Standard Values Quick Reference

A number of attributes in the PDS common classes have standard value lists. You can look the standard values up in either the *Data Dictionary - Abridged* document or the Schematron file that comes with the PDS4 master schema. Both can be rather tedious to sort through.

Following are the most commonly used standard value lists for quick reference. They're sorted first by the attribute name, then by the context in which it appears. Many of these appear in several different classes, and the standard value lists depend on which class the attribute appears in, and sometimes - as in the case of <*reference_type*> - it depends on the containing class one or two levels above that. We'll try to keep these updated as changes and additions propagate to the master schema.

Note that spelling counts - including capitalization and use of underscores vs. blanks. Type these values **exactly** as they're shown below or you will get a validation error from the Schematron file.

As of 2020-07-27, these have been updated to reflect the Release 1.14.0.0 (1E00) schemas.

<bundle_type>

In <Bundle>

- Archive
- Supplemental

<collection_type>

In <Collection>

- Browse
- Calibration
- Context
- Data
- Document
- Geometry
- Miscellaneous
- SPICE Kernel
- XML Schema

<data_type>

Follow the links below for a thumbnail description of each data type.

In character table fields (fixed width or delimited)

- ASCII_AnyURI
- ASCII_BibCode
- ASCII_Boolean
- ASCII_DOI
- ASCII_Date_DOY
- ASCII_Date_Time_DOY
- ASCII_Date_Time_DOY_UTC
- ASCII_Date_Time_YMD
- ASCII_Date_Time_YMD_UTC
- ASCII_Date_YMD
- ASCII_Directory_Path_Name
- ASCII_File_Name
- ASCII_File_Specification_Name
- ASCII_Integer
- ASCII_LID
- ASCII_LIDVID
- ASCII_LIDVID_LID
- ASCII_MD5_Checksum
- ASCII_NonNegative_Integer
- ASCII_Numeric_Base16
- ASCII_Numeric_Base2
- ASCII_Numeric_Base8
- ASCII_Real
- ASCII_String
- ASCII_Time
- ASCII_VID
- UTF8_String

In binary table fields

- ComplexLSB16
- ComplexLSB8
- ComplexMSB16
- ComplexMSB8
- IEEE754LSBDouble
- IEEE754LSBSingle
- IEEE754MSBDouble
- IEEE754MSBSingle
- SignedBitString
- SignedByte
- SignedLSB2
- SignedLSB4
- SignedLSB8
- SignedMSB2
- SignedMSB4
- SignedMSB8
- UnsignedBitString
- UnsignedByte
- UnsignedLSB2
- UnsignedLSB4
- UnsignedLSB8
- UnsignedMSB2
- UnsignedMSB4
- UnsignedMSB8
- ASCII_AnyURI
- ASCII_BibCode
- ASCII_Boolean
- ASCII_DOI
- ASCII_Date_DOY
- ASCII_Date_Time_DOY
- ASCII_Date_Time_DOY_UTC
- ASCII_Date_Time_YMD
- ASCII_Date_Time_YMD_UTC
- ASCII_Date_YMD
- ASCII_Directory_Path_Name
- ASCII_File_Name
- ASCII_File_Specification_Name
- ASCII_Integer
- ASCII_LIDVID
- ASCII_LIDVID_LID
- ASCII_MD5_Checksum
- ASCII_NonNegative_Integer
- ASCII_Numeric_Base16
- ASCII_Numeric_Base2
- ASCII_Numeric_Base8
- ASCII_Real
- ASCII_String
- ASCII_Time
- ASCII_VID
- UTF8_String
- ASCII_LID

In array elements

- ComplexLSB16
- ComplexLSB8
- ComplexMSB16
- ComplexMSB8
- IEEE754LSBDouble
- SignedBitString
- SignedByte
- SignedLSB2
- SignedLSB4
- SignedLSB8
- UnsignedBitString
- UnsignedByte
- UnsignedLSB2
- UnsignedLSB4
- UnsignedLSB8

