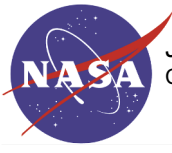# PDS Engineering Node (EN) B12. 0 Delivery & Deployment Review

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Thomas Loubrieu, Jordan Padams

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Agenda

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Review Board

Chair	Robin O'Brien
Chief Engineer	Costin Radulescu
Assurance Engineer	Eva Bokor
Security Systems Engineer	Mike Pajevski
Task Manager	Jordan Padams
Task Cognizant Engineer	Thomas Loubrieu

Board

Customers

N/A – PDS EN will present an overview of these slides to PDS Software Working Group

Software Overview

- The Planetary Data System (PDS) is NASA's official planetary data long term archive.
  - For more information on the PDS, see our website: https://pds.nasa.gov/home/about/

- In addition to PDS website, PDS Engineering Node is responsible for PDS4, PDS Information Model, and a suite of PDS4 system services and tools that support PDS data lifecycle.
  - For more information on the PDS Engineering Node, see our website: https://pds-engineering.jpl.nasa.gov/

- Build 12.0 made a number of improvements for Information Model 1.17.0 and tools including
  - Registry App, DOI Service, Deep Archive, Validate

- In addition, it fixed a number issues found in previous builds.

Known Issues

- The following details known details missing from the review material:

Section	Description
Improvements and Bug Counters	Our current reporting mechanisms enable autonomous counters for issue tracking during the build cycle. Issues raised during the I&T will be implemented in the upcoming delivery.
SLOC Counts	We began to collect SLOC and are working on a stable procedure and reporting.
Code Coverage	We currently do not have code coverage for our repositories.
Requirement Traceability	We currently do not have requirement mapping for our releases.

Work Product Status

Document Title	DMS Doc and Revision ID
Management Plan	https://pds-eng ineering.jpl.nasa.gov/sites/default/files/documents/pds2010/keydocuments/PDS-SMP.pdf
Task Implementation Plan	https://pds-engineering.jpl.nasa.gov/sites/default/files/documents/pds2010/pds4-proj-plan-07172013.pdf
Release Plan	https://nasa-pds.github.io/releases/12.0/plan.html
Operation Concept	https://pds-engineering.jpl.nasa.gov/sites/default/files/documents/pds2010/keydocuments/pds4-ops-concept.pdf
Requirements	https://pds-engineering.jpl.nasa.gov/sites/default/files/documents/pds2010/design/system_design/pds4_system_reqs.pdf
Architecture Description	https://pds-engineering.jpl.nasa.gov/sites/default/files/documents/pds2010/architecture/system_architecture/pds4_system_arch_spec.pdf
Design Specification	See various design docs in: https://pds-engineering.jpl.nasa.gov/content/key-documents
Interface Specification	N/A
Test Plan	https://pds-engineering.jpl.nasa.gov/file/release_build_12_test_plan.pdf
Test Procedures	https://pds-engineering.jpl.nasa.gov/file/build12.0testprocs.pdf
Release Description	https://nasa-pds.github.io/releases/12.0/rdd.html
Product Guide	N/A
User Guide	See individual tool documentation. Links in RDD
Test Report	https://pds-engineering.jpl.nasa.gov/file/build12.0testprocs.pdf
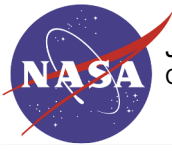
Test Status Summary

Metric	Value
Total Number of Tests	**138**
Successful Tests	133
Partially Successful Tests	0
Tests in Progress	0
Unsuccessful Tests	5
Unexecuted Tests	0

Defect Corrections

Summary of Significant Improvements

Registry/API: handle supplemental metadata, performance improvement, response format improvement, product relationship, wildcard in queries, initial google like search

LDD: Improve argument handling using argument parsing library

Validate: validate all files referenced by a Product_Document, check that all Internal References are valid references to other PDS4 products within the current validating bundle, validate PDF files are PDF/A,

DOI Service: operational deployment of the service to be secure, mint DOIs through DataCite

Total number of new improvements	46

For requirements tracing, see tickets.
To view all bugs, see RDD: https://nasa-pds.github.io/releases/12.0/rdd.html

