

# PDS4 Information Model Specification

PDS4 Information Model Specification Team

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## **1 Introduction**

This document presents the PDS4 Information Model Specification for all components of the Planetary Data System (PDS).

## **2 Audience**

This specification is intended for use by programmers and data engineers who require formal definitions of various parts of the Planetary Data System in order to support development of data sets, archiving utilities, and interfaces involving PDS holdings or operations.

## **3 Acknowledgements**

The PDS4 Data Dictionary and the PDS4 Information Model is a joint effort involving representatives from each of the PDS nodes functioning as the PDS4 Data Design Working Group.

## **4 Scope**

This document defines all classes in use in the PDS, including those classes used to define archival elements as well as classes used for high-level descriptions and operational support. It also documents the associations among classes. Figure 1 illustrates a few of the main classes using a Concept Map diagram.

## **5 Applicable Documents**

The starting point for this document was the PDS3 Information Model Specification (version 0.070916t, 8 September 2008). Deficiencies in PDS3 were a major motivation in developing PDS4, however; so the relationship between the two specifications is largely of historical interest. Relevant to both documents is: Reference Model for an Open Archival Information System (OAIS), CCSDS 650.0-B-1, Blue Book, January 2002.

## **6 Terminology**

This document uses very specific engineering terminology to describe the various structures involved. It is particularly important that readers who have absorbed the PDS Standards Reference bear in mind that terms which are familiar in that context can have very different meanings in the present document. Please consult the Glossary for definitions whenever there is

Figure 1: PDS Information Model - Concept Map

any possibility of confusion.

Following are some definitions of essential terms used throughout this document.

An "attribute" is a property or characteristic that allows both identification and distinction.

A "class" is the set of attributes which identifies a family. A class is generic – a template from which individual members of each family may be constructed.

An "object" is a specific instance of a class.

For example, an electromagnetic wave may be represented mathematically as

$$\mathbf{i}_x A \cos(\omega t - \mathbf{k} \cdot \mathbf{r} - \varphi)$$

where there are five explicit attributes: polarization  $\mathbf{i}_x$ , amplitude  $A$ , frequency  $\omega$ , wave vector  $\mathbf{k}$  (which defines the propagation direction), and phase  $\varphi$ . Although shown here as constants, these attributes may be complex functions of other variables; for example, there is an implicit

sixth attribute "time" which defines both the beginning and end of the electromagnetic wave. Together these six attributes identify the class (i.e., the family) of all electromagnetic waves. If we then define a coordinate system, specify values for the attributes above, and impose time constraints, we would have an electromagnetic wave object. We would need a different list of attributes to identify a river, a musical score, or a television set, thus these would be different classes.

For this document we identify two special types of objects – the "data object" and the "description object." The data object contains "data," and (by itself) is not otherwise constrained. The description object contains information about another object, such as a data object. By linking a data object with a description object we create a pair which includes both the data and enough information that we can start to read and interpret the bits.

A description object can (and often does) exist without being physically accompanied by another object. The object it describes may not be physical (e.g., a space mission which, although it has physical components, is itself a concept) or it may not be practical to include the physical object (e.g., the planet Saturn).

An "association" is a defined relationship between classes. It has one direction. The association in the opposite direction is called an inverse relation.

"Cardinality" is the number of values allowed to an attribute or association in a single class. Cardinality in general is stated as a range with a minimum and maximum. For example, an attribute that may be multi-valued will have a cardinality of "1..\*". A cardinality where the minimum and maximum are the same is often shown as the single value. For example, an attribute required to have exactly one value will have a cardinality of "1". When a value is required the minimum cardinality is at least 1. At least one value is always required.

"Entity" is a generic term used to refer to specific attributes or associations listed in a class definition.

Within this document, the term "model" is used to refer to a collection of classes and associations that describe a functional subsection of the Planetary Data System.

## 7 Document Contents

Sections 8 through 16 contain the specification for PDS4. The lowest level building blocks (classes) are defined first, then these are used to construct classes at higher levels; for active users of PDS4, the material in Section 9 should seem familiar, but the terminology may be new. The classes in section 12 provide context (instrument, mission, node, etc.).

Section 8: the basic component classes

Section 9: the data description classes

Section 10: the "tagged" classes, the data objects with their descriptions

Section 11: product classes, which are formed from combinations of the above

Section 12: context classes (commonly associated with the PDS Catalog)

Section 13: packaging classes

Section 14: classes needed for operating and maintaining the PDS

Section 15: data type classes

Section 16: the information object class

Each section begins with a brief outline, including a hierarchy of the definitions which follow. In some cases a class is defined to group several subclasses when the class itself never appears in PDS (a "phantom" class). To facilitate cross-referencing, the classes are listed alphabetically within each section. Subsections begin with a note on the position within the hierarchy and a brief description of the class. The heart of each subsection is the class definition table. Sections are often accompanied by a UML diagram which shows the relationships among classes graphically.

Class definition tables comprise five columns. The left column is used to separate the table into functional blocks of contiguous rows. The "hierarchy" block restates the position of the class within the definitional hierarchy, and the "subclass" block identifies any subclasses which may exist (be derived from the current class). Attribute and Association blocks list the properties, characteristics, and relationships of the class, some of

which may be inherited from parent classes. The "referenced from" block lists classes which may "call" the class being defined.

Within Attribute blocks, the "entity" column lists the properties and characteristics which identify the class and distinguish it from others. The "Indicator" column (far right) tells whether the attribute is optional (O), restricted (R), or both; a restricted attribute has been inherited from a parent class but its use is more narrow than the parent would allow. The "Cardinality" column (middle) shows the number of values allowed. A required attribute for which only one value is allowed will have cardinality "1". A required attribute for which one or more values is allowed will have cardinality "1.\*". If a parent's attribute has cardinality "1.\*" but the child's cardinality is "1", the Indicator column should show "R". The "Value" column (fourth) includes the indicator Data Dictionary (DD) when a set of valid values for the attribute are provided in the dictionary. A few attributes that represent types have their valid values included in this column.

The Association blocks are handled similarly. The "Entity" column lists relationships among classes using fabricated, but intuitive, names which are unique and consistent across the Specification. The "Value" column (fourth), which is rarely used in the Attribute blocks, lists the class to which the relationship is made.

During construction of the Specification some classes have been subsumed. In particular, any subclass which does nothing more than provide multiple values for a single attribute (e.g., `data_set_target`) or any subclass which merely grouped non-repeating attributes (e.g., `data_set_information`) was subsumed. Only subclasses that grouped several attributes and that repeated were defined explicitly as separate classes (e.g., `software_online`).

Sections 17-19 contain supplementary information which may be useful in interpreting the remainder of the Specification.

## 8 Observational Data Products

This section provides the observational product classes.

The class hierarchy is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ Product
+ + Product_File_Text
```

Figure 2: Basic Component UML Class Diagram

```
+ + Product_Observational
+ + Product_Update
```

The class hierarchy above includes 4 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

## 8.1 Product

**Root Class:** Product

**Role:** Concrete

**Class Description:** A Product is a uniquely identified object that is managed by a registry/repository. It consists of one or more tagged data objects.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product			
<b>Subclass</b>	Product_AIP Product_Attribute_Definition Product_Browse Product_Bundle Product_Class_Definition Product_Collection Product_Context Product_DIP Product_DIP_Deep_Archive Product_Data_Set_PDS3 Product_Document Product_File_Repository Product_File_Text Product_Instrument_Host_PDS3 Product_Instrument_PDS3 Product_Mission_PDS3 Product_Observational Product_Proxy_PDS3 Product_SIP Product_SPICE_Kernel Product_Service Product_Software Product_Subscription_PDS3 Product_Target_PDS3 Product_Thumbnail Product_Update Product_Volume_PDS3 Product_Volume_Set_PDS3 Product_XML_Schema Product_Zipped			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 8.2 Product\_File\_Text

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product File Text consists of a single text file with ASCII character encoding.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_File_Text			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	file_area.Product_File_Text reference_list.Product_File...	1 0..1	File_Area_Text Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 8.3 Product\_Observational

**Root Class:** Product

**Role:** Concrete

**Class Description:** A Product\_Observational is a set of one or more information objects produced by an observing system.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Product . Product_Observational		
<b>Subclass</b>	none		
<b>Attribute</b>	none		
<b>Inherited Attribute</b>	none		
<b>Association</b>	file_area.Product_Observati... file_area_supplemental.Prod... observation_area.Product_Ob... reference_list.Product_Obse...	1..* 0..* 1 0..1	File_Area_Observational File_Area_Observational_Supp Observation_Area Reference_List
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area
<b>Referenced from</b>	none		

### 8.4 Product\_Update

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product Update class defines a product consisting of update information and optional references to other products.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Update			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Update	1 0..1	Update Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

## 9 Observational Digital Objects

This section provides the observational product classes and their fundamental data structure classes.

The class hierarchy for Tagged Digital Objects is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format and provides a visual representation of the classes in relation to their parent classes.

```
+ + Axis_Array
+ + Element_Array
+ + Field
+ + + Field_Binary
+ + + Field_Bit
+ + + Field_Character
+ + + Field_Delimited
+ + Group
+ + + Group_Field_Binary
+ + + Group_Field_Character
+ + + Group_Field_Delimited
+ + Packed_Data_Fields
+ + Record
+ + + Record_Binary
+ + + Record_Character
+ + + Record_Delimited
+ + Byte_Stream
+ + + Array
+ + + + Array_2D
+ + + + + Array_2D_Image
+ + + + + Array_2D_Map
+ + + + + Array_2D_Spectrum
+ + + + Array_3D
+ + + + + Array_3D_Image
+ + + + + Array_3D_Movie
+ + + + + Array_3D_Spectrum
+ + + Encoded_Byte_Stream
+ + + + Encoded_Header
+ + + Parsable_Byte_Stream
+ + + + Header
+ + + + Stream_Text
+ + + + Table_Delimited
+ + + Table_Base
+ + + + Table_Binary
```

Figure 3: Tagged Digital Object UML Class Diagram