In bit fields

- SignedBitString
- UnsignedBitString

<discipline_name>

In <Primary_Result_Summary>/<Science_Facets>

- Atmospheres
- Fields
- Flux Measurements
- Geosciences
- Imaging
- Particles
- Radio Science
- Ring-Moon Systems
- Small Bodies
- Spectroscopy

<document_standard_id>

In <Document_File>

- 7-Bit ASCII Text
- Encapsulated Postscript
- GIF
- HTML
- JPEG
- LaTEX
- MPEG-4
- Microsoft Excel
- Microsoft Word
- PDF
- PDF/A
- PNG
- Postscript
- Rich Text
- TIFF
- UTF-8 Text

<domain>

In <Primary_Result_Summary>/<Science_Facets>

- Atmosphere
- Dynamics
- Heliosheath
- Heliosphere
- Interior
- Interstellar
- Ionosphere
- Magnetosphere
- Rings
- Surface

<facet*N*>

In <Primary_Result_Summary>/<Science_Facets>

The allowed values for <*facet1*> and <*facet2*> depend on the value of <*discipline_name*>, but are independent of each other. Not all disciplines have a *facet2* value list, and there is no requirement to use these values if they are not applicable to your data. This table shows the *discipline_name/facet* correspondences:

discipline_name	*facet1*	*facet2*
Atmospheres	• Structure • Meteorology	*not used*
Fields	• Electric • Magnetic	• Background • Waves
Flux Measurements	• Photometry • Polarimetry	*not used*
Imaging	• Grayscale • Color • Movie • Color Movie	*not used*
Particles	• Ions • Electrons • Neutrals	• Cosmic Ray • Solar Energetic • Energetic • Plasma
Ring-Moon Systems	• Satellite Astrometry • Ring Compositional Map • Ring Occultation Profile • Ring Thermal Map	*not used*
Small Bodies	• Dynamical Properties • Lightcurve • Meteoritics • Physical Properties • Production Rates • Shape Model • Taxonomy • Dust Study • Historical Reference • Gas Study	*not used*
Spectroscopy	• 2D • Linear • Spectral Cube • Spectral Image • Tabulated	*not used*

If you have suggestions for additional facet values, please contact your PDS node representative.

<field_delimiter>

- Comma
- Horizontal Tab
- Semicolon
- Vertical Bar

<geom:kernel_provenance>

This attribute occurs in the Geometry discipline dictionary and namespace.

- Mixed
- Predicted
- Provenance Not Applicable
- Reconstructed

<local_reference_type>

This attribute, defined in the core PDS4 namespace, will be assigned enumerated value lists in discipline and mission dictionaries. The contexts listed below refer to these namespaces by their PDS-assigned prefixes:

In <disp:Display_Settings>

- display_settings_to_array

In <geom:Coordinate_Space_Reference>

- to_reference_coordinate_space

In <geom:Expanded_Geometry>

- to_expanded_geometry

In <geom:Image_Display_Geometry>

- display_to_data_object

In <part:Particle_Observation>

- particle_observation_to_aligned_values
- particle_observation_to_axis_values
- particle_observation_to_face_values
- particle_observation_to_observation_values

In <spec:Axis_Bin_Set>

- spectral_characteristics_to_array_axis

In <spec:Axis_Uniformly_Sampled>

- spectral_characteristics_to_array_axis

In <spec:Spectral_Characteristics>

- spectral_characteristics_to_array_object

In <spec:Spectral_Lookup>

- spectral_characteristics_to_bin_center_values
- spectral_characteristics_to_bin_width_values

In <wave:Wave_Observation>

- wave_observation_to_axis_values
- wave_observation_to_face_values
- wave_observation_to_observation_values

<member_status>

In <Bundle_Member_Entry>

- Primary
- Secondary

nilReason

This is an XML attribute that appears inside an element tag when that element is being explicitly defined as 'nil'. Very few PDS label attributes can be declared to be 'nil', but here's an example of what it might look like if you are, for example, labelling a product that doesn't really have a data collection time span:

```
<start_date_time xsi:nil="true" nilReason="inapplicable"/>
```

The allowed values for *nilReason* are:

- inapplicable
- anticipated
- missing
- unknown

<parsing_standard_id>

In <Header>

- 7-Bit ASCII Text
- CDF 3.4 ISTP/IACG
- FITS 3.0
- ISIS2
- ISIS2 History Label
- ISIS3
- PDS DSV 1
- PDS ODL 2
- PDS3
- Pre-PDS3
- UTF-8 Text
- VICAR1
- VICAR2

In <Inventory>

- PDS DSV 1

In <SPICE_Kernel>

- SPICE

In <Stream_Text>

- 7-Bit ASCII Text
- PDS3
- UTF-8 Text

In <Table_Delimited>

- PDS DSV 1

In <XML_Schema>

- Schematron ISO/IEC 19757-3:2006
- XML Schema Version 1.1

<processing_level>

In <Primary_Result_Summary>

- Calibrated
- Derived
- Partially Processed [*data that is reduced but not* Calibrated]
- Raw
- Telemetry

<purpose>

In <Primary_Result_Summary>

- Calibration
- Checkout
- Engineering
- Navigation
- Observation Geometry
- Science

<record_delimiter>

Everywhere in PDS4 where this attribute occurs it is required to have the same value:

- Carriage-Return Line-Feed

<reference_type>

In <Bundle_Member_Entry>

- bundle_has_browse_collection
- bundle_has_calibration_collection
- bundle_has_context_collection
- bundle_has_data_collection
- bundle_has_document_collection
- bundle_has_geometry_collection
- bundle_has_member_collection
- bundle_has_miscellaneous_collection
- bundle_has_schema_collection
- bundle_has_spice_kernel_collection

In <Inventory>

- inventory_has_member_product

In <Investigation_Area>/<Internal_Reference>

- ancillary_to_investigation *in* ***Product_Ancillary***
- bundle_to_investigation *in* ***Product_Bundle***
- collection_to_investigation *in* ***Product_Collection***
- document_to_investigation *in* ***Product_Document***
- data_to_investigation *in* ***Product_Observational***

In <Observing_System_Component>/<Internal_Reference>

- is_airborne
- is_facility
- is_instrument
- is_instrument_host
- is_other
- is_telescope

Use *is_facility* for ground-based observatories and labs. Use *is_airborne* for balloons, aircraft, sounding rockets, etc., that serve as observing platforms. Use *is_other* for anything that doesn't clearly fit in one of the other categories.

In <Reference_List>/<Internal_Reference> in Bundles

- bundle_to_associate
- bundle_to_document
- bundle_to_errata
- bundle_to_instrument
- bundle_to_instrument_host
- bundle_to_investigation
- bundle_to_resource
- bundle_to_target

In <Reference_List>/<Internal_Reference> in Collections

- collection_to_associate
- collection_to_ancillary
- collection_to_bundle
- collection_to_browse
- collection_to_calibration
- collection_to_context
- collection_curated_by_node
- collection_to_data
- collection_to_document
- collection_to_errata
- collection_to_geometry
- collection_to_instrument
- collection_to_instrument_host
- collection_to_investigation
- collection_to_personnel
- collection_to_resource
- collection_to_schema
- collection_to_spice_kernel
- collection_to_target

In <Reference_List>/<Internal_Reference> in Ancillary Products

- ancillary_to_data
- ancillary_to_document

In <Reference_List>/<Internal_Reference> in Browse Products

- browse_to_browse
- browse_to_data
- browse_to_document
- browse_to_thumbnail

In <Reference_List>/<Internal_Reference> in Context Products

- context_to_associate
- facility_to_instrument
- facility_to_investigation
- facility_to_telescope
- instrument_to_document
- instrument_to_facility
- instrument_to_instrument_host
- instrument_to_observatory
- instrument_to_telescope
- instrument_host_to_document
- instrument_host_to_instrument
- instrument_host_to_investigation
- instrument_host_to_target
- investigation_to_document
- investigation_to_facility
- investigation_to_instrument
- investigation_to_instrument_host
- investigation_to_target
- investigation_to_telescope
- node_to_personnel
- node_to_agency
- node_to_manager
- node_to_operator
- node_to_data_archivist
- resource_to_instrument
- resource_to_instrument_host
- resource_to_investigation
- resource_to_target
- target_to_document
- target_to_instrument
- target_to_instrument_host
- target_to_investigation
- telescope_to_airborne
- telescope_to_facility
- telescope_to_instrument
- telescope_to_observatory