Defect Corrections

Summary of Significant Defect Fixes

Validate: check Header of a File_Area_Ancillary nor does not provide a meaningful error message for an incorrect Table_Character offset, validate does not parse colon in Windows path, stack trace being created during successful validate execution

Total number of new defect corrections	43

For requirements tracing, see tickets.
To view all bugs, see RDD: https://nasa-pds.github.io/releases/12.0/rdd.html

Requirements

ID	Requirement Statement	Procedure Test ID	Requester
1	PDS Registry *	REG.*	PDS
2	PDS DOI Service	DOI.*	PDS
3	PDS Deep Archive	DEEP.*	PDS
4	Validate	VAL.*	PDS
5	PDS4 Information Model	IM.*	PDS
6	Harvest	HAR.*	PDS
7	PDS-API	API.*	PDS
8	PDS DOI UI	DOI-UI.*	PDS

Total number of new requirements	65

Failed Test Case 1

- **Test Case API.1**
  - <u>Description:</u> As an API user, I want to search using URL parameters
  - <u>Result:</u> Fail
  - <u>Severity:</u> Low
  - <u>Issues:</u>
    - As a user, I can search by product lid:
      - https://pds-gamma.jpl.nasa.gov/api/products/urn%3Anasa%3Apds%3Ainsight_documents.
    - But API did not return any results by using "q=lid" like this:
      - https://pds-gamma.jpl.nasa.gov/api/products?limit=100&q=lid%20eq%20urn%3Anasa%3Apds%3Ainsight_documents&only-summary=false
  - <u>Associated Issues:</u>
    - https://github.com/NASA-PDS/pds-api/issues/83

Note: This has been identified as a false failure.

- **<u>Test Case DOI-UI.7</u>**
  - <u>Description:</u> As a user, I want to acquire a DOI for a PDS4 product that has been registered and is publicly accessible
  - <u>Result:</u> Fail
  - <u>Severity:</u> High
  - <u>Issue:</u>
    - DOI-UI can not display the update and release page in testing environment.
  - <u>Associated Issues:</u>
    - https://github.com/NASA-PDS/pds-doi-ui/issues/42
    - https://github.com/NASA-PDS/pds-doi-ui/issues/87

- **<u>Test Case DOI-UI.2</u>**
  - <u>Description</u>: As a SA, I don't want security vulnerabilities in the public UI.
  - <u>Result</u>: Fail
  - <u>Severity</u>: Low
  - <u>Issue</u>:
    - There are still Vulnerabilities listed after running npm install
    - Running "npm audit fix" didn't fix it.
  - <u>Associated Issues</u>:
    - https://github.com/NASA-PDS/pds-doi-ui/issues/35

- ## **Test VAL.1**
  - <u>Description:</u> Validate warns "document standard id ... is not correct" on good labels
  - <u>Result</u>: Fail
  - <u>Severity</u>: High
  - <u>Issue:</u>
    - Document products refer to various file formats, and validate incorrectly throws warnings on files that are valid
  - <u>Associated Issues:</u>
    - https://github.com/NASA-PDS/validate/issues/429
      - o It's in work. PR has already been created, and should be done before the release in December.

- **<u>Test Case VAL.2</u>**
  - <u>Description:</u> As a user, I want to check that all Internal References are valid references to other PDS4 products within the current validating bundle.
  - <u>Result:</u> Fail
  - <u>Severity:</u> High
  - <u>Issue:</u>
    - validate should catch that the browse product's reference to a LID in this bundle doesn't exist. Eventually and maybe ideally, validate should catch that the data product's reference to a LID outside this bundle doesn't exist. Search for "xxx" in the .xml files. Validate now catches neither.
  - <u>Associated Issues:</u>
    - https://github.com/NASA-PDS/validate/issues/416
   - has been fixed but not yet tagged in a release

All Requirements assigned to Integration and Testing have been tested.

All improvements assigned to Integration and Testing have been tested.

All Defect corrections assigned to Integration and Testing have been tested.