```
+ + + + Table_Character
+ + + Band_Bin
+ + + Band_Bin_Set
```

The class hierarchy above includes 37 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

## 9.1 Array

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array class defines a homogeneous N-dimensional array of scalars. The Array class is the parent class for all n-dimensional arrays of scalars.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array			
<b>Subclass</b>	Array_2D Array_3D			
<b>Attribute</b>	axes.Array axis_index_order.Array description.Array offset.Array	1 1 0..1 1	Last Index Fastest	
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream	0..1 0..1		
<b>Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Axis_Array.Array has_Element_Array.Array	0..1 0..1 1 0..* 1	Special_Constants Object_Statistics Digital_Object Axis_Array Element_Array	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 9.2 Array\_2D

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array 2D class is the parent class for all two dimensional array based classes.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>R</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_2D			
<b>Subclass</b>	Array_2D_Image Array_2D_Map Array_2D_Spectrum			
<b>Attribute</b>	axes.Array_2D	1	2	R
<b>Inherited Attribute</b>	axis_index_order.Array description.Array offset.Array local_identifier.Byte_Stream name.Byte_Stream	1 0..1 1 0..1 0..1	Last Index Fastest	
<b>Association</b>	has_Axis_Array.Array_2D	2	Axis_Array	R
<b>Inherited Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array	0..1 0..1 1 1	Special_Constants Object_Statistics Digital_Object Element_Array	
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

### 9.3 Array\_2D\_Image

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array 2D Image class is an extension of the Array 2D class and defines a two dimensional image.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Role</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_2D . . . . Array_2D_Image			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	axis_index_order.Array description.Array offset.Array axes.Array_2D local_identifier.Byte_Stream name.Byte_Stream	1 0..1 1 1 0..1 0..1	Last Index Fastest   2	R
<b>Association</b>	has_Display_2d_Image.Array_....	0..1	Display_2D_Image	
<b>Inherited Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array has_Axis_Array.Array_2D	0..1 0..1 1 1 2	Special_Constants Object_Statistics Digital_Object Element_Array Axis_Array	R
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

#### 9.4 Array\_2D\_Map

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array 2D Map class is an extension of the Array 2D class and defines a two dimensional map.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Role</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_2D . . . . Array_2D_Map			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	axis_index_order.Array description.Array offset.Array axes.Array_2D local_identifier.Byte_Stream name.Byte_Stream	1 0..1 1 1 0..1 0..1	Last Index Fastest   2	R
<b>Association</b>	has_Display_2d_Image.Array_....	0..1	Display_2D_Image	
<b>Inherited Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array has_Axis_Array.Array_2D	0..1 0..1 1 1 2	Special_Constants Object_Statistics Digital_Object Element_Array Axis_Array	R
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

## 9.5 Array\_2D\_Spectrum

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array 2D Spectrum class is an extension of the Array 2D class and defines a two dimensional spectrum.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Role</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_2D . . . . Array_2D_Spectrum			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	axis_index_order.Array description.Array offset.Array axes.Array_2D local_identifier.Byte_Stream name.Byte_Stream	1 0..1 1 1 0..1 0..1	Last Index Fastest   2	R
<b>Association</b>	has_Display_2d_Image.Array_....	0..1	Display_2D_Image	
<b>Inherited Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array has_Axis_Array.Array_2D	0..1 0..1 1 1 2	Special_Constants Object_Statistics Digital_Object Element_Array Axis_Array	R
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

## 9.6 Array\_3D

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array 3D class is the parent class for all three dimensional array based classes.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Role</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_3D			
<b>Subclass</b>	Array_3D_Image Array_3D_Movie Array_3D_Spectrum			
<b>Attribute</b>	axes.Array_3D	1	3	R
<b>Inherited Attribute</b>	axis_index_order.Array description.Array offset.Array local_identifier.Byte_Stream name.Byte_Stream	1 0..1 1 0..1 0..1	Last Index Fastest	
<b>Association</b>	has_Axis_Array.Array_3D	3	Axis_Array	R
<b>Inherited Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array	0..1 0..1 1 1	Special_Constants Object_Statistics Digital_Object Element_Array	
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

## 9.7 Array\_3D\_Image

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array 3D Image class is an extension of the Array 3D class and defines a three dimensional image.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Role</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_3D . . . . Array_3D_Image			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	axis_index_order.Array description.Array offset.Array axes.Array_3D local_identifier.Byte_Stream name.Byte_Stream	1 0..1 1 1 0..1 0..1	Last Index Fastest   3	R
<b>Association</b>	none			
<b>Inherited Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array has_Axis_Array.Array_3D	0..1 0..1 1 1 3	Special_Constants Object_Statistics Digital_Object Element_Array Axis_Array	R
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

## 9.8 Array\_3D\_Movie

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array 3D Movie class is an extension of the Array 3D class and defines a movie as a set of two dimensional images in a time series.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Role</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_3D . . . . Array_3D_Movie			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	axis_index_order.Array description.Array offset.Array axes.Array_3D local_identifier.Byte_Stream name.Byte_Stream	1 0..1 1 1 0..1 0..1	Last Index Fastest   3	R
<b>Association</b>	none			
<b>Inherited Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array has_Axis_Array.Array_3D	0..1 0..1 1 1 3	Special_Constants Object_Statistics Digital_Object Element_Array Axis_Array	R
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

## 9.9 Array\_3D\_Spectrum

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Array 3D Spectrum class is an extension of the Array 3D class and defines a three dimensional spectrum.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Role</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_3D . . . . Array_3D_Spectrum			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	axis_index_order.Array description.Array offset.Array axes.Array_3D local_identifier.Byte_Stream name.Byte_Stream	1 0..1 1 1 0..1 0..1	Last Index Fastest   3	R
<b>Association</b>	none			
<b>Inherited Association</b>	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array has_Axis_Array.Array_3D	0..1 0..1 1 1 3	Special_Constants Object_Statistics Digital_Object Element_Array Axis_Array	R
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

## 9.10 Axis\_Array

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Axis Array class is used as a component of the array class and defines an axis of the array.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Axis_Array			
<b>Subclass</b>	none			
<b>Attribute</b>	axis_name.Axis_Array elements.Axis_Array sequence_number.Axis_Array unit.Axis_Array	1 1 1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_Band_Bin_Set.Axis_Array	0..1	Band_Bin_Set	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Array Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum			

### 9.11 Band\_Bin

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Band\_Bin class specifies the characteristics of an individual spectral band in a spectral cube.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Band_Bin			
<b>Subclass</b>	none			
<b>Attribute</b>	band_number.Band_Bin band_width.Band_Bin center_wavelength.Band_Bin detector_number.Band_Bin filter_number.Band_Bin grating_position.Band_Bin original_band.Band_Bin scaling_factor.Band_Bin standard_deviation.Band_Bin value_offset.Band_Bin	1 1 1 0..1 0..1 0..1 0..1 0..1 0..1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Band_Bin_Set			

### 9.12 Band\_Bin\_Set

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Band\_Bin\_Set class contains the spectral characteristics for all the spectral bands in a cube.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Band_Bin_Set			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_band_bin.Band_Bin_Set	1..*	Band_Bin	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Axis_Array			

### 9.13 Byte\_Stream

**Root Class:** Tagged\_Digital\_Object

**Role:** Abstract

**Class Description:** The Byte Stream class defines a stream of bytes.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream			
<b>Subclass</b>	Array Encoded_Byte_Stream Parsable_Byte_Stream Table_Base			
<b>Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream	0..1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 9.14 Element\_Array

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Element Array class is used as a component of the array class and defines an element of the array.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Element_Array			
<b>Subclass</b>	none			
<b>Attribute</b>	data_type.Element_Array  scaling_factor.Element_Array unit.Element_Array value_offset.Element_Array	1  0..1 0..1 0..1	ComplexLSB16 ComplexLSB8 ComplexMSB16 ComplexMSB8 IEEE754LSBDouble IEEE754LSBSingle IEEE754MSBDouble IEEE754MSBSingle SignedBitString SignedByte SignedLSB2 SignedLSB4 SignedLSB8 SignedMSB2 SignedMSB4 SignedMSB8 UnsignedBitString UnsignedByte UnsignedLSB2 UnsignedLSB4 UnsignedLSB8 UnsignedMSB2 UnsignedMSB4 UnsignedMSB8	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Array Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum			

## 9.15 Encoded\_Byte\_Stream

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Encoded Byte Stream class defines byte streams that must be decoded by software before use. These byte streams must only use standard encodings. The Encoded Byte Stream class is the parent class for all encoded byte streams.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Encoded_Byte_Stream			
<b>Subclass</b>	Encoded_Binary Encoded_Header Encoded_Image			
<b>Attribute</b>	description.Encoded_Byte_St... encoding_standard_id.Encode... object_length.Encoded_Byte_... offset.Encoded_Byte_Stream	0..1 1 0..1 1		
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream	0..1 0..1		
<b>Association</b>	data_object.Encoded_Byte_St...	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	File_Area_Observational_Supplemental			

## 9.16 Encoded\_Header

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Encoded Header class describes a header that has been encoded using an encoding scheme that is compliant to an external standard.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Encoded_Byte_Stream . . . Encoded_Header			
<b>Subclass</b>	none			
<b>Attribute</b>	encoding_standard_id.Encode...	1	TIFF	R
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Encoded_Byte_St... object_length.Encoded_Byte.... offset.Encoded_Byte_Stream	0..1 0..1 0..1 0..1 1		
<b>Association</b>	none			
<b>Inherited Association</b>	data_object.Encoded_Byte_St...	1	Digital_Object	
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

### 9.17 Field

**Root Class:** Tagged\_Digital\_Child

**Role:** Abstract

**Class Description:** The Field class defines a field of a record and is the parent class of all specific field classes. The Field class defines a field of a record or a field of a group and is the parent class of all specific field classes.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Field			
<b>Subclass</b>	Field_Binary Field_Bit Field_Character Field_Delimited			
<b>Attribute</b>	field_number.Field name.Field	0..1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 9.18 Field\_Binary

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

***Class Description:*** The Field.Binary class defines a field of a binary record or a field of a binary group.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Field . . Field_Binary		
<b>Subclass</b>	none		
<b>Attribute</b>	data_type.Field_Binary	1	ASCII_AnyURI ASCII_Boolean ASCII_DOI ASCII_Date ASCII_Date.DOY ASCII_Date.Time ASCII_Date.Time.DOY ASCII_Date.Time.UTC ASCII_Date.Time.YMD 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 ComplexLSB16 ComplexLSB8 ComplexMSB16 ComplexMSB8 IEEE754LSBDouble IEEE754LSBSingle IEEE754MSBDouble IEEE754MSBSingle SignedBitString SignedByte SignedLSB2 SignedLSB4 SignedLSB8 SignedMSB2 SignedMSB4 SignedMSB8 UTF8_String UnsignedBitString UnsignedByte UnsignedLSB2 UnsignedLSB4 UnsignedLSB8

## 9.19 Field\_Bit

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Field\_Bit class provides parameters for extracting one field out of a string of bytes which contains packed data (that is, data values either smaller than a single byte, or crossing byte boundaries, or both.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Field . . Field_Bit			
<b>Subclass</b>	none			
<b>Attribute</b>	data_type.Field_Bit  description.Field_Bit field_format.Field_Bit name.Field_Bit scaling_factor.Field_Bit start_bit.Field_Bit stop_bit.Field_Bit unit.Field_Bit value_offset.Field_Bit	1  0..1 0..1 1 0..1 1 1 0..1 0..1	SignedBitString UnsignedBitString	R
<b>Inherited Attribute</b>	field_number.Field	0..1		
<b>Association</b>	associated_Special_Constant...	0..1	Special_Constants	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Packed_Data_Fields			

## 9.20 Field\_Character

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Field\_Character class defines a field of a character record or a field of a character group.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Field . . Field_Character		
<b>Subclass</b>	none		
<b>Attribute</b>	data_type.Field_Character	1	ASCII_AnyURI ASCII_Boolean ASCII_DOI ASCII_Date ASCII_Date.DOY ASCII_Date.Time ASCII_Date.Time.DOY ASCII_Date.Time.UTC ASCII_Date.Time.YMD 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
	description.Field_Character	0..1	
	field_format.Field_Character	0..1	
	field_length.Field_Character	1	
	field_location.Field_Character	1	
	name.Field_Character	1	
	scaling_factor.Field_Character	0..1	
	unit.Field_Character	0..1	
	value_offset.Field_Character	0..1	
<b>Inherited Attribute</b>	field_number.Field	0..1	
<b>Association</b>	associated_Special_Constant...	0..1	Special_Constants
	associated_Statistics.Field...	0..1	Field_Statistics
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Group_Field_Character Record_Character		



## 9.21 Field\_Delimited

*Root Class:* Tagged\_Digital\_Child

*Role:* Concrete

*Class Description:* The Field\_Delimited class defines a field of a delimited record or a field of a delimited group.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Field . . Field_Delimited		
<b>Subclass</b>	none		
<b>Attribute</b>	data_type.Field_Delimited  description.Field_Delimited field_format.Field_Delimited maximum_field_length.Field_... name.Field_Delimited scaling_factor.Field_Delimited unit.Field_Delimited value_offset.Field_Delimited	1  0..1 0..1 0..1 1 0..1 0..1 0..1	ASCII.AnyURI ASCII.Boolean ASCII.DOI ASCII.Date ASCII.Date.DOY ASCII.Date.Time ASCII.Date.Time.DOY ASCII.Date.Time.UTC ASCII.Date.Time.YMD 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
<b>Inherited Attribute</b>	field_number.Field	0..1	
<b>Association</b>	associated_Special_Constant... associated_Statistics.Field...	0..1 0..1	Special_Constants Field_Statistics
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Group.Field_Delimited Record_Delimited		

## 9.22 Group

**Root Class:** Tagged\_Digital\_Child

**Role:** Abstract

**Class Description:** The Group class defines a group of (repeating) fields and, possibly, (sub) groups; it is the parent class of all specific group classes.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Group			
<b>Subclass</b>	Group_Field_Binary Group_Field_Character Group_Field_Delimited			
<b>Attribute</b>	fields.Group group_number.Group groups.Group repetitions.Group	1 0..1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 9.23 Group\_Field\_Binary

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Group\_Field\_Binary class allows a group of table fields.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Group . . Group_Field_Binary			
<b>Subclass</b>	none			
<b>Attribute</b>	group_length.Group_Field_Bi... group_location.Group_Field_...	1 1		
<b>Inherited Attribute</b>	fields.Group group_number.Group groups.Group repetitions.Group	1 0..1 1 1		
<b>Association</b>	has_Group_Field_Binary.Grou...	1..*	Field_Binary Group_Field_Binary	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Group_Field_Binary Record_Binary			

## 9.24 Group\_Field\_Character

*Root Class:* Tagged\_Digital\_Child

*Role:* Concrete

*Class Description:* The Group\_Field\_Character class allows a group of table fields.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Group . . Group_Field_Character			
<b>Subclass</b>	none			
<b>Attribute</b>	group_length.Group_Field_Ch... group_location.Group_Field_...	1 1		
<b>Inherited Attribute</b>	fields.Group group_number.Group groups.Group repetitions.Group	1 0..1 1 1		
<b>Association</b>	has_Group_Field_Character.G...	1..*	Field_Character Group_Field_Character	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Group_Field_Character Record_Character			

## 9.25 Group\_Field\_Delimited

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Field\_Group\_Delimited class allows a group of delimited fields.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_Digital_Child . Group . . Group_Field_Delimited			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	fields.Group group_number.Group groups.Group repetitions.Group	1 0..1 1 1		
<b>Association</b>	has_Delimited_Field_Grouped...	1..*	Field_Delimited Group_Field_Delimited	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Group_Field_Delimited Record_Delimited			

## 9.26 Header

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Header class describes a data object header.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>In</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Header			
<b>Subclass</b>	none			
<b>Attribute</b>	object_length.Header parsing_standard_id.Header	1 1	7-Bit ASCII Text FITS 3.0 ISIS2 ISIS3 PDS DSV 1 PDS ODL 2 PDS3 Pre-PDS3 UTF-8 Text VICAR1 VICAR2	R R
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... offset.Parsable_Byte_Stream	0..1 0..1 0..1 1		
<b>Association</b>	none			
<b>Inherited Association</b>	data_object.Parsable_Byte_S...	1	Digital_Object	
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

## 9.27 Packed\_Data\_Fields

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Packed\_Data\_Fields class contains field definitions for extracting packed data from the associated byte string field.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Packed_Data_Fields			
<b>Subclass</b>	none			
<b>Attribute</b>	bit_fields.Packed_Data_Fields description.Packed_Data_Fields	1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_Field_Bit.Packed_Data_F...	1..*	Field_Bit	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Field_Binary			

## 9.28 Parsable\_Byte\_Stream

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Parsable Byte Stream class defines byte streams that have standard parsing rules. The Parsable Byte Stream class is the parent class for all parsable byte streams.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream			
<b>Subclass</b>	Header SPICE_Kernel Service_Description Stream_Text Table_Delimited XML_Schema			
<b>Attribute</b>	description.Parsable_Byte_S... object_length.Parsable_Byte... offset.Parsable_Byte_Stream parsing_standard_id.Parsabl...	0..1 0..1 1 1		
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream	0..1 0..1		
<b>Association</b>	data_object.Parsable_Byte_S...	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	File_Area_Observational_Supplemental			

## 9.29 Record

**Root Class:** Tagged\_Digital\_Child

**Role:** Abstract

**Class Description:** The Record class defines a record of a file and is the

parent class of all specific record classes.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Record			
<b>Subclass</b>	Record_Binary Record_Character Record_Delimited			
<b>Attribute</b>	fields.Record groups.Record	1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 9.30 Record\_Binary

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Record\_Binary class is a component of the table class and defines a record of the table.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Record . . Record_Binary			
<b>Subclass</b>	none			
<b>Attribute</b>	record_length.Record_Binary	1		
<b>Inherited Attribute</b>	fields.Record groups.Record	1 1		
<b>Association</b>	has_Table_Field.Record_Binary	1..*	Field_Binary Group_Field_Binary	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Table_Binary			

### 9.31 Record\_Character

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Record\_Character class is a component of the table class and defines a record of the table.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Record . . Record_Character			
<b>Subclass</b>	none			
<b>Attribute</b>	record_length.Record_Character	1		
<b>Inherited Attribute</b>	fields.Record groups.Record	1 1		
<b>Association</b>	has_Character_Field.Record_...	1..*	Field_Character Group_Field_Character	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Table_Character Transfer_Manifest			

### 9.32 Record\_Delimited

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Record\_Delimited class is a component of the delimited table (spreadsheet) class and defines a record of the delimited table.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Inc</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Record . . Record_Delimited			
<b>Subclass</b>	none			
<b>Attribute</b>	maximum_record_length.Recor...	0..1		
<b>Inherited Attribute</b>	fields.Record groups.Record	1 1		
<b>Association</b>	has_Delimited_Field.Record_...	1..*	Field_Delimited Group_Field_Delimited	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Inventory Table_Delimited			

### 9.33 Stream\_Text

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Stream text class defines a text object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Stream_Text		
<b>Subclass</b>	Checksum_Manifest		
<b>Attribute</b>	record_delimiter.Stream_Text	1	carriage-return line-fee
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... object_length.Parsable_Byte... offset.Parsable_Byte_Stream parsing_standard_id.Parsabl...	0..1 0..1 0..1 0..1 1 1	
<b>Association</b>	none		
<b>Inherited Association</b>	data_object.Parsable_Byte_S...	1	Digital_Object
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental File_Area_Text		

### 9.34 Table\_Base

**Root Class:** Tagged\_Digital\_Object

**Role:** Abstract

**Class Description:** The Table Base class defines a heterogeneous repeating record of scalars. The Table Base class is the parent class for all heterogeneous repeating record of scalars.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Table_Base			
<b>Subclass</b>	Table_Binary Table_Character			
<b>Attribute</b>	description.Table_Base offset.Table_Base records.Table_Base	0..1 1 1		
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream	0..1 0..1		
<b>Association</b>	data_object.Table_Base	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 9.35 Table\_Binary

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Table Binary class is an extension of table base and defines a simple binary table.

	Entity	Card	Value/Class	
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Table_Base . . . Table_Binary			
<b>Subclass</b>	none			
<b>Attribute</b>	record_delimiter.Table_Binary	0..1		
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Table_Base offset.Table_Base records.Table_Base	0..1 0..1 0..1 1 1		
<b>Association</b>	has_Record.Table_Binary uniformly_sampled.Table_Binary	1 0..1	Record_Binary Uniformly_Sampled	
<b>Inherited Association</b>	data_object.Table_Base	1	Digital_Object	
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

### 9.36 Table\_Character

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Table Character class is an extension of table base and defines a simple character table.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Table_Base . . . Table_Character		
<b>Subclass</b>	Transfer_Manifest		
<b>Attribute</b>	record_delimiter.Table_Char...	1	carriage-return line-fee
<b>Inherited Attribute</b>	local_identifer.Byte_Stream name.Byte_Stream description.Table_Base offset.Table_Base records.Table_Base	0..1 0..1 0..1 1 1	
<b>Association</b>	has_Record.Table_Character uniformly_sampled.Table_Cha...	1 0..1	Record_Character Uniformly_Sampled
<b>Inherited Association</b>	data_object.Table_Base	1	Digital_Object
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

### 9.37 Table\_Delimited

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Table\_Delimited class defines a simple table (spreadsheet) with delimited fields and records.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Table_Delimited		
<b>Subclass</b>	Inventory		
<b>Attribute</b>	field_delimiter.Table_Delim...  parsing_standard_id.Table_D... record_delimiter.Table_Deli... records.Table_Delimited	1  1 1 1	comma horizontal tab semicolon vertical bar PDS DSV 1 carriage-return line-fee
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... object_length.Parsable_Byte... offset.Parsable_Byte_Stream	0..1 0..1 0..1 0..1 1	
<b>Association</b>	has_delimited_record.Table... uniformly_sampled.Table_Del...	1 0..1	Record_Delimited Uniformly_Sampled
<b>Inherited Association</b>	data_object.Parsable_Byte_S...	1	Digital_Object
<b>Referenced from</b>	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

## 10 Observational Data Component

This section provides the observational product classes and their component classes.

The digital product class hierarchy is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ Product_Components
+ + Alias
+ + Alias_List
+ + Citation_Information
+ + Context_Area
+ + + Observation_Area
+ + Discipline_Area
+ + External_Reference
+ + File_Area
+ + + File_Area_Observational
+ + + File_Area_Observational_Supplemental
+ + + File_Area_SPICE_Kernel
+ + + File_Area_Text
+ + Identification_Area
+ + Internal_Reference
+ + Investigation_Area
+ + Mission_Area
+ + Modification_Detail
+ + Modification_History
+ + Primary_Result_Summary
+ + Reference_List
+ + Target_Identification
+ + Time_Coordinates
+ + Update_Entry
+ + Special_Constants
+ + Uniformly_Sampled
+ + File
+ + Observing_System_Component
+ + Vector_Component
+ + + Observing_System
+ + + Display_2D_Image
+ + + Field_Statistics
+ + + Object_Statistics
+ + + Update
```

```

+ + + Vector
+ + + Vector_Cartesian_3
+ + + + Vector_Cartesian_3_Acceleration
+ + + + Vector_Cartesian_3_Pointing
+ + + + Vector_Cartesian_3_Position
+ + + + Vector_Cartesian_3_Velocity

```

The class hierarchy above includes 40 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure.. The following sections present the data product classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

## 10.1 Alias

**Root Class:** Product.Components

**Role:** Concrete

**Class Description:** The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product.Components . Alias			
<b>Subclass</b>	none			
<b>Attribute</b>	alternate_id.Alias alternate_title.Alias comment.Alias	0..1 0..1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Alias.List			

## 10.2 Alias\_List

**Root Class:** Product.Components

**Role:** Concrete

**Class Description:** The Alias\_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.

Figure 4: Product UML Class Diagram



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Alias_List			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	alias.Alias_List	1..*	Alias	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Identification_Area			

### 10.3 Citation\_Information

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Citation\_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Citation_Information			
<b>Subclass</b>	none			
<b>Attribute</b>	author_list.Citation_Inform... description.Citation_Inform... editor_list.Citation_Inform... keyword.Citation_Information publication_year.Citation_I...	0..1 1 0..1 0..* 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Identification_Area			

### 10.4 Context\_Area

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Context Area provides context information for a product.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product_Components . Context_Area			
<b>Subclass</b>	Observation_Area			
<b>Attribute</b>	comment.Context_Area	0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_discipline_area.Context... has_investigation_area.Cont... has_mission_area.Context_Area has_observing_system.Contex... has_primary_result_descript... has_target_identification.C... has_time_coordinates.Contex...	0..1 0..* 0..1 0..* 0..1 0..* 0..1	Discipline_Area Investigation_Area Mission_Area Observing_System Primary_Result_Summary Target_Identification Time_Coordinates	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Bundle Product_Collection Product_Document Product_SPICE_Kernel			

## 10.5 Discipline\_Area

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Discipline area allows the insertion of discipline specific metadata.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product_Components . Discipline_Area			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Context_Area Observation_Area Product_Context			

## 10.6 Display\_2D\_Image

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Display\_2D\_Image class provides attributes to enable the display of a 2 dimensional image.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Display_2D_Image			
<b>Subclass</b>	none			
<b>Attribute</b>	line_display_direction.Disp...  sample_display_direction.Di...	1  1	Down Up Right	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Array_2D_Image Array_2D_Map Array_2D_Spectrum			

## 10.7 External\_Reference

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The External\_Reference class is used to reference a source outside the PDS registry system.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . External_Reference			
<b>Subclass</b>	External_Reference_Extended			
<b>Attribute</b>	description.External_Reference doi.External_Reference reference_text.External_Ref...	0..1 0..1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Observing_System_Component Reference_List			

## 10.8 Field\_Statistics

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Field\_Statistics class provides a set of metrics for a column formed by a field in a repeating record.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Field_Statistics			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Field_Statistics local_identifier.Field_Stat... maximum.Field_Statistics mean.Field_Statistics median.Field_Statistics minimum.Field_Statistics standard_deviation.Field_St...	0..1 0..1 0..1 0..1 0..1 0..1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Field_Statistics	1	Conceptual_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Field_Binary Field_Character Field_Delimited			

## 10.9 File

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The File class consists of attributes that describe a file in a data store.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . File			
<b>Subclass</b>	Document_File			
<b>Attribute</b>	comment.File creation_date_time.File file_name.File file_size.File local_identifier.File md5_checksum.File records.File	0..1 0..1 1 0..1 0..1 0..1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.File	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	File_Area_Binary File_Area_Browse File_Area_Checksum_Manifest File_Area_Encoded_Image File_Area_Inventory File_Area_Observational File_Area_Observational_Supplemental File_Area_SPICE_Kernel File_Area_Service_Description File_Area_Text File_Area_Transfer_Manifest File_Area_XML_Schema Product_Zipped			

## 10.10 File\_Area

**Root Class:** Product.Components

**Role:** Concrete

**Class Description:** The File\_Area class defines a File and its component data objects.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area			
<b>Subclass</b>	File_Area_Binary File_Area_Browse File_Area_Checksum_Manifest File_Area_Encoded_Image File_Area_Inventory File_Area_Observational File_Area_Observational_Supplemental File_Area_SPICE_Kernel File_Area_Service_Description File_Area_Text File_Area_Transfer_Manifest File_Area_XML_Schema			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 10.11 File\_Area\_Observational

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Observational class describes, for an observational product, a file and one or more tagged\_data\_objects contained within the file.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Observational			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Observat... has_tagged_data_object.File...	1 1..*	File Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum Encoded_Header Header Stream_Text Table_Binary Table_Character Table_Delimited	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Observational			

## 10.12 File\_Area\_Observational\_Supplemental

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Observational Supplemental class describes, for an observational product, additional files and one or more tagged\_data\_objects contained within the file.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Observational_Supplemental		
<b>Subclass</b>	none		
<b>Attribute</b>	none		
<b>Inherited Attribute</b>	none		
<b>Association</b>	has_File.File_Area_Observat... has_tagged_data_object.File...	1 1..*	File Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum Encoded_Binary Encoded_Byte_Stre Encoded_Header Encoded_Image Header Parsable_Byte_Stre Stream_Text Table_Binary Table_Character Table_Delimited
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_Observational		

### 10.13 File\_Area\_SPICE\_Kernel

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area SPICE Kernel class describes a file that contains a SPICE Kernel object.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_SPICE_Kernel			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_SPICE_Ke... has_tagged_data_object.File...	1 1	File SPICE_Kernel	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_SPICE_Kernel			

#### 10.14 File\_Area\_Text

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Text class describes a file that contains a text stream object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Text			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Text has_tagged_data_object.File...	1 1	File Stream_Text	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Bundle Product_File_Text			

#### 10.15 Identification\_Area

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The identification area consists of attributes that identify and name an object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Product_Components . Identification_Area		
<b>Subclass</b>	none		
<b>Attribute</b>	information_model_version.I... logical_identifier.Identifi... product_class.Identificatio...	1 1 1	1.0.0.0  Product_AIP Product_Attribute_Definition Product_Browse Product_Bundle Product_Class_Definition Product_Collection Product_Context Product_DIP Product_DIP_Deep_Archive Product_Data_Set_PDS3 Product_Document Product_File_Repository Product_File_Text Product_Instrument_Host_PID Product_Instrument_PDS3 Product_Mission_PDS3 Product_Observational Product_Proxy_PDS3 Product_SIP Product_SPICE_Kernel Product_Service Product_Software Product_Subscription_PDS3 Product_Target_PDS3 Product_Thumbnail Product_Update Product_Volume_PDS3 Product_Volume_Set_PDS3 Product_XML_Schema Product_Zipped
	title.Identification_Area	1	
	version_id.Identification_Area	1	
<b>Inherited Attribute</b>	none		
<b>Association</b>	alias_list.Identification_Area citation_information.Identi... modification_history.Identi...	0..1 0..1 0..1	Alias_List Citation_Information Modification_History
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product Product_AIP Product_Attribute_Definition Product_Browse Product_Bundle Product_Class_Definition Product_Collection Product_Context Product_DIP Product_DIP_Deep_Archive		

## 10.16 Internal\_Reference

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Internal\_Reference class is used to cross-reference other products in the PDS registry system.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Internal_Reference			
<b>Subclass</b>	none			
<b>Attribute</b>	comment.Internal_Reference lid_reference.Internal_Refe... lidvid_reference.Internal_R... reference_type.Internal_Ref...	0..1 0..1 0..1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	DD_Attribute DD_Class Information_Package_Component Investigation_Area Observing_System_Component Product_Zipped Reference_List Target_Identification Update_Entry			

## 10.17 Investigation\_Area

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Investigation\_Area class provides information about an investigation (mission, observing campaign or other coordinated, large-scale data collection effort).

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Investigation_Area			
<b>Subclass</b>	none			
<b>Attribute</b>	name.Investigation_Area type.Investigation_Area	1 1	Individual Investigation Mission Observing Campaign Other Investigation	
<b>Inherited Attribute</b>	none			
<b>Association</b>	internal_reference.Investig...	1..*	Internal_Reference	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Context_Area Observation_Area			

### 10.18 Mission\_Area

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The mission area allows the insertion of mission specific metadata.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Mission_Area			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Context_Area Observation_Area			

### 10.19 Modification\_Detail

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Modification\_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Modification_Detail			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Modification_De... modification_date.Modificat... version_id.Modification_Detail	1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Modification_History			

## 10.20 Modification\_History

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Modification\_History class tracks the history of changes made to the product once it enters the registry system.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Modification_History			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	modification_detail.Modific...	1..*	Modification_Detail	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Identification_Area			

## 10.21 Object\_Statistics

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Object\_Statistics class provides a set of values that provide metrics about the object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Object_Statistics			
<b>Subclass</b>	none			
<b>Attribute</b>	bit_mask.Object_Statistics description.Object_Statistics local_identifer.Object_Sta... maximum.Object_Statistics maximum_scaled_value.Object... md5_checksum.Object_Statistics mean.Object_Statistics median.Object_Statistics minimum.Object_Statistics minimum_scaled_value.Object... standard_deviation.Object_S...	0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Object_Statistics	1	Conceptual_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Array Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum			

## 10.22 Observation\_Area

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The observation area consists of attributes that provide information about the circumstances under which the data were collected.

	Entity	Card	Value/Class	In
<b>Hierarchy</b>	Product_Components . Context_Area . . Observation_Area			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	comment.Context_Area	0..1		
<b>Association</b>	has_investigation_area.Obse... has_observing_system.Obse... has_primary_result_descript... has_target_identification.O... has_time_coordinates.Obse...	1..* 1..* 1 1..* 1	Investigation_Area Observing_System Primary_Result_Summary Target_Identification Time_Coordinates	R R R R R
<b>Inherited Association</b>	has_discipline_area.Context... has_mission_area.Context_Area	0..1 0..1	Discipline_Area Mission_Area	
<b>Referenced from</b>	Product_Observational			

### 10.23 Observing\_System

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Observing System class describes the entire suite used to collect the data.

	Entity	Card	Value/Class
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Observing_System		
<b>Subclass</b>	none		
<b>Attribute</b>	description.Observing_System name.Observing_System	0..1 0..1	
<b>Inherited Attribute</b>	none		
<b>Association</b>	data_object.Observing_System observing_system_component....	1 1..*	Conceptual_Object Physical_Object Observing_System_Component
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Context_Area Observation_Area		

### 10.24 Observing\_System\_Component

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The Observing System Component class references one or more subsystems used to collect data. A subsystem can be an

instrument\_host, instrument, or any other similar product. Each subsystem is categorized as either a sensor or a source. If the observing system includes both a sensor and a source, Observing System Component occurs twice (once for each type) otherwise it only occurs once.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>In</b>
<b>Hierarchy</b>	Tagged_NonDigital_Child . Observing_System_Component			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Observing_Syste... name.Observing_System_Compo... type.Observing_System_Compo...	0..1 1 1	Artificial Illumination Instrument Laboratory Literature Search Naked Eye Observatory Spacecraft Telescope	
<b>Inherited Attribute</b>	none			
<b>Association</b>	external_reference.Observin... internal_reference.Observin...	0..* 0..1	External_Reference Internal_Reference	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Observing_System			

## 10.25 Primary\_Result\_Summary

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Primary\_Result\_Summary class provides a high-level description of the types of products included in the collection or bundle



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Primary_Result_Summary			
<b>Subclass</b>	none			
<b>Attribute</b>	data_regime.Primary_Result_...  description.Primary_Result_... processing_levelId.Primary_...  purpose.Primary_Result_Summary  type.Primary_Result_Summary	1..*  0..1 1  1  0..1	Dust Electric Field Electrons Far Infrared Gamma Ray Infrared Ions Magnetic Field Microwave Millimeter Near Infrared Particles Pressure Radio Sub-Millimeter Temperature Ultraviolet Visible X-Ray  Calibrated Derived Partially Processed Raw Telemetry Calibration Checkout Engineering Navigation Science Altimetry Astrometry Count E/B-Field Vectors Gravity Model Image Lightcurves Magnetometry Map Meteorology Null Result Occultation Photometry Physical Parameters Polarimetry Radiometry Reference Shape Model Spectrum	

## 10.26 Product\_Components

**Root Class:** Product\_Components

**Role:** Abstract

**Class Description:** The Product Component class is an abstract class for the components of the Product class.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product_Components			
<b>Subclass</b>	Alias Alias_List Bundle_Member_Entry Citation_Information Context_Area Discipline_Area Document_Format_Set External_Reference File_Area Identification_Area Internal_Reference Investigation_Area Mission_Area Modification_Detail Modification_History Primary_Result_Summary Reference_List Target_Identification Telemetry_Parameters Time_Coordinates Update_Entry			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 10.27 Reference\_List

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Reference\_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Reference_List			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	external_reference.Referenc... internal_reference.Referenc...	0..* 0..*	External_Reference Internal_Reference	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_AIP Product_Attribute_Definition Product_Browse Product_Bundle Product_Class_Definition Product_Collection Product_Context Product_DIP Product_DIP_Deep_Archive Product_Data_Set_PDS3 Product_Document Product_File_Repository Product_File_Text Product_Instrument_Host_PDS3 Product_Instrument_PDS3 Product_Mission_PDS3 Product_Observational Product_Proxy_PDS3 Product_SIP Product_SPICE_Kernel Product_Service Product_Software Product_Subscription_PDS3 Product_Target_PDS3 Product_Thumbnail Product_Update Product_Volume_PDS3 Product_Volume_Set_PDS3 Product_XML_Schema			

## 10.28 Special\_Constants

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Special Constants class provides a set of values

used to indicate special cases that occur in the data.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Special_Constants			
<b>Subclass</b>	none			
<b>Attribute</b>	error_constant.Special_Cons... high_instrument_saturation....  high_representation_saturat...  invalid_constant.Special_Co... low_instrument_saturation.S...  low_representation_saturati...  missing_constant.Special_Co... not_applicable_constant.Spe... saturated_constant.Special_... unknown_constant.Special_Co... valid_maximum.Special_Const...  valid_minimum.Special_Const...	0..1 0..1  0..1  0..1 0..1  0..1 0..1 0..1 0..1 0..1  0..1	-32765 255 3 65534 FF7FFFFE FFFCFFFF -32764 255 4 65535 FF7FFFFF FFFBFFFF -32766 0 2 FF7FFFFD FFFDFFFF -32767 1 16#FF7FFFC# 16#FFFEFFFF# 254 32767 65522 -32752 1 3 5 FF7FFFA FFEFFFFF	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Array Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum Field_Binary			

## 10.29 Target\_Identification

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Target\_Identification class provides detailed target identification information.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product_Components . Target_Identification			
<b>Subclass</b>	none			
<b>Attribute</b>	alternate_designation.Target_... description.Target_Identifi... name.Target_Identification type.Target_Identification	0..* 0..1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	internal_reference.Target_I...	0..1	Internal_Reference	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Context_Area Observation_Area			

## 10.30 Time\_Coordinates

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Time\_Coordinates class provides a list of time coordinates.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product_Components . Time_Coordinates			
<b>Subclass</b>	none			
<b>Attribute</b>	local_mean_solar_time.Time_... local_true_solar_time.Time_... solar_longitude.Time_Coordi... start_date_time.Time_Coordi... stop_date_time.Time_Coordin...	0..1 0..1 0..1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Context_Area Observation_Area			

### 10.31 Uniformly\_Sampled

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Uniformly\_Sampled class provides parameters for a uniformly sampled table.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_Digital_Child . Uniformly_Sampled			
<b>Subclass</b>	none			
<b>Attribute</b>	first_sampling_parameter_va... last_sampling_parameter_val... sampling_parameter_interval... sampling_parameter_name.Uni... sampling_parameter_scale.Uni...  sampling_parameter_unit.Uni...	1 1 1 1 0..1  1	Exponential Linear Logarithmic	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Inventory Table_Binary Table_Character Table_Delimited Transfer_Manifest			

### 10.32 Update

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Update class consists of update information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Update			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Update local_identifier.Update	0..1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Update update_entry.Update	1 1..*	Conceptual_Object Update_Entry	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Update			

### 10.33 Update\_Entry

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Update Entry class provides the date and description of an update.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Update_Entry			
<b>Subclass</b>	none			
<b>Attribute</b>	date_time.Update_Entry description.Update_Entry full_name.Update_Entry	1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	internal_reference.Update_E...	0..1	Internal_Reference	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Update			

### 10.34 Vector

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Vector class provides the components of either a velocity or position vector.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector			
<b>Subclass</b>	none			
<b>Attribute</b>	data_type.Vector description.Vector local_identifier.Vector name.Vector reference_frame_id.Vector  type.Vector  vector_components.Vector	1 1 0..1 1 1  1  1	ASCII_Real     ICRF MOON_ME_DE421 Acceleration Pointing Position Velocity	
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Vector vector_component.Vector	1 1..*	Conceptual_Object Vector_Component	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Geometry			

### 10.35 Vector\_Cartesian\_3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Vector\_Cartesian\_3\_Base class is the parent class of 3 element Cartesian vectors.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3			
<b>Subclass</b>	Vector_Cartesian_3_Acceleration Vector_Cartesian_3_Pointing Vector_Cartesian_3_Position Vector_Cartesian_3_Velocity			
<b>Attribute</b>	reference_frame_id.Vector_C...  x.Vector_Cartesian_3 y.Vector_Cartesian_3 z.Vector_Cartesian_3	1  1 1 1	ICRF MOON_ME_DE421	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 10.36 Vector\_Cartesian\_3\_Acceleration

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Vector\_Cartesian\_3\_Acceleration class is a 3 element Cartesian vector for acceleration coordinates.

	Entity	Card	Value/Class	In
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3 . . . Vector_Cartesian_3_Acceleration			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	reference_frame_id.Vector_C...  x.Vector_Cartesian_3 y.Vector_Cartesian_3 z.Vector_Cartesian_3	1  1 1 1	ICRF MOON_ME_DE421	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 10.37 Vector\_Cartesian\_3\_Pointing

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Vector\_Cartesian\_3\_Pointing class is a 3 element normalized Cartesian vector for pointing.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3 . . . Vector_Cartesian_3_Pointing			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	reference.frame_id.Vector_C...  x.Vector_Cartesian_3 y.Vector_Cartesian_3 z.Vector_Cartesian_3	1  1 1 1	ICRF MOON_ME_DE421	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 10.38 Vector\_Cartesian\_3\_Position

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Vector\_Cartesian\_3\_Position class is a 3 element Cartesian vector for position coordinates.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3 . . . Vector_Cartesian_3_Position			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	reference_frame_id.Vector_C...  x.Vector_Cartesian_3 y.Vector_Cartesian_3 z.Vector_Cartesian_3	1  1 1 1	ICRF MOON_ME_DE421	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 10.39 Vector\_Cartesian\_3\_Velocity

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Vector\_Cartesian\_3\_Velocity class is a 3 element Cartesian vector for velocity coordinates.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3 . . . Vector_Cartesian_3_Velocity			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	reference_frame_id.Vector_C...  x.Vector_Cartesian_3 y.Vector_Cartesian_3 z.Vector_Cartesian_3	1  1 1 1	ICRF MOON_ME_DE421	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 10.40 Vector\_Component

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The Vector\_Component class provides a component

of a vector.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Child . Vector_Component			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Vector_Component name.Vector_Component sequence_number.Vector_Comp... unit.Vector_Component value.Vector_Component	0..1 0..1 1 0..1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Vector			

Figure 5: Context Description UML Class Diagram

## 11 Document and Support Products

This section provides the document and support product classes.

The context class hierarchy is illustrated in the following diagram. This diagram presents the subclassOf relation for each class in a hierarchical (tree) format and provides a visual representation of the classes in relation to their parent classes.

```
+ + Product_Browse
+ + Product_Document
+ + Product_SPICE_Kernel
+ + Product_Thumbnail
+ + Product_XML_Schema
+ + Product_Zipped
```

The class hierarchy above includes 6 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the context classes in a table format. The table

includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

### 11.1 Product\_Browse

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product Browse class defines a product consisting of one encoded byte stream digital object.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Browse			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	file_area.Product_Browse reference_list.Product_Browse	1..* 0..1	File_Area_Browse Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 11.2 Product\_Document

**Root Class:** Product

**Role:** Concrete

**Class Description:** A Product Document is a product consisting of a single logical document that may be comprised of one or more document formats.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Document			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	context_area.Product_Document document_format_set.Product... product_description.Product... reference_list.Product_Docu...	0..1 1..* 1 0..1	Context_Area Document_Format_Set Document Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 11.3 Product\_SPICE\_Kernel

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product SPICE Kernel class defines a SPICE kernel product.

	Entity	Card	Value/Class	In
<b>Hierarchy</b>	Product . Product_SPICE_Kernel			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	context_area.Product_SPICE... file_area.Product_SPICE_Kernel reference_list.Product_SPIC...	1 1 0..1	Context_Area File_Area_SPICE_Kernel Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 11.4 Product\_Thumbnail

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product Thumbnail class defines a product consisting of one encoded byte stream digital object.

	Entity	Card	Value/Class	In
<b>Hierarchy</b>	Product . Product_Thumbnail			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	file_area.Product_Thumbnail reference_list.Product_Thum...	1 0..1	File_Area_Encoded_Image Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 11.5 Product\_XML\_Schema

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product\_XML\_Schema describes a resource used for the PDS4 implementation into XML.



	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_XML_Schema			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	file_area.Product_XML_Schema reference_list.Product_XML_...	1..* 0..1	File_Area_XML_Schema Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

## 11.6 Product\_Zipped

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product\_Zipped is a product with references to other products. The referenced products and all associated products and files are packaged into a single ZIP file.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Zipped			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	file.Product_Zipped has_zip.Product_Zipped internal_reference.Product_...	1 1 1..*	File Zip Internal_Reference	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

## 12 Document and Support Components

This section provides the document and support product classes and their component classes.

The class hierarchy is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ + Document_Format_Set
+ + + File_Area_Browse
+ + + File_Area_Encoded_Image
+ + Document_Format
+ + + + Encoded_Binary
+ + + + Encoded_Image
+ + + + SPICE_Kernel
+ + + + XML_Schema
+ + + Document_File
+ + + Document
+ + + Zip
```

The class hierarchy above includes 11 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the data product classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

### 12.1 Document

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Document class describes a document.

Figure 6: Product UML Class Diagram

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Document			
<b>Subclass</b>	none			
<b>Attribute</b>	acknowledgement_text.Document author_list.Document copyright.Document description.Document document_name.Document doi.Document editor_list.Document publication_date.Document revision_id.Document	0..1 0..1 0..1 0..1 0..1 0..1 0..1 1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Document	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Document			

## 12.2 Document\_File

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Document File class describes a file which is a part of a document.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>I</b>
<b>Hierarchy</b>	Tagged_Digital_Object . File . . Document_File			
<b>Subclass</b>	none			
<b>Attribute</b>	directory_path_name.Documen... document_standard_id.Docume...	0..1 1	7-Bit ASCII Text Encapsulated Postscript GIF HTML 2.0 HTML 3.2 HTML 4.0 HTML 4.01 JPEG LaTEX Microsoft Word PDF PDF/A PNG Postscript Rich Text TIFF UTF-8 Text	
<b>Inherited Attribute</b>	comment.File creation_date_time.File file_name.File file_size.File local_identifier.File md5_checksum.File records.File	0..1 0..1 1 0..1 0..1 0..1 0..1		
<b>Association</b>	none			
<b>Inherited Association</b>	data_object.File	1	Digital_Object	
<b>Referenced from</b>	Document_Format_Set			

### 12.3 Document\_Format

**Root Class:** Tagged\_Digital\_Child

**Role:** Concrete

**Class Description:** The Document Format provides a description of a variant of a logical document that is stored in a specific format. For example the PDS Standards Reference has HTML and PDF formatted versions.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child . Document_Format			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Document_Format format_type.Document_Format  starting_point_identifier.D...	0..1 1  0..1	multiple file single file	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Document_Format_Set			

## 12.4 Document\_Format\_Set

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Document Format Set class is a set consisting of a document format and associated files.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Document_Format_Set			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	document_file.Document_Form... document_format.Document_Fo...	1..* 1	Document_File Document_Format	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Document			

## 12.5 Encoded\_Binary

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Encoded Binary class describes a binary encoded byte stream. This class is used to describe files in the repository that are being registered using Product\_File\_Repository.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Encoded_Byte_Stream . . . Encoded_Binary		
<b>Subclass</b>	none		
<b>Attribute</b>	encoding_standard_id.Encode...	1	CCSDS Communicatio
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Encoded_Byte_St... object_length.Encoded_Byte.... offset.Encoded_Byte_Stream	0..1 0..1 0..1 0..1 1	
<b>Association</b>	none		
<b>Inherited Association</b>	data_object.Encoded_Byte_St...	1	Digital_Object
<b>Referenced from</b>	File_Area_Binary File_Area_Observational_Supplemental		

## 12.6 Encoded\_Image

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Encoded Image class is used for ancillary images in standard formats, such as JPEG.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Encoded_Byte_Stream . . . Encoded_Image			
<b>Subclass</b>	none			
<b>Attribute</b>	encoding_standard_id.Encode...	1	GIF J2C JPEG PDF PDF/A PNG TIFF	R
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Encoded_Byte_St... object_length.Encoded_Byte.... offset.Encoded_Byte_Stream	0..1 0..1 0..1 0..1 1		
<b>Association</b>	none			
<b>Inherited Association</b>	data_object.Encoded_Byte_St...	1	Digital_Object	
<b>Referenced from</b>	File_Area_Browse File_Area_Encoded_Image File_Area_Observational_Supplemental			

## 12.7 File\_Area\_Browse

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Browse class describes a file and one or more tagged\_data\_objects contained within the file.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Browse			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Browse has_tagged_data_object.File...	1 1..*	File Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum Encoded_Header Encoded_Image Header Stream_Text Table_Binary Table_Character Table_Delimited	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Browse			

## 12.8 File\_Area\_Encoded\_Image

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Encoded Image class describes a file that contains an Encoded Image object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Encoded_Image			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Encoded... has_tagged_data_object.File...	1 1	File Encoded_Image	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Thumbnail			

## 12.9 SPICE\_Kernel

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The SPICE Kernel class describes a SPICE object.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . SPICE_Kernel			
<b>Subclass</b>	none			
<b>Attribute</b>	encoding_type.SPICE_Kernel  kernel_type.SPICE_Kernel  parsing_standard_id.SPICE_K...	1  1  1	Binary Character CK DBK DSK EK FK IK LSK MK PCK SCLK SPK SPICE	R
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... object_length.Parsable_Byte... offset.Parsable_Byte_Stream	0..1 0..1 0..1 0..1 1		
<b>Association</b>	none			
<b>Inherited Association</b>	data_object.Parsable_Byte_S...	1	Digital_Object	
<b>Referenced from</b>	File_Area_SPICE_Kernel			

## 12.10 XML\_Schema

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The XML Schema class defines a resource used for the PDS4 implementation into XML.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . XML_Schema		
<b>Subclass</b>	none		
<b>Attribute</b>	parsing_standard_id.XML_Schema	1	Schematron ISO/IEC 1975 XML Schema Version 1.1
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... object_length.Parsable_Byte... offset.Parsable_Byte_Stream	0..1 0..1 0..1 0..1 1	
<b>Association</b>	none		
<b>Inherited Association</b>	data_object.Parsable_Byte_S...	1	Digital_Object
<b>Referenced from</b>	File_Area_XML_Schema		

### 12.11 Zip

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Zip class describes a zip file.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Zip			
<b>Subclass</b>	none			
<b>Attribute</b>	container_type.Zip  description.Zip	1  1	GZIP LZIP TAR ZIP	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Zipped			

Figure 7: Product UML Class Diagram

## 13 Context Products

This section provides the context product classes.

The class hierarchy is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ + Product_Context
+ + + Geometry
```

The class hierarchy above includes 2 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the data product classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

### 13.1 Geometry

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Geometry class groups geometry information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Geometry			
<b>Subclass</b>	none			
<b>Attribute</b>	local_identifier.Geometry	0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Geometry vector.Geometry	1 0..*	Conceptual_Object Vector	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 13.2 Product\_Context

*Root Class:* Product

*Role:* Concrete

*Class Description:* The Product Context class describes something that provides context and provenance for an observational product.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Context			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_discipline_area.Product... product_data_object.Product...	0..1 1	Discipline_Area Agency Facility Instrument Instrument_Host Investigation Node Other PDS_Affiliate PDS_Guest Resource Target Telescope Reference_List	
	reference_list.Product_Context	0..1	Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

Figure 8: Product UML Class Diagram

## 14 Context Components

This section provides the context product classes and their component classes.

The class hierarchy is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ + + Facility
+ + + Instrument
+ + + Instrument_Host
+ + + Investigation
+ + + Other
+ + + Resource
+ + + Target
+ + + Telescope
```

The class hierarchy above includes 8 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the data product classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

## 14.1 Facility

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Facility class provides a name and address for a terrestrial observatory or laboratory.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Facility			
<b>Subclass</b>	none			
<b>Attribute</b>	address.Facility country.Facility description.Facility name.Facility type.Facility	0..1 0..1 0..1 0..1 0..1	Laboratory Observatory	
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Facility	1	Physical_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Context			

## 14.2 Instrument

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Instrument class provides a description of a physical object that collects data.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Instrument		
<b>Subclass</b>	none		
<b>Attribute</b>	description.Instrument model_id.Instrument naif_instrument_id.Instrument name.Instrument serial_number.Instrument type.Instrument	1 0..1 0..1 0..1 0..1 1..*	Accelerometer Alpha Particle Detector Alpha Particle Xray Spectromer Altimeter Anemometer Atomic Force Microscope Barometer Biology Experiments Bolometer Camera Cosmic Ray Detector Dust Detector Electrical Probe Energetic Particle Detector Gamma Ray Detector Gas Analyzer Grinding And Drilling Tool Hygrometer Imager Imaging Spectrometer Inertial Measurement Unit Infrared Spectrometer Laser Induced Breakdown Spe Magnetometer Mass Spectrometer Microwave Spectrometer Moessbauer Spectrometer Naked Eye Neutral Particle Detector Neutron Detector Photometer Plasma Analyzer Plasma Detector Plasma Wave Spectrometer Polarimeter RADAR Radio Science Radio Spectrometer Radio Telescope Radiometer Reflectometer Spectrograph Imager Spectrometer



### 14.3 Instrument\_Host

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Instrument Host class provides a description of the physical object upon which an instrument is mounted.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Instrument_Host			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Instrument_Host naif_host_id.Instrument_Host name.Instrument_Host serial_number.Instrument_Host type.Instrument_Host  version_id.Instrument_Host	1 0..1 0..1 0..1 1  0..1	Earth Based Rover Spacecraft	
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Instrument_Host	1	Physical_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Context			

### 14.4 Investigation

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Investigation class provides a description of activities involved in the collection of data.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Investigation			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Investigation name.Investigation start_date.Investigation stop_date.Investigation type.Investigation	1 0..1 1 1 1	Individual Investigation Mission Observing Campaign Other Investigation	
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Investigation	1	Conceptual_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Context			

#### 14.5 Other

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Other class provides a description of activities involved in the collection of data which are not otherwise modeled.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Other			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Other	1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Other	1	Conceptual_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Context			

#### 14.6 Resource

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Resource class provides a description of a web resource.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Im</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Resource			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Resource name.Resource type.Resource	1 0..1 1	Information.Agency Information.Instrument Information.Instrument_Host Information.Investigation Information.Node Information.Person Information.Resource Information.Science_Portal Information.Target System.Browse System.Directory_Listing System.Registry_Query System.Search System.Transform System.Transport	
	url.Resource	1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Resource	1	Conceptual_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Context			

### 14.7 Target

*Root Class:* Tagged\_NonDigital\_Object

*Role:* Concrete

*Class Description:* The Target class provides a description of a physical object that is the object of data collection.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Target			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Target name.Target type.Target	1 0..1 0..*	Asteroid Comet Dust Dwarf Planet Galaxy Globular Cluster Meteorite Meteoroid Meteoroid Stream Nebula Open Cluster Planet Planetary Nebula Planetary System Plasma Cloud Ring Satellite Star Star Cluster Sun Terrestrial Sample Trans-Neptunian Object	
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Target	1	Physical_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Context			

## 14.8 Telescope

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Telescope class provides coordinates and parameters for terrestrial, ground-based telescopes.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Telescope		
<b>Subclass</b>	none		
<b>Attribute</b>	altitude.Telescope aperture.Telescope coordinate_source.Telescope	1 1 1	Aerial survey - North American Astronomical Doppler determined - WGS 72 Geodetic - Adindan datum Geodetic - Australian datum Geodetic - Campo Inchauspe (A Geodetic - Cape (South Africa) Geodetic - Corregio Alegre (Bra Geodetic - European 1979 datu Geodetic - European datum Geodetic - GRS 80 datum Geodetic - Hermannskogel datu Geodetic - Indian datum Geodetic - La Canoa (Venezuela Geodetic - New Zealand datum Geodetic - North American (19 Geodetic - Old Hawaiian datum Geodetic - Ordnance Survey of Geodetic - Ordnance Survey of Geodetic - Potsdam datum Geodetic - Puerto Rican (1940) Geodetic - South American dat Geodetic - Tokyo datum Geodetic - WGS 84 datum Geodetic - datum unknown Satellite determined - datum un Unknown
	description.Telescope	0..1	
	telescope_latitude.Telescope	0..1	
	telescope_longitude.Telescope	0..1	
<b>Inherited Attribute</b>	none		
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_Context		

Figure 9: Product UML Class Diagram

## 15 Aggregate Products

This section provides aggregate product classes.

The class hierarchy is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ + Product_Bundle
+ + Product_Collection
```

The class hierarchy above includes 2 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the data product classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

## 15.1 Product\_Bundle

**Root Class:** Product

**Role:** Concrete

**Class Description:** A Product\_Bundle is an aggregate product and has a table of references to one or more collections.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Bundle			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	context_area.Product_Bundle file_area.Product_Bundle member_entry.Product_Bundle product_data_object.Product... reference_list.Product_Bundle	0..1 0..1 1..* 1 0..1	Context_Area File_Area_Text Bundle_Member_Entry Bundle Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

## 15.2 Product\_Collection

**Root Class:** Product

**Role:** Concrete

**Class Description:** A Product\_Collection has a table of references to one or more basic products. The references are stored in a table called the inventory.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Collection			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	context_area.Product_Collec... file_area_inventory.Product... product_data_object.Product... reference_list.Product_Coll...	0..1 1 1 0..1	Context_Area File_Area_Inventory Collection Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

Figure 10: Product UML Class Diagram

## 16 Aggregate Components

This section provides aggregate product classes and their component classes.

The class hierarchy is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ + Bundle_Member_Entry
+ + + File_Area_Inventory
+ + + + Inventory
+ + + Bundle
+ + + Collection
```

The class hierarchy above includes 5 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the data product classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are



provided where appropriate.

## 16.1 Bundle

*Root Class:* Tagged\_NonDigital\_Object

*Role:* Concrete

*Class Description:* The Bundle class describes a collection of collections.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Bundle			
<b>Subclass</b>	none			
<b>Attribute</b>	bundle.type.Bundle description.Bundle	1 0..1	Archive Supplemental	
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Bundle	1	Conceptual_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Bundle			

## 16.2 Bundle\_Member\_Entry

*Root Class:* Product\_Components

*Role:* Concrete

*Class Description:* The Bundle Member Entry class provides a member reference to a collection.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Product_Components . Bundle_Member_Entry		
<b>Subclass</b>	none		
<b>Attribute</b>	lid_reference.Bundle_Member... lidvid_reference.Bundle_Mem... member_status.Bundle_Member...  reference_type.Bundle_Membe...	0..1 0..1 1  1	Primary Secondary bundle_has_browse_collectio bundle_has_calibration_colle bundle_has_context_collectio bundle_has_data_collection bundle_has_document_collec bundle_has_geometry_collec bundle_has_member_collecti bundle_has_schema_collectio bundle_has_spice_kernel_coll
<b>Inherited Attribute</b>	none		
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_Bundle		

### 16.3 Collection

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Collection class provides a description of a set of products.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Collection			
<b>Subclass</b>	none			
<b>Attribute</b>	collection_type.Collection  description.Collection	1  0..1	Browse Calibration Context Data Document Geometry Miscellaneous SPICE Kernel XML Schema	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Collection			

#### 16.4 File\_Area\_Inventory

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Inventory class describes a file and an inventory consisting of references to members.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Inventory			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Inventory has_tagged_data_object.File...	1 1	File Inventory	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Collection			

#### 16.5 Inventory

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Inventory class defines the inventory for mem-

bers of a collection.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Table_Delimited . . . . Inventory		
<b>Subclass</b>	none		
<b>Attribute</b>	reference_type.Inventory	1	inventory_has_member_produc
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... object_length.Parsable_Byte... offset.Parsable_Byte_Stream field_delimiter.Table_Delim...  parsing_standard_id.Table_D... record_delimiter.Table_Deli... records.Table_Delimited	0..1 0..1 0..1 0..1 1 1  1 1 1	comma horizontal tab semicolon vertical bar PDS DSV 1 carriage-return line-feed
<b>Association</b>	none		
<b>Inherited Association</b>	data_object.Parsable_Byte_S... has_delimited_record.Table... uniformly_sampled.Table_Del...	1 1 0..1	Digital_Object Record_Delimited Uniformly_Sampled
<b>Referenced from</b>	File_Area_Inventory		

## 17 Operational Products

This section provides the set of product classes used for PDS operations.

The operations class hierarchy is illustrated in the following diagram. This diagram presents the subclassOf relation for each class using a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ + Product_AIP
+ + Product_Attribute_Definition
+ + Product_Class_Definition
+ + Product_DIP
+ + Product_DIP_Deep_Archive
+ + Product_Data_Set_PDS3
+ + Product_File_Repository
+ + Product_Instrument_Host_PDS3
+ + Product_Instrument_PDS3
+ + Product_Mission_PDS3
+ + Product_Proxy_PDS3
+ + Product_SIP
+ + Product_Service
+ + Product_Software
+ + Product_Subscription_PDS3
+ + Product_Target_PDS3
+ + Product_Volume_PDS3
+ + Product_Volume_Set_PDS3
```

The class hierarchy above includes 18 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the operations classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

### 17.1 Product\_AIP

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product AIP class defines a product for the Archival Information Package.

Figure 11: Operations UML Class Diagram

	Entity	Card	Value/Class
<b>Hierarchy</b>	Product . Product_AIP		
<b>Subclass</b>	none		
<b>Attribute</b>	none		
<b>Inherited Attribute</b>	none		
<b>Association</b>	has_Information_Package_Com... product_data_object.Product... reference_list.Product_AIP	1..* 1 0..1	Information_Package_Compo Archival_Information_Packag Reference_List
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area
<b>Referenced from</b>	none		

## 17.2 Product\_Attribute\_Definition

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product Attribute Definition provides an attribute definition in XML encoding.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Attribute_Definition			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Attr...	1 0..1	DD_Attribute_Full Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.3 Product\_Class\_Definition

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product Class Definition provides a class definition in XML encoding.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Class_Definition			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Clas...	1 0..1	DD_Class_Full Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.4 Product\_DIP

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product DIP class defines a product for the Dissemination Information Package.

	Entity	Card	Value/Class
<b>Hierarchy</b>	Product . Product_DIP		
<b>Subclass</b>	none		
<b>Attribute</b>	none		
<b>Inherited Attribute</b>	none		
<b>Association</b>	has_Information_Package_Com... product_data_object.Product... reference_list.Product_DIP	1..* 1 0..1	Information_Package_Compo Dissemination_Information_P Reference_List
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area
<b>Referenced from</b>	none		

### 17.5 Product\_DIP\_Deep\_Archive

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product DIP\_Deep\_Archive class defines a product for the Dissemination Information Package for the deep archive.

	Entity	Card	Value/Class
<b>Hierarchy</b>	Product . Product_DIP_Deep_Archive		
<b>Subclass</b>	none		
<b>Attribute</b>	none		
<b>Inherited Attribute</b>	none		
<b>Association</b>	has_Information_Package_Com... product_data_object.Product... reference_list.Product_DIP_...	1..* 1 0..1	Information_Package_Compo DIP_Deep_Archive Reference_List
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area
<b>Referenced from</b>	none		

### 17.6 Product\_Data\_Set\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Data Set PDS3 product is used to create proxy labels for the data sets in the PDS3 Data Set catalog.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Data_Set_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Data...	1 0..1	Data_Set_PDS3 Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.7 Product\_File\_Repository

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product File Repository class consists of a single text file. This product is used to register a file in a repository.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_File_Repository			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	file_area.Product_File_Repo... reference_list.Product_File...	1 0..1	File_Area_Binary Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.8 Product\_Instrument\_Host\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** An Instrument Host product describes an instrument host. This product captures the PDS3 catalog instrument host information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Instrument_Host_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Inst...	1 0..1	Instrument_Host_PDS3 Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.9 Product\_Instrument\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** An Instrument product describes an instrument. This product captures the PDS3 catalog instrument information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Instrument_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Inst...	1 0..1	Instrument_PDS3 Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.10 Product\_Mission\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** An Mission product describes a mission. This product captures the PDS3 catalog mission information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Mission_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Miss...	1 0..1	Mission_PDS3 Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.11 Product\_Proxy\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product Proxy PDS3 class defines a product with enough information to register a PDS3 data product.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product . Product_Proxy_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	file_area.Product_Proxy_PDS3 reference_list.Product_Prox...	1..* 0..1	File_Area_Binary Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.12 Product\_SIP

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product SIP class defines a product for the Submission Information Package.

	Entity	Card	Value/Class
<b>Hierarchy</b>	Product . Product_SIP		
<b>Subclass</b>	none		
<b>Attribute</b>	none		
<b>Inherited Attribute</b>	none		
<b>Association</b>	has_Information_Package_Com... product_data_object.Product... reference_list.Product_SIP	1..* 1 0..1	Information_Package_Compo Submission_Information_Pack Reference_List
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area
<b>Referenced from</b>	none		

### 17.13 Product\_Service

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product Service class defines a product for registering services. Service descriptions from this product are used to register services as intrinsic registry objects.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Product . Product_Service		
<b>Subclass</b>	none		
<b>Attribute</b>	none		
<b>Inherited Attribute</b>	none		
<b>Association</b>	file_area.Product_Service reference_list.Product_Service	0..* 0..1	File_Area_Service_Description Reference_List
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area
<b>Referenced from</b>	none		

#### 17.14 Product\_Software

**Root Class:** Product

**Role:** Concrete

**Class Description:** Product Software is a product consisting of a set of one or more software formats.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Software			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_description.Product... reference_list.Product_Soft... software_format_set.Product...	1 0..1 0..*	Software Reference_List Software_Binary Software_Script Software_Source	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

#### 17.15 Product\_Subscription\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** The Product\_Subscription\_PDS3 class provides the list of subscriptions for a PDS3 subscriber.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Subscription_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	reference_list.Product_Subs... subscriber.Product_Subscrip...	0..1 1	Reference_List Subscriber_PDS3	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.16 Product\_Target\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** A target product describes a target. This product captures a reduced set of the PDS3 catalog target information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Target_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Targ...	1 0..1	Target_PDS3 Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.17 Product\_Volume\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** A Product Volume PDS3 product captures the PDS3 volume information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Volume_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Volu...	1 0..1	Volume_PDS3 Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

### 17.18 Product\_Volume\_Set\_PDS3

**Root Class:** Product

**Role:** Concrete

**Class Description:** A Product Volume Set PDS3 product captures the PDS3 volume set information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product . Product_Volume_Set_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	product_data_object.Product... reference_list.Product_Volu...	1 0..1	Volume_Set_PDS3 Reference_List	
<b>Inherited Association</b>	has_identification_area.Pro...	1	Identification_Area	
<b>Referenced from</b>	none			

## 18 Operational Components

This section provides the set of product classes used for PDS operations and their component classes..

The class hierarchy is illustrated in the following diagram. This diagram presents the subclass relation for each class in a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ Data_Object
+ + Conceptual_Object
+ + Digital_Object
+ + Physical_Object
+ + + External_Reference_Extended
+ + + File_Area_Binary
+ + + File_Area_Checksum_Manifest
+ + + File_Area_Service_Description
+ + + File_Area_Transfer_Manifest
+ + + File_Area_XML_Schema
+ Tagged_Digital_Child
+ Tagged_Digital_Object
+ + + + Service_Description
+ + + + + Checksum_Manifest
+ + + + + Transfer_Manifest
+ Tagged_NonDigital_Child
+ + DD_Association
+ + DD_Association_External
+ + DD_Permissible_Value
+ + DD_Permissible_Value_Full
+ + DD_Value_Domain
+ + DD_Value_Domain_Full
+ + NSSDC
+ + Terminological_Entry
+ Tagged_NonDigital_Object
+ + TNDO_Context
+ + + Agency
+ + + Node
+ + + PDS_Affiliate
+ + + PDS_Guest
+ + TNDO_Context_PDS3
+ + + Data_Set_PDS3
+ + + Instrument_Host_PDS3
+ + + Instrument_PDS3
```

```

+ + + Mission_PDS3
+ + + Subscriber_PDS3
+ + + Target_PDS3
+ + + Volume_PDS3
+ + + Volume_Set_PDS3
+ + TNDO_Supplemental
+ + + DD_Attribute
+ + + DD_Attribute_Full
+ + + DD_Class
+ + + DD_Class_Full
+ + + Information_Package
+ + + + Archival_Information_Package
+ + + + DIP_Deep_Archive
+ + + + Dissemination_Information_Package
+ + + + Submission_Information_Package
+ + + Information_Package_Component
+ + + Ingest_LDD
+ + + Software
+ + + Software_Binary
+ + + Software_Script
+ + + Software_Source
+ + + Symbolic_Literals_PDS

```

The class hierarchy above includes 56 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the data product classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

## 18.1 Agency

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Agency class provides a description of an entity that provides regional or national level governance over nodes within the federated Planetary Data System.



Figure 12: Product UML Class Diagram

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . Agency		
<b>Subclass</b>	none		
<b>Attribute</b>	description.Agency name.Agency	1 1	European Space Agency National Aeronautics and Space A
<b>Inherited Attribute</b>	none		
<b>Association</b>	data_object.Agency	1	Conceptual_Object
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_Context		

## 18.2 Archival Information Package

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Archival Information Package (AIP) class defines an Information Package consisting of the Content Information and the associated Preservation Description Information (PDI), which is preserved within an archive that conforms to the Open Archive Information System (OAIS) Reference Model.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package . . . Archival_Information_Package			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	description.Information_Pac...	1		
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_AIP			

### 18.3 Checksum\_Manifest

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Checksum\_Manifest class defines a two column table for file references and checksums. The table structure is compatible with the output from an MD5 checksum utility.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Stream_Text . . . . Checksum_Manifest			
<b>Subclass</b>	none			
<b>Attribute</b>	parsing_standard_id.Checksu...	1	MD5Deep 4.n	R
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... object_length.Parsable_Byte... offset.Parsable_Byte_Stream record_delimiter.Stream_Text	0..1 0..1 0..1 0..1 1 1	carriage-return line-feed	
<b>Association</b>	none			
<b>Inherited Association</b>	data_object.Parsable_Byte_S...	1	Digital_Object	
<b>Referenced from</b>	File_Area_Checksum_Manifest			

### 18.4 Conceptual\_Object

**Root Class:** Data\_Object

**Role:** Concrete

**Class Description:** The Conceptual Object class defines a non-tangible object that is also not a digital object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Object . Conceptual_Object			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Agency Bundle DD_Attribute DD_Attribute_Full DD_Class DD_Class_Full Data_Set_PDS3 Field_Statistics Geometry Ingest_LDD Investigation Mission_PDS3 Node Object_Statistics Observing_System Other Quaternion Resource Update Vector Volume_PDS3 Volume_Set_PDS3			

## 18.5 DD\_Association

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The DD\_Association class defines the association between two classes or a class and an attribute in a data dictionary.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Child . DD_Association			
<b>Subclass</b>	none			
<b>Attribute</b>	constant_value.DD_Association local_identifier.DD_Associa... maximum_occurrences.DD_Asso... minimum_occurrences.DD_Asso... reference_type.DD_Association	0..1 1..* 1 1 1	attribute_of component_of extension_of restriction_of subclass_of	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	DD_Class DD_Class_Full			

## 18.6 DD\_Association\_External

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The DD\_Association\_External class defines the association between classes and attributes within the local data dictionary and those external to the local data dictionary.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Child . DD_Association_External			
<b>Subclass</b>	none			
<b>Attribute</b>	maximum_occurrences.DD_Asso... minimum_occurrences.DD_Asso... name.DD_Association_External namespace_id.DD_Association... reference_type.DD_Associati...	1 1 1 1 1	attribute_of component_of extension_of restriction_of subclass_of	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	DD_Class			

## 18.7 DD\_Attribute

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The DD\_Attribute class defines an attribute for a data dictionary.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . DD_Attribute			
<b>Subclass</b>	none			
<b>Attribute</b>	comment.DD_Attribute definition.DD_Attribute local_identifier.DD_Attribute name.DD_Attribute nillable_flag.DD_Attribute submitter_name.DD_Attribute version_id.DD_Attribute	0..1 1 1 1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.DD_Attribute internal_reference.DD_Attri... terminological_entry.DD_Att... value_domain_entry.DD_Attri...	1 0..* 0..* 1	Conceptual_Object Internal_Reference Terminological_Entry DD_Value_Domain	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Ingest_LDD			

## 18.8 DD\_Attribute\_Full

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The DD\_Attribute\_Full class provides a more complete definition of an attribute in the data dictionary.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Int</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . DD_Attribute_Full			
<b>Subclass</b>	none			
<b>Attribute</b>	attribute_concept.DD_Attrib...	1	ADDRESS ANGLE ATTRIBUTE BIT CHECKSUM COLLECTION CONSTANT COSINE COUNT DELIMITER DESCRIPTION DEVIATION DIRECTION DISTANCE DOI DURATION FACTOR FLAG FORMAT GROUP HOME ID LATITUDE LENGTH LIST LOCATION LOGICAL LONGITUDE MASK MAXIMUM MEAN MEDIAN MINIMUM NAME NOTE NUMBER OFFSET ORDER PARALLEL PASSWORD PATH PATTERN PIXEL QUATERNION RADIUS RATIO REFERENCE RESOLUTION	

## 18.9 DD\_Class

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The DD\_Class class defines a class for a data dictionary.

	Entity	Card	Value/Class	Inc
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . DD_Class			
<b>Subclass</b>	none			
<b>Attribute</b>	abstract_flag.DD_Class definition.DD_Class local_identifier.DD_Class name.DD_Class submitter_name.DD_Class version_id.DD_Class	0..1 1 1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.DD_Class dd_association.DD_Class  internal_reference.DD_Class terminological_entry.DD_Class	1 1..*  0..* 0..*	Conceptual_Object DD_Association DD_Association_External Internal_Reference Terminological_Entry	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Ingest_LDD			

## 18.10 DD\_Class\_Full

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The DD\_Class\_Full class provides a more complete definition of a class for a data dictionary.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . DD_Class_Full			
<b>Subclass</b>	none			
<b>Attribute</b>	abstract_flag.DD_Class_Full comment.DD_Class_Full definition.DD_Class_Full local_identifer.DD_Class_Full name.DD_Class_Full namespace_id.DD_Class_Full registered_by.DD_Class_Full registration_authority_id.D... steward_id.DD_Class_Full  submitter_name.DD_Class_Full type.DD_Class_Full  version_id.DD_Class_Full	0..1 0..1 1 1 1 1 1 1 1  1 1  1	atm geo img naif ops pds ppi rings rs sbn  PDS3 PDS4	
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.DD_Class_Full dd_association.DD_Class_Full terminological_entry.DD_Cla...	1 0..* 0..*	Conceptual_Object DD_Association Terminological_Entry	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Class_Definition			

## 18.11 DD\_Permissible\_Value

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The DD\_Permissible\_Value class lists permissible values and their meanings.



	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Child . DD_Permissible_Value			
<b>Subclass</b>	none			
<b>Attribute</b>	value.DD_Permissible_Value value_meaning.DD_Permissibl...	1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	DD_Value_Domain			

### 18.12 DD\_Permissible\_Value\_Full

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The DD\_Permissible\_Value\_Full class lists permissible values, their meanings, and the dates when active.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Child . DD_Permissible_Value_Full			
<b>Subclass</b>	none			
<b>Attribute</b>	value.DD_Permissible_Value_... value_begin_date.DD_Permiss... value_end_date.DD_Permissib... value_meaning.DD_Permissibl...	1 1 1 0..1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	DD_Value_Domain_Full			

### 18.13 DD\_Value\_Domain

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The DD\_Value\_Domain class defines an attribute's permissible values and their constraints.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Child . DD_Value_Domain		
<b>Subclass</b>	none		
<b>Attribute</b>	enumeration_flag.DD_Value.D... formation_rule.DD_Value_Domain maximum_characters.DD_Value... maximum_value.DD_Value_Domain minimum_characters.DD_Value... minimum_value.DD_Value_Domain pattern.DD_Value_Domain specified_unit_id.DD_Value... unit_of_measure_type.DD_Val...	1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1	Units_of_Acceleration Units_of_Amount_Of_Subst... Units_of_Angle Units_of_Angular_Velocity Units_of_Area Units_of_Frame_Rate Units_of_Frequency Units_of_Length Units_of_Map_Scale Units_of_Mass Units_of_Misc Units_of_None Units_of_Optical_Path_Len... Units_of_Pressure Units_of_Radiance Units_of_Rates Units_of_Solid_Angle Units_of_Storage Units_of_Temperature Units_of_Time Units_of_Velocity Units_of_Voltage Units_of_Volume
	value_data_type.DD_Value_Do...	1	ASCII_AnyURI ASCII_Boolean ASCII_DOI ASCII_Date_DOY ASCII_Date_Time ASCII_Date_Time_DOY ASCII_Date_Time_UTC ASCII_Date_Time_YMD ASCII_Date_YMD ASCII_Directory_Path_Na... ASCII_File_Name ASCII_File_Specification_L... ASCII_Integer ASCII_LID ASCII_LIDVID ASCII_LIDVID_LID ASCII_MD5_Checksum ASCII_NonNegative_Inte...

#### 18.14 DD\_Value\_Domain\_Full

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The DD\_Value\_Domain\_Full class provides a more complete definition of a attribute's value domain.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Child . DD_Value_Domain_Full		
<b>Subclass</b>	none		
<b>Attribute</b>	conceptual_domain.DD_Value_...  enumeration_flag.DD_Value_D... formation_rule.DD_Value_Dom... maximum_characters.DD_Value... maximum_value.DD_Value_Doma... minimum_characters.DD_Value... minimum_value.DD_Value_Doma... pattern.DD_Value_Domain_Full specified_unit_id.DD_Value_... unit_of_measure_type.DD_Val...  value_data_type.DD_Value_Do...  140	1  1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1  1	BOOLEAN INTEGER NAME NUMERIC REAL SHORT_STRING TEXT TIME TYPE UNKNOWN  Units_of_Amount_Of_Subst... Units_of_Angle Units_of_Angular_Velocity Units_of_Area Units_of_Frame_Rate Units_of_Frequency Units_of_Length Units_of_Map_Scale Units_of_Mass Units_of_Misc Units_of_None Units_of_Optical_Path_Len... Units_of_Pressure Units_of_Radiance Units_of_Rates Units_of_Solid_Angle Units_of_Storage Units_of_Temperature Units_of_Time Units_of_Velocity Units_of_Voltage Units_of_Volume ASCII_AnyURI ASCII_Boolean ASCII_DOI ASCII_Date_DOY ASCII_Date_Time ASCII_Date_Time_DOY ASCII_Date_Time_UTC ASCII_Date_Time_YMD ASCII_Date_YMD

### 18.15 DIP\_Deep\_Archive

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Dissemination Information Package Deep Archive class is an Information Package derived from one or more AIPs and is received by the National Space Science Data Center (NSSDC).

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package . . . DIP_Deep_Archive			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	description.Information_Pac...	1		
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_DIP_Deep_Archive			

### 18.16 Data\_Object

**Root Class:** Data\_Object

**Role:** Abstract

**Class Description:** The Data\_Object class defines a thing about which almost nothing is known.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Object			
<b>Subclass</b>	Conceptual_Object Digital_Object Physical_Object			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 18.17 Data\_Set\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Data Set PDS3 class is used to capture the data set information from the PDS3 Data Set Catalog.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Data_Set_PDS3		
<b>Subclass</b>	none		
<b>Attribute</b>	abstract_desc.Data_Set_PDS3 archive_status.Data_Set_PDS3  citation_text.Data_Set_PDS3 confidence_level_note.Data_... data_set_desc.Data_Set_PDS3 data_set_id.Data_Set_PDS3 data_set_name.Data_Set_PDS3 data_set_release_date.Data_... data_set_terse_desc.Data_Se... producer_full_name.Data_Set... start_date_time.Data_Set_PDS3 stop_date_time.Data_Set_PDS3	1 1  1 1 1 1 1 1 1 1 1 1	ARCHIVED ARCHIVED_ACCUMULATI IN_LIEN_RESOLUTION IN_LIEN_RESOLUTION_AC IN_PEER_REVIEW IN_PEER_REVIEW_ACCUM IN_QUEUE IN_QUEUE_ACCUMULATIN LOCALLY_ARCHIVED LOCALLY_ARCHIVED_ACC PRE_PEER_REVIEW PRE_PEER_REVIEW_ACCU SAFED SUPERSEDED
<b>Inherited Attribute</b>	none		
<b>Association</b>	data_object.Data_Set_PDS3  nssdc.Data_Set_PDS3	1  0..*	Conceptual_Object Physical_Object NSSDC
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_Data_Set_PDS3		

## 18.18 Digital\_Object

**Root Class:** Data\_Object

**Role:** Concrete

**Class Description:** The Digital Object class defines a sequence of digital bits.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Object . Digital_Object			
<b>Subclass</b>	none			
<b>Attribute</b>	bit_string.Digital_Object	1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Array Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum Checksum_Manifest Document Document_File Encoded_Binary Encoded_Byte_Stream Encoded_Header Encoded_Image File Header Inventory Parsable_Byte_Stream SPICE_Kernel Service_Description Software Software_Binary Software_Script Software_Source Stream_Text Table_Base Table_Binary Table_Character Table_Delimited Transfer_Manifest XML_Schema			

## 18.19 Dissemination Information Package

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Dissemination Information Package (DIP) class defines an Information Package, derived from one or more AIPs, that is received by a consumer.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package . . . Dissemination_Information_Package			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	description.Information_Pac...	1		
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_DIP			

## 18.20 External Reference Extended

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The External\_Reference\_Extended class is used to reference a source outside the PDS registry system. This extension is used in the local data dictionary.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product_Components . External_Reference . . External_Reference_Extended			
<b>Subclass</b>	none			
<b>Attribute</b>	name.External_Reference_Ext... url.External_Reference_Ext...	0..1 0..1		
<b>Inherited Attribute</b>	description.External_Reference doi.External_Reference reference_text.External_Ref...	0..1 0..1 1		
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Terminological_Entry			



## 18.21 File\_Area\_Binary

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Binary class describes a file that contains an encoded byte stream.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Binary			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Binary has_tagged_data_object.File...	1 0..*	File Encoded_Binary	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_File_Repository Product_Proxy_PDS3			

## 18.22 File\_Area\_Checksum\_Manifest

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Checksum Manifest class describes a file that contains a two column table for file references and checksums.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Checksum_Manifest			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Checksum... has_tagged_data_object.File...	1 1	File Checksum_Manifest	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Information_Package_Component			

## 18.23 File\_Area\_Service\_Description

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Service Description class describes a file that contains a service description.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Service_Description			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Service... has_tagged_data_object.File...	1 1..*	File Service_Description	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Service			

### 18.24 File\_Area\_Transfer\_Manifest

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area Transfer Manifest class describes a file that contains a two column table that maps the logical identifiers and version ids of products to their file specification names.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_Transfer_Manifest			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_Transfer... has_tagged_data_object.File...	1 1	File Transfer_Manifest	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Information_Package_Component			

### 18.25 File\_Area\_XML\_Schema

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The File Area XML Schema class describes a file that contains a resource used for the PDS4 implementation into XML.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . File_Area . . File_Area_XML_Schema			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	has_File.File_Area_XML_Schema has_tagged_data_object.File...	1 1	File XML_Schema	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_XML_Schema			

## 18.26 Information\_Package

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Abstract

**Class Description:** The Information\_Package class defines the Information\_Package as described in the OAIS Reference Model and is the parent class of all specific IP classes.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package			
<b>Subclass</b>	Archival_Information_Package DIP_Deep_Archive Dissemination_Information_Package Submission_Information_Package			
<b>Attribute</b>	description.Information_Pac...	1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 18.27 Information\_Package\_Component

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Information\_Package\_Component class associates a Bundle, Collections or Basic Products with Checksum and Storage Manifests.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package_Component		
<b>Subclass</b>	none		
<b>Attribute</b>	checksum_manifest_checksum.... checksum_type.Information_P... transfer_manifest_checksum....	0..1 0..1 0..1	
<b>Inherited Attribute</b>	none		
<b>Association</b>	has_Checksum_Manifest.Infor... has_Transfer_Manifest.Infor... internal_reference.Informat...	0..1 0..1 1..*	File_Area_Checksum_Ma... File_Area_Transfer_Mani... Internal_Reference
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_AIP Product_DIP Product_DIP_Deep_Archive Product_SIP		

## 18.28 Ingest\_LDD

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Ingest\_LDD class provides a form for collecting class and attribute definitions.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Ingest_LDD			
<b>Subclass</b>	none			
<b>Attribute</b>	comment.Ingest_LDD full_name.Ingest_LDD last_modification_date_time... ldd_version_id.Ingest_LDD name.Ingest_LDD namespace_id.Ingest_LDD steward_id.Ingest_LDD	0..1 1 1 1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Ingest_LDD local_attribute.Ingest_LDD local_class.Ingest_LDD	1 1..* 0..*	Conceptual_Object DD_Attribute DD_Class	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 18.29 Instrument\_Host\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Instrument Host class provides a description of the physical object upon which an instrument is mounted. This class captures the PDS3 catalog Instrument Host information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Instrument_Host_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	instrument_host_desc.Instru... instrument_host_id.Instrume... instrument_host_name.Instru... instrument_host_type.Instru...	1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Instrument_Host...	1	Physical_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Instrument_Host_PDS3			

## 18.30 Instrument\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Instrument class provides a description of a physical object that collects data. This class captures the PDS3 catalog Instrument information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Instrument_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	instrument_desc.Instrument_... instrument_id.Instrument_PDS3 instrument_name.Instrument_... instrument_serial_number.In... instrument_type.Instrument_... instrument_version_id.Instr...	1 1 1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Instrument_PDS3	1	Physical_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Instrument_PDS3			

### 18.31 Mission\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Mission PDS3 class describes an activity involved in the collection of data. This class captures the PDS3 catalog Mission information.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Mission_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	mission_desc.Mission_PDS3 mission_name.Mission_PDS3 mission_objectives_summary.... mission_start_date.Mission_... mission_stop_date.Mission_PDS3	1 1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Mission_PDS3	1	Conceptual_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Mission_PDS3			

### 18.32 NSSDC

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The NSSDC Information class provides identification

information for data submitted to the NSSDC.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Child .NSSDC			
<b>Subclass</b>	none			
<b>Attribute</b>	medium_type.NSSDC nssdc_collection_id.NSSDC	1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Data_Set_PDS3			

### 18.33 Node

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Node class provides a description of an entity that provides local governance within the federated Planetary Data System.

	Entity	Card	Value/Class
<b>Hierarchy</b>	Tagged_NonDigital_Object .TNDO_Context .Node		
<b>Subclass</b>	none		
<b>Attribute</b>	description.Node institution_name.Node name.Node	1 1 1	Engineering Geosciences Imaging Management Navigation Ancillary Information Planetary Atmospheres Planetary Plasma Interactions Planetary Rings Planetary Science Archive Radio Science Small Bodies
<b>Inherited Attribute</b>	none		
<b>Association</b>	data_object.Node	1	Conceptual_Object
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_Context		

### 18.34 PDS\_Affiliate

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The PDS Affiliate class provides a description of a person who has an association with the planetary science community and has access to PDS resources not normally allowed to the general public.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . PDS_Affiliate		
<b>Subclass</b>	none		
<b>Attribute</b>	affiliation_type.PDS_Affiliate  alternate_telephone_number.... description.PDS_Affiliate electronic_mail_address.PDS... institution_name.PDS_Affiliate name.PDS_Affiliate phone_book_flag.PDS_Affiliate postal_address_text.PDS_Aff... registration_date.PDS_Affil... sort_name.PDS_Affiliate team_name.PDS_Affiliate  telephone_number.PDS_Affiliate	1  0..1 1 0..* 1 0..1 1 1 1 1 0..*  0..1	Affiliate Data Provider Manager Technical Staff            Engineering Geosciences Headquarters Imaging Management National Space Science Data Navigation Ancillary Informa Planetary Atmospheres Planetary Plasma Interaction Planetary Rings Radio Science Small Bodies
<b>Inherited Attribute</b>	none		
<b>Association</b>	data_object.PDS_Affiliate	1	Physical_Object
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_Context		



### 18.35 PDS\_Guest

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The PDS\_Guest class is the default description of a person who has an association with the planetary science community and who has the most limited access to PDS resources.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context . . PDS_Guest			
<b>Subclass</b>	none			
<b>Attribute</b>	description.PDS_Guest electronic_mail_address.PDS... name.PDS_Guest registration_date.PDS_Guest sort_name.PDS_Guest	1 0..* 0..1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.PDS_Guest	1	Physical_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Context			

### 18.36 Physical\_Object

**Root Class:** Data\_Object

**Role:** Concrete

**Class Description:** The Physical Object class defines a tangible object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Object . Physical_Object			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Data_Set_PDS3 Facility Instrument Instrument_Host Instrument_Host_PDS3 Instrument_PDS3 Observing_System PDS_Affiliate PDS_Guest Target Target_PDS3 Volume_PDS3 Volume_Set_PDS3			

### 18.37 Service\_Description

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Service Description class defines a file that contains a standardized service specification.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Service_Description			
<b>Subclass</b>	none			
<b>Attribute</b>	parsing_standard_id.Service...	1	WADL WSDL 2.n	R
<b>Inherited Attribute</b>	local_identifer.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... object_length.Parsable_Byte... offset.Parsable_Byte_Stream	0..1 0..1 0..1 0..1 1		
<b>Association</b>	none			
<b>Inherited Association</b>	data_object.Parsable_Byte_S...	1	Digital_Object	
<b>Referenced from</b>	File_Area_Service_Description			

### 18.38 Software

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Software class describes a software product

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Software			
<b>Subclass</b>	none			
<b>Attribute</b>	author_list.Software description.Software name.Software programmers_manual_id.Software software_id.Software software_type.Software users_manual_id.Software version_id.Software	0..1 1 1 1 1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Software	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Software			

### 18.39 Software\_Binary

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Software Script class provides a description of a software code that is stored as a compiled binary file.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Software_Binary			
<b>Subclass</b>	none			
<b>Attribute</b>	files.Software_Binary os_version.Software_Binary program_notes_id.Software.B... software_format_type.Softwa... supported_architecture_note... supported_operating_system.... system_requirements_note.So...	1 1..* 1 1 1..* 1..* 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Software_Binary	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Software			

### 18.40 Software\_Script

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Software Script class provides a description of a software code that is stored as a script.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Software_Script			
<b>Subclass</b>	none			
<b>Attribute</b>	files.Software_Script install_note.Software_Script supported_environment_note.... system_requirements_note.So...	1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Software_Script	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Software			

## 18.41 Software\_Source

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Software Script class provides a description of a software code that is stored as source code.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Software_Source			
<b>Subclass</b>	none			
<b>Attribute</b>	compile_note.Software_Source files.Software_Source os_version.Software_Source program_notes_id.Software_S... software_dialect.Software_S... software_format_type.Softwa... software_language.Software_... supported_architecture_note... supported_operating_system_... system_requirements_note.So...	1 1 1 1 1 1 1..* 1..*		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Software_Source	1	Digital_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Software			

## 18.42 Submission\_Information\_Package

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Submission Information Package (SIP) class is an Information Package that is delivered by a Data Provider to an archive that conforms to the Open Archive Information System (OAIS) Reference Model for use in the construction of one or more AIPs.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package . . . Submission_Information_Package			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	description.Information_Pac...	1		
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_SIP			

### 18.43 Subscriber\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Subscriber\_PDS3 class provides the name of the subscriber and their subscription list.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Subscriber_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	full_name.Subscriber_PDS3 local_identifier.Subscriber... subscription_id.Subscriber_...	1 0..1 1..*		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Subscription_PDS3			

### 18.44 Symbolic\_Literals\_PDS

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Symbolic.Literals.PDS class is used to collect orphan attributes for the pds namespace. These attributes are members by default of the USER class but not members of any domain class.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Symbolic_Literals_PDS			
<b>Subclass</b>	none			
<b>Attribute</b>	nil_reason.Symbolic_Literal...	0..1	anticipated inapplicable missing unknown	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 18.45 TNDO\_Context

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Abstract

**Class Description:** The Tagged NonDigital Object (TNDO) Context class is an abstract class for the context class hierarchy.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context			
<b>Subclass</b>	Agency Facility Instrument Instrument_Host Investigation Node Observing_System Other PDS_Affiliate PDS_Guest Resource Target Telescope			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 18.46 TNDO\_Context\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Tagged NonDigital Object (TNDO) Context PDS3 class is an abstract class for the PDS3 context class hierarchy.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3			
<b>Subclass</b>	Data_Set_PDS3 Instrument_Host_PDS3 Instrument_PDS3 Mission_PDS3 Subscriber_PDS3 Target_PDS3 Volume_PDS3 Volume_Set_PDS3			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 18.47 TNDO\_Supplemental

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Abstract

**Class Description:** The Tagged NonDigital Object (TNDO) Supplemental class is an abstract class for the supplemental class hierarchy.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental			
<b>Subclass</b>	Band_Bin Band_Bin_Set Bundle Cartography Collection DD_Attribute DD_Attribute_Full DD_Class DD_Class_Full Display_2D_Image Document Field_Statistics Geometry Information_Package Information_Package_Component Ingest_LDD Object_Statistics Quaternion Software Software_Binary Software_Script Software_Source Symbolic_Literals_PDS Update Vector Vector_Cartesian_3 Zip			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 18.48 Tagged\_Digital\_Child

**Root Class:** Tagged\_Digital\_Child

**Role:** Abstract

**Class Description:** The Tagged Digital Child class is an abstract class for the components of classes in the tagged digital object class hierarchy.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Child			
<b>Subclass</b>	Axis_Array Document_Format Element_Array Field Group Packed_Data_Fields Record Special_Constants Uniformly_Sampled			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 18.49 Tagged\_Digital\_Object

**Root Class:** Tagged\_Digital\_Object

**Role:** Abstract

**Class Description:** The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_Digital_Object			
<b>Subclass</b>	Byte_Stream File			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 18.50 Tagged\_NonDigital\_Child

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Abstract

**Class Description:** The Tagged NonDigital Child class is an abstract class for the components of classes in the tagged nondigital object class hierarchy.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Child			
<b>Subclass</b>	DD_Association DD_Association_External DD_Permissible_Value DD_Permissible_Value_Full DD_Value_Domain DD_Value_Domain_Full NSSDC Observing_System_Component Quaternion_Component Terminological_Entry Vector_Component			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 18.51 Tagged\_NonDigital\_Object

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Abstract

**Class Description:** The Tagged NonDigital Object class is an abstract class for the physical and conceptual class hierarchy. A tagged object is an information object.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object			
<b>Subclass</b>	TNDO_Context TNDO_Context_PDS3 TNDO_Supplemental			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 18.52 Target\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Target class provides a description of a physical object that is the object of data collection. This class captures the PDS3

catalog Target information.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Target_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	orbit_direction.Target_PDS3 primary_body_name.Target_PDS3 rotation_direction.Target_PDS3 target_desc.Target_PDS3 target_name.Target_PDS3 target_type.Target_PDS3	0..* 1 0..1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Target_PDS3	1	Physical_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Target_PDS3			

### 18.53 Terminological\_Entry

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The terminological\_entry class provides the name (designation) and definition of the attribute in a specified natural language.

	Entity	Card	Value/Class
<b>Hierarchy</b>	Tagged_NonDigital_Child . Terminological_Entry		
<b>Subclass</b>	none		
<b>Attribute</b>	definition.Terminological_E... language.Terminological_Entry  name.Terminological_Entry preferred_flag.Terminologic...	1 1  1 1	English Russian
<b>Inherited Attribute</b>	none		
<b>Association</b>	source.Terminological_Entry	0..*	External_Reference_Extended
<b>Inherited Association</b>	none		
<b>Referenced from</b>	DD_Attribute DD_Attribute_Full DD_Class DD_Class_Full		

### 18.54 Transfer\_Manifest

**Root Class:** Tagged\_Digital\_Object

**Role:** Concrete

**Class Description:** The Transfer\_Manifest class defines a table that maps product LIDVIDs to the file\_specification\_names of the products' XML label files.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>In</b>
<b>Hierarchy</b>	Tagged_Digital_Object . Byte_Stream . . Table_Base . . . Table_Character . . . . Transfer_Manifest			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	local_identifier.Byte_Stream name.Byte_Stream description.Table_Base offset.Table_Base records.Table_Base record_delimiter.Table_Char...	0..1 0..1 0..1 1 1 1	carriage-return line-feed	
<b>Association</b>	none			
<b>Inherited Association</b>	data_object.Table_Base has_Record.Table_Character uniformly_sampled.Table_Cha...	1 1 0..1	Digital_Object Record_Character Uniformly_Sampled	
<b>Referenced from</b>	File_Area_Transfer_Manifest			

### 18.55 Volume\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Volume\_PDS3 class is used to capture the volume information from the PDS3 Data Set Catalog.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Volume_PDS3		
<b>Subclass</b>	none		
<b>Attribute</b>	archive_status.Volume_PDS3  archive_status_note.Volume_... curating_node.id.Volume_PDS3 description.Volume_PDS3 medium_type.Volume_PDS3 publication_date.Volume_PDS3 volume_de.fullname.Volume_PDS3 volume_format.Volume_PDS3 volume_id.Volume_PDS3 volume_name.Volume_PDS3 volume_set_id.Volume_PDS3 volume_size.Volume_PDS3 volume_version_id.Volume_PDS3	1  1 0..* 0..1 1 1 1 1 1 1 1 1 1 1 1	ARCHIVED ARCHIVED_ACCUMULA IN_LIEN_RESOLUTION IN_LIEN_RESOLUTION_A IN_PEER_REVIEW IN_PEER_REVIEW_ACCU IN_QUEUE IN_QUEUE_ACCUMULA LOCALLY_ARCHIVED LOCALLY_ARCHIVED_A PRE_PEER_REVIEW PRE_PEER_REVIEW_AC SAFED SUPERSEDED
<b>Inherited Attribute</b>	none		
<b>Association</b>	data_object.Volume_PDS3	1	Conceptual_Object Physical_Object
<b>Inherited Association</b>	none		
<b>Referenced from</b>	Product_Volume_PDS3		

### 18.56 Volume\_Set\_PDS3

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Volume\_Set\_PDS3 class is used to capture the volume set information from the PDS3 Data Set Catalog.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Volume_Set_PDS3			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Volume_Set_PDS3 volume_series_name.Volume_S... volume_set_id.Volume_Set_PDS3 volume_set_name.Volume_Set_... volumes.Volume_Set_PDS3	0..1 1 1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Volume_Set_PDS3	1	Conceptual_Object Physical_Object	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Product_Volume_Set_PDS3			

## 19 Imaging Discipline Classes

This section provides the sets of classes associated with the imaging discipline.

The image discipline class hierarchy is illustrated in the following diagram. This diagram presents the subclassOf relation for each class using a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```

+ + Telemetry_Parameters
+ + Quaternion_Component
+ + + Cartography
+ + + Quaternion
  
```

The class hierarchy above includes 4 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the discipline classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

### 19.1 Cartography

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Cartography class is a placeholder for soon forthcoming Imaging cartography classes.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Cartography			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			



Figure 13: Imaging Discipline UML Class Diagram

## 19.2 Quaternion

**Root Class:** Tagged\_NonDigital\_Object

**Role:** Concrete

**Class Description:** The Quaternion class models a mathematical construct that consists of four individual numeric components. Quaternions are a convenient mechanism for encapsulating orientation information since they require only four units of numeric storage, as opposed to the nine needed for a rotation matrix.

	Entity	Card	Value/Class	In
<b>Hierarchy</b>	Tagged_NonDigital_Object . TNDO_Supplemental . . Quaternion			
<b>Subclass</b>	none			
<b>Attribute</b>	description.Quaternion local_identifier.Quaternion name.Quaternion type.Quaternion	1 0..1 1 1	SPICE Spacecraft Telemetry	
<b>Inherited Attribute</b>	none			
<b>Association</b>	data_object.Quaternion quaternion_component.Quater...	1 4	Conceptual_Object Quaternion_Component	
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 19.3 Quaternion\_Component

**Root Class:** Tagged\_NonDigital\_Child

**Role:** Concrete

**Class Description:** The Quaternion\_Component class provides a component of a quaternion.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Tagged_NonDigital_Child . Quaternion_Component			
<b>Subclass</b>	none			
<b>Attribute</b>	data_type.Quaternion_Component description.Quaternion_Comp... name.Quaternion_Component sequence_number.Quaternion_... value.Quaternion_Component	1 0..1 0..1 1 1	ASCII_Real	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	Quaternion			

#### 19.4 Telemetry\_Parameters

**Root Class:** Product\_Components

**Role:** Concrete

**Class Description:** The Telemetry\_Parameters class contains downlink-related attributes used primarily during mission operations.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Product_Components . Telemetry_Parameters			
<b>Subclass</b>	none			
<b>Attribute</b>	application_process_id.Tele... application_process_name.Te... earth_received_start_date_t... earth_received_stop_date_ti... expected_packets.Telemetry_... packet_map_mask.Telemetry_P... received_packets.Telemetry_... spice_file_name.Telemetry_P... telemetry_format_id.Telemet... telemetry_provider_id.Telem... telemetry_source_name.Telem... telemetry_source_type.Telem...	0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1 0..1	DATA_PRODUCT SFDU	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20 Data Type Classes

This section defines the PDS4 data types.

The Data Type class hierarchy is illustrated in the following diagram. This diagram presents the subclassOf relation for each class using a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ + + Complex
+ + + + ComplexLSB16
+ + + + ComplexLSB8
+ + + + ComplexMSB16
+ + + + ComplexMSB8
+ + + Decimal_Integer
+ + + + SignedBitString
+ + + + SignedByte
+ + + + SignedLSB2
+ + + + SignedLSB4
+ + + + SignedLSB8
+ + + + SignedMSB2
+ + + + SignedMSB4
+ + + + SignedMSB8
+ + + + UnsignedBitString
+ + + + UnsignedByte
+ + + + UnsignedLSB2
+ + + + UnsignedLSB4
+ + + + UnsignedLSB8
+ + + + UnsignedMSB2
+ + + + UnsignedMSB4
+ + + + UnsignedMSB8
+ + + Decimal_Real
+ + + + IEEE754LSBDouble
+ + + + IEEE754LSBSingle
+ + + + IEEE754MSBDouble
+ + + + IEEE754MSBSingle
+ + Character_Data_Type
+ + + ASCII_AnyURI
+ + + ASCII_Boolean
+ + + ASCII_DOI
+ + + ASCII_Date
+ + + ASCII_Date_DOY
+ + + ASCII_Date_Time
+ + + ASCII_Date_Time_DOY
```

```

+ + + ASCII_Date_Time_UTC
+ + + ASCII_Date_Time_YMD
+ + + 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_Short_String_Collapsed
+ + + ASCII_Short_String_Preserved
+ + + ASCII_String
+ + + ASCII_Text_Collapsed
+ + + ASCII_Text_Preserved
+ + + ASCII_Time
+ + + ASCII_VID
+ + + UTF8_Short_String_Collapsed
+ + + UTF8_Short_String_Preserved
+ + + UTF8_String
+ + + UTF8_Text_Preserved

```

The class hierarchy above includes 62 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

## 20.1 ASCII\_AnyURI

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII AnyURI class indicates a URI or its subclasses URN and URL.

Figure 14: DataType UML Class Diagram

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_AnyURI			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... character_encoding.ASCII_An... maximum_characters.ASCII_An... minimum_characters.ASCII_An... xml_schema_base_type.ASCII...	1 1 1 1 1	ASCII UTF-8   xsd:anyURI	R R R R R
<b>Inherited Attribute</b>	formation_rule.Character_Da... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1		
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.2 ASCII\_Boolean

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* The ASCII\_Boolean class indicates a boolean. The allowed values are 'true' and 'false'.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Boolean			
<b>Subclass</b>	none			
<b>Attribute</b>	xml_schema_base_type.ASCII...	1	xsd:boolean	R
<b>Inherited Attribute</b>	character_constraint.Charac... character_encoding.Characte... formation_rule.Character_Da... maximum_characters.Characte... maximum_value.Character_Dat... minimum_characters.Characte... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1 1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.3 ASCII\_DOI

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII DOI class indicates a digital object identifier (DOI).

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_DOI			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII_DOI	1	ASCII	R
	formation_rule.ASCII_DOI	1	nn.nnnn/nnn	R
. S+/ S+	maximum_characters.ASCII_DOI	1		R
	minimum_characters.ASCII_DOI	1		R
	pattern.ASCII_DOI	1	10	
	R			
	xml_schema_base_type.ASCII_DOI	1	xsd:string	R
<b>Inherited Attribute</b>	character_encoding.Character...	1	UTF-8	
	maximum_value.Character_Dat...	1		
	minimum_value.Character_Dat...	1		
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.4 ASCII\_Date

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Date class indicates a date in either YMD or DOY format.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Date		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Date maximum_characters.ASCII_Date minimum_characters.ASCII_Date pattern.ASCII_Date  xml_schema_base_type.ASCII...	1 1 1 1 1  1	ASCII YYYY-MM-DD/YYYY-DOY       (-)?[0-9]{4} (-)?[0-9]{4}-((00[1-9])—(0[1-9] (-)?[0-9]{4}-((0[1-9])—(1[0-9] (-)?[0-9]{4}-((0[1-9])—(1[0-9] xsd:string
<b>Inherited Attribute</b>	character_encoding.Character... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

## 20.5 ASCII\_Date\_DOY

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Date\_DOY class indicates a date in DOY format.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Date_DOY		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Date_DOY maximum_characters.ASCII_Da... minimum_characters.ASCII_Da... pattern.ASCII_Date_DOY  xml_schema_base_type.ASCII...	1 1 1 1 1  1	ASCII YYYY-DOY    (-)?[0-9]{4} (-)?[0-9]{4}-((00[1-9])—(0[1
<b>Inherited Attribute</b>	character_encoding.Character... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

## 20.6 ASCII\_Date\_Time

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Date\_Time class indicates a date in either YMD or DOY format and time.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Date_Time		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Date_Time maximum_characters.ASCII_Da... maximum_value.ASCII_Date_Time minimum_characters.ASCII_Da... minimum_value.ASCII_Date_Time pattern.ASCII_Date_Time	1 1 1 1 1 1 1	ASCII YYYY-MM-DDTHH:MM:      (-)?[0-9]{4} (-)?[0-9]{4}-((00[1-9])—(0[1-9] 1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))? (-)?[0-9]{4}-((00[1-9])—(0[1-9] 1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))? (-)?[0-9]{4}-((00[1-9])—(0[1-9] 1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))? (-)?[0-9]{4}-((00[1-9])—(0[1-9] 1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))?  (-)?[0-9]{4}-((0[1-9])—(1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))? (-)?[0-9]{4}-((0[1-9])—(1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))? (-)?[0-9]{4}-((0[1-9])—(1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))? (-)?[0-9]{4}-((0[1-9])—(1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))?  (-)?[0-9]{4}-((0[1-9])—(1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))? (-)?[0-9]{4}-((0[1-9])—(1[0-9] 2[0-9] 3[0-9] 4[0-9] 5[0-9] 6[0-9] 7[0-9] 8[0-9] 9[0-9]))?
.[(0-9){1,4}])?(Z)?			
.0+?)?)?(Z)?			
.[(0-9){1,4}])?(Z)?			
.0+?)?)?(Z)?			
	xml_schema_base_type.ASCII...	1	xsd:string
<b>Inherited Attribute</b>	character_encoding.Characte...	1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

## 20.7 ASCII\_Date\_Time\_DOY

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* The ASCII\_Date\_Time\_DOY class indicates a date in DOY format and time.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Date_Time_DOY		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Date_T... maximum_characters.ASCII_Da... maximum_value.ASCII_Date_Ti... minimum_characters.ASCII_Da... minimum_value.ASCII_Date_Ti... pattern.ASCII_Date_Time_DOY	1 1 1 1 1 1 1	ASCII YYYY-DOYTHH:MM:SS.S       (-)?[0-9]{4}-((00[1-9])—(0[1 (-)?[0-9]{4}-((00[1-9])—(0[1    (-)?[0-9]{4}-((00[1-9])—(0[1 (-)?[0-9]{4}-((00[1-9])—(0[1
	xml_schema_base_type.ASCII...	1	xsd:string
<b>Inherited Attribute</b>	character_encoding.Characte...	1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

## 20.8 ASCII\_Date\_Time\_