

Release Notes

PD4 Information Model Version 1.9.0.0

Build 8a Release

September 29, 2017

These notes detail the changes made to the PDS4 Information Model and contained in Release 1.9.0.0. These changes include those approved by the CCB since Version 1.8.0.0 and bug fixes since Version 1.8.0.0. The released documents include:

1. index_1900.html – Information Model Specification
2. PDS4_PDS_1900.xsd – Common Schema
3. PDS4_PDS_1900.sch – Common Schematron
4. PDS4_PDS_1900.xml – Label for Common Schema and Schematron
5. PDS4_PDS_DD_1900.html – Data Dictionary (html)
6. PDS4_PDS_DD_1900.pdf – Data Dictionary (pdf)
7. PDS4_PDS_JSON_1900.JSON – Information Model (JSON)
8. PDS4_PDS_JSON_1900_DOM.JSON – Information Model (JSON)
9. PDS4_PDS_OWL_1900.rdf – Information Model (OWL-DL)
10. PDS4_DISP_1900.xsd – Display LDD Schema
11. PDS4_DISP_1900.sch – Display LDD Schematron
12. PDS4_DISP_1900.xml – Label for Display Schema and Schematron

CCB approved changes made since the release of Version 1.8.0.0

1. CCB-162 - Move <md5_checksum> from Object_Statistics to Byte_Stream
 - a. Deprecate <md5_checksum> as an attribute in Object_Statistics.
 - b. Add <md5_checksum> as an optional attribute of Byte_Stream.
 - c. Revise the definition of <md5_checksum> to allow its use with objects that are smaller than a file.
2. CCB-165 - Ambiguity of ASCII_Numeric_Base
 - a. Modify descriptions for these data types in the Information Model to:
ASCII_Numeric_Base2: "The ASCII Numeric Base2 class indicates an ASCII character representation of a non-negative unsigned integer in base 2. Must consist of the characters 0 and 1. May not be preceded by any sign (+/-) notation."

- b. ASCII_Numeric_Base8: "The ASCII Numeric Base8 class indicates an ASCII character representation of a non-negative unsigned integer in base 8. Must consist of the characters 0 through 7. May not be preceded by any sign (+/-) notation."
 - c. ASCII_Numeric_Base16: "The ASCII Numeric Base16 class indicates an ASCII character representation of a non-negative unsigned integer in base 16. Must consist of the characters 0 through 9, and A through F or a through f. May not be preceded by any sign (+/-) notation."
3. CCB-166 - Deprecate bit_mask from IM
 - a. Deprecate bit_mask in the Object_Statistics class.
4. CCB-171 - Split hardware-compatible ASCII numeric types from the unbounded
 - a. Change the basetypes of ASCII_Integer and ASCII_NonNegative_Integer. Ensuring that the new basetypes validate the requirements expressed by Table 5A-3 correctly.
 - b. Clarify the definitions of ASCII_Integer, ASCII_NonNegative_Integer, and ASCII_Real, set minimum/maximum value ranges, and use stricter XML Schema base types.
5. CCB-172 - Add movie format(s) to list of acceptable documents.
 - a. Add "MPEG-4" to the list of values for Document_File:document_standard_id with the description "The Document_File is governed by the standard Moving Picture Experts Group (MPEG), ISO/IEC 14496-14, 14496-10 and 14496-3 subject to the restrictions laid out in the Document Products section of the PDS4 Standards Reference."
6. CCB-176 - Update Node names in the IM
 - a. Change the node names for from "Planetary Rings" to "Ring-Moon Systems" and "Imaging" to "Cartography and Imaging Sciences Discipline".
7. CCB-178 - Internal Reference Implementation
 - a. Define two new data types, ASCII_Local_Identifier and ASCII_Local_Identifier_Reference.
 - b. The XML Schema base types are xs:ID and xs:IDREF respectively.
 - c. Change the data types of the attributes <local_identifier> and <local_identifier_reference> to ASCII_Local_Identifier and ASCII_Local_Identifier_Reference respectively.
 - d. Deprecated <DD_Association.local_identifier> and added <DD_Association.identifier_reference> to allow references within the local namespace and also external namespaces. (Bugfix after node testing.)
8. CCB-179 - In PDS4 'pds' namespace, use ASCII_NonNegative_Integer where value must be >=0
 - a. For attributes that currently have a data type of ASCII_Integer and a minimum value of zero (0), change the data type to ASCII_NonNegative_Integer.
9. CCB-180 - Clarify whether namespace abbreviation in labels must correspond to namespace_id
 - a. Update, document, and post the Namespace Registry.
 - b. LDDTool already ensures that the namespace prefix is identical to the namespace_id in the generated XML Schemas.
10. CCB-181: Clarify whether newlines are allowed in PDS DSV 1 (L.Nagdimunov)
 - a. No IM changes specified or implemented.
11. CCB-182 - Clarify whether CDATA is allowed

- a. No IM changes specified or implemented.
12. CCB-183 - IM contradicts SR on how many stewards to a namespace
 - a. Rejected/Denied
13. CCB-184 -The xs:choice element does not validate as expected when minOccurs and maxOccurs are both '1'.
 - a. Bugfix: Update LDDTool to remove "minOccurs" and "maxOccurs" for attributes in a choice list.
14. CCB-185 - Allow multiple instances of purpose and processing_level (in Primary_Result_Summary)
 - a. Change the cardinality from "1..1" to "1..Unbounded" for Primary_Result_Summary/purpose and Primary_Result_Summary/processing_level.
15. CCB-191 - Add Indian Space Research Organisation (ISRO) to the Namespace Registry
 - a. Create an entry for the Indian Space Research Organisation (ISRO) in the PDS4 Namespace Registry.
 - b. Update the IM.
16. CCB-192: Add Product_Metadata_Supplemental
 - a. Add the new class: Product_Metadata_Supplemental
 - b. Deprecate Product_Update
 - c. The specific changes are detailed in the SCR.
17. CCB-193: Add Geosciences and Radio Science as permissible values for discipline_name (S.Slavney)
 - a. Add "Geosciences" and "Radio Science" as permissible values for discipline_name in the Information Model and Data Dictionary.

Bug Fixes

1. CCB-184 was a bug fix.

Other Significant Updates External to the Common Dictionary

1. Updated the ingested Local Data Dictionaries (LDDs) in the PDS4 Information Model Master Database.
 - a. Updated the ingested Rings LDD to reflect the latest version 1510.
 - b. Ingested the Cartography LDD version 1701.
2. Updated section 3 "Acknowledgements" and added section 28 "The Team" to the Information Specification document.