- Code Coverage not currently generated by PDS CI/CD
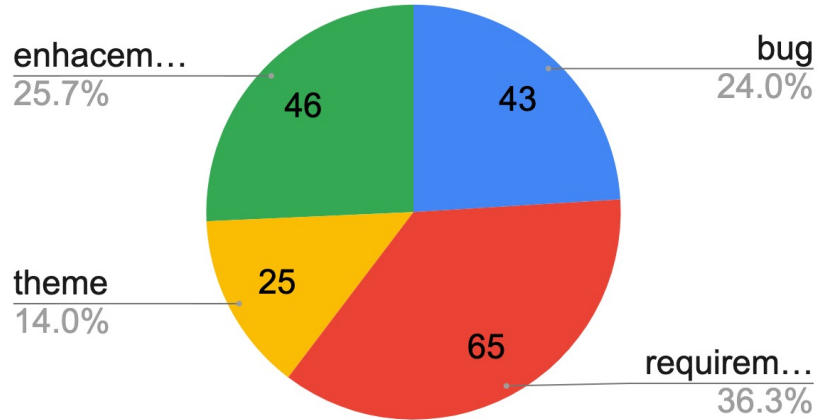- Tentatively planned for FY22

Jet Propulsion Laboratory
California Institute of Technology
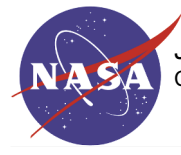
File	files	blank	comment	code
PLAID	212	19033	8628	1033622
validate	628	20017	16122	303231
pds4-information-model	196	12311	8111	173577
pds4-jparser	243	16829	10918	158414
pds-doi-ui	50	570	141	42850
nasa-pds.github.io	145	11839	5326	40259
pds-deep-archive	104	1628	2689	15260
pds-doi-service	156	4391	5049	15027
transform	80	1515	3714	11578
mi-label	104	1649	3340	10860
registry-api-service	76	1653	649	8450
pds-view	57	1494	2439	7218
harvest	107	1843	1911	5387
pds-registry-mgr-elastic	82	1567	1730	5284
pds-registry-app	43	1646	738	5179
pds-github-util	72	1394	493	4005
pds-api	8	372	0	3072
pds-api-client	14	134	72	2615
supplementer	34	624	672	1999
pds-api-javalib	9	151	125	1924
roundup-action	38	528	362	1593
pds-registry-common	31	409	488	1346
feedback-widget	15	244	117	1319
pds-api-notebook	10	324	5395	1049
api-search-query-lexer	12	231	154	677
ldd-mgmt	24	313	110	671
pds-template-repo-python	24	313	110	671
pds-wds-react	11	112	0	659
pdsen-maven-parent	8	154	112	650
pds-template-repo-java	16	217	326	594
pds-wds-web	13	85	7	518
archive-analytics	24	168	105	385
gh-action-pds4-ldd	9	85	9	297
pdsen-corral	4	103	0	278
Sum	2659	103946	80162	1860518

Defect Summary (before I&T)

Tickets categories

enhacem…
25.7%

46

bug
24.0%

43

theme
14.0%

25

65

requirem…
36.3%

Bug status

open
4.4%

2

43

closed
95.6%

Bug's severity

unknown
8.9%

4

5

low
11.1%

high
26.7%

12

24

medium
53.3%
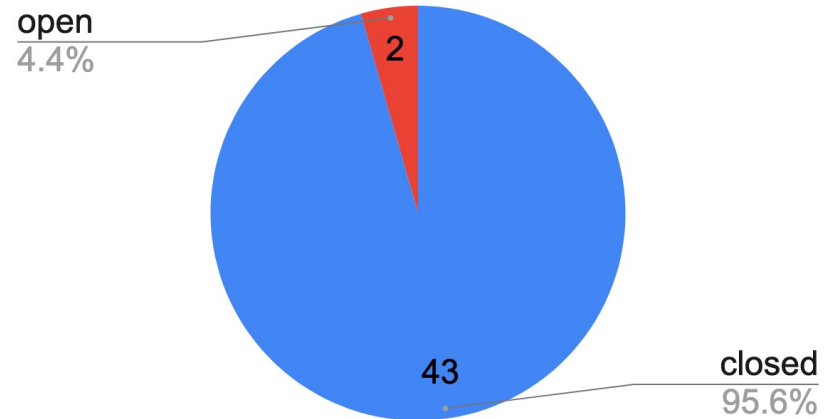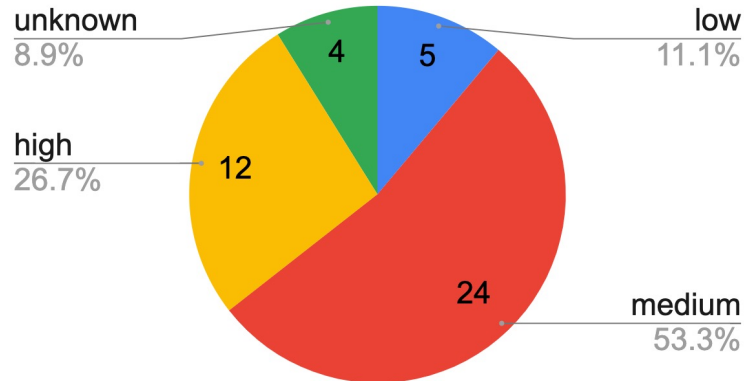
Open critical and high severity defects

Issue	Criticality	Workaround
NASA-PDS/pds-doi-ui#87 When I try to reload a reserve which has been updated, the web page does not update	s.high	DOI UI release has been deferred from this build.
NASA-PDS/validate#429 validate warns "document standard id ... is not correct" on good labels	s.high	Validate release has been deferred from this build.

Action Item Status

- No formal Request for Actions from TRR

Planned Deviations

"CCB" process defined with PDS Software Working Group

See details and rational on https://github.com/NASA-PDS/pds-swg/issues?q=label%3AB12.0+label%3Achange-request

Deviation metrics

Component	EPICS Planned	EPICS Planned realized	EPICS realized	Comment
cloud-initiative	1	1	1	
devops	1	1	4	Critical component to handle the growth of the dev team and keep our sanity
pds-api	7	7	12	A few additional requirements for example raised by the deep-archive now being a client of the API and the deployment on AWS
pds-registry-app	2	2	5	New requirements because of deployment on AWS
Deep archive	1	1	2	
DOI service	3	3	4	
UX/Web Design	6	4	4	
Information model	4	3	5	
PLAID	0	0	2	Activity managed outside the scope of the PDS Engineering Node development team
validate	3	2	2	

Other deviations after I&T

- **DOI UI** is not ready to be released due to critical bugs found at I&T
- **Validate** has one high level bug which prevent from releasing the update at I&T
- **PLAID** was not released due to personal missing for packaging

→ **Action**: specific intermediate releases will be done for each component and bugs are addressed.

Review Board

Backup

Key Test Cases

- PDS API + Registry Services
  - All PDS API requirements / enhancements - all of these requirements are must-have/should-have and critical basis for other components of system
    - pds-api#24 [registry] Handle PDS Supplemental Metadata
    - pds-api#76 [pds-api] Improve API Performance
    - pds-api#75 [pds-api] B12.0 API Response Improvements
    - pds-api#77 [pds-api] PDS4 Product Relationships
    - pds-api#81 [pds-api] B12.0 Improve API query handling
    - pds-api#84 [pds-api] Initial Google-like Search

- LDDTool:
  - pds4-information-model#240 Improve argument handling using argument parsing library

Key Test Cases (Cont.)

- DOI Service + UI
  - pds-doi-service#187 As a SA, I want the operational deployment of the service to be secure
  - pds-doi-service#103 As the PDS, I want to mint DOIs through DataCite
  - pds-doi-ui#25 As a user, I want to search for a DOI and associated metadata by LID/LIDVID
  - pds-doi-ui#41 As a user, I want to acquire a DOI for a PDS4 product prior to it's public release of the data

Key Test Cases (Cont.)

- Validate
  - validate#367 As a user, I want to validate all files referenced by a Product_Document
  - validate#308 As a user, I want to check that all Internal References are valid references to other PDS4 products within the current validating bundle
  - validate#164 As a user, I want to validate PDF files are PDF/A
  - validate#361 validate does not check Header of a File_Area_Ancillary nor does not provide a meaningful error message for an incorrect Table_Character offset