In <Reference_List>/<Internal_Reference> in Document Products

- document_to_associate
- document_to_investigation
- document_to_instrument_host
- document_to_instrument
- document_to_target

In <Reference_List>/<Internal_Reference> in Observational Products

- data_curated_by_node
- data_to_ancillary_data
- data_to_associate
- data_to_browse
- data_to_calibrated_product
- data_to_calibration_document
- data_to_calibration_product
- data_to_derived_product
- data_to_document
- data_to_geometry
- data_to_raw_product
- data_to_resource
- data_to_spice_kernel
- data_to_thumbnail

In <Reference_List>/<Source_Product_External>

- data_to_calibrated_source_product
- data_to_derived_source_product
- data_to_partially_processed_source_product
- data_to_raw_source_product
- data_to_telemetry_source_product

In <Reference_List>/<Source_Product_Internal>

- data_to_calibrated_source_product
- data_to_derived_source_product
- data_to_partially_processed_source_product
- data_to_raw_source_product
- data_to_telemetry_source_product

In <Target_Identification>/<Internal_Reference>

- bundle_to_target *in* ***Product_Bundle***
- collection_to_target *in* ***Product_Collection***
- data_to_target *in* ***Product_Observational***
- document_to_target *in* ***Product_Document***

<type>

In <Investigation_Area>

- Individual Investigation
- Mission
- Observing Campaign
- Other Investigation

In <Observation_Area> (or <Context_Area>)/<Target_Identification>

- Asteroid
- Astrophysical
- Calibration Field
- Calibrator
- Centaur *(see note below)*
- Comet
- Dust
- Dwarf Planet
- Equipment
- Exoplanet System
- Galaxy
- Laboratory Analog
- Magnetic Field
- Meteoroid
- Meteoroid Stream
- Nebula
- Planet
- Planetary Nebula
- Planetary System
- Plasma Cloud
- Plasma Stream
- Ring
- Sample
- Satellite
- Star
- Star Cluster
- Sun
- Trans-Neptunian Object

Some targets, particularly small body targets, correspond to more than one of the listed *type* values. The <type> attribute may be repeated in these cases. If you have observed something that does not have a reasonable corresponding *type* value in the above list, please contact your PDS node consultant as soon as possible with details.

In <Observing_System_Component>

- Airborne
- Aircraft
- Artificial Illumination
- Balloon
- Facility
- Instrument
- Laboratory
- Literature Search
- Naked Eye
- Observatory
- Spacecraft
- Suborbital Rocket
- Telescope

In <Product_Context>/<Facility>

- Laboratory
- Observatory

In <Product_Context>/<Instrument>

Note: <type> *in the* Instrument *context product has been deprecated since IM release 1.12.0.0 (the 1C00 schema files) and replaced by the* <Type_List_Area> *subclass. Please contact your PDS Node for assistance with this if you find yourself faced with the prospect of creating an* Instrument *context object.*

In <Product_Context>/<Instrument_Host>

- Aircraft
- Balloon
- Lander
- Rover
- Spacecraft
- Suborbital Rocket

In <Product_Context>/<Investigation>

- Field Campaign
- Individual Investigation
- Mission
- Observing Campaign
- Other Investigation

In <Product_Context>/<Target>

- Asteroid
- Astrophysical
- Calibration Field
- Calibrator
- Centaur
- Comet
- Dust
- Dwarf Planet
- Equipment
- Exoplanet System
- Galaxy
- Meteroid
- Meteroid Stream
- Nebula
- Planet
- Planetary Nebula
- Planetary System
- Plasma Cloud
- Plasma Stream
- Ring
- Satellite
- Star
- Star Cluster
- Trans-Neptunian Object

<wavelength_range>

In <Primary_Result_Summary>/<Science_Facets>

- Far Infrared
- Gamma Ray
- Infrared
- Microwave
- Millimeter
- Near Infrared
- Radio
- Submillimeter
- Ultraviolet
- Visible
- X-ray