |
| L5.SCH.12 | Search Service | SRCH.1 | pass |
| L5.SCH.13 | Search Service | SRCH.7 | skip |
| L5.SEC.1 | Security Service | REQ.5 REQ.2 | pass |
| L5.SEC.2 | Security Service | REQ.2 | pass |
| L5.SEC.3 | Security Service | REQ.5 REQ.2 | pass |
| L5.SEC.4 | Security Service | REQ.2 | pass |
| L5.SEC.5 | Security Service | REQ.2 | pass |
| L5.SEC.6 | Security Service | REQ.2 | pass |
| L5.SEC.7 | Security Service | REQ.2 | pass |
| L5.TRS.1 | Transport Service | TPRT.1 TPRT.2 TPRT.3 | pass |
| L5.TRS.2 | Transport Service | TPRT.1 | pass |
| L5.TRS.3 | Transport Service | TPRT.2 | 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 Harvest | CTLG.1 CTLG.2 CTLG.3 | pass |
| 4.2.2 | Portal | POR.2 | pass |
| L4.PRP.2 | Prep: Generate Tool | GEN.1 GEN.2 | pass |
| L4.PRP.4 | Prep: Transform Tool | XFRM.\* | pass |
| L4.PRP.5 | Prep: PDS4 Tools | VIEW.1 VIEW.2 | pass |
| 1.3.3 | Information Model | SCMA.1 SCMA.2 | pass |

The skipped requirements:

L5.GEN.8: Provide interface to monitor other services’ health: not implemented  
L5.REG.15: Enable replication of registry contents: not implemented  
L5.REG.16: Enable verification of registry: not implemented  
L5.SCH.2: Degrade gracefully on archaic browsers: meh  
L5.SCH.13: Capture metrics pertaining to search indexes' usage and contents: not implemented

## Miscellaneous

### Test Data

https://pds-engineering.jpl.nasa.gov/content/build\_10b\_deliverables has this document as well as test data PDS4test.build10b.tgz.

### Test Environment

Build 10b integration and test environment encompasses the following:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | **OS** | **RAM** | **Software** |
| RC’s laptop | macOS 10.14.6 | 32GB | all |
| pds-int | CentOS Linux 7 | 8GB | harvest lddtool registry-manager validate pds-deep-archive |

### Configuration Management

The PDS Configuration Management process will uniquely identify the build 10b and other releases. It will be followed and maintained by the Operations Team, which will act as the configuration management process engineer.

### Acronyms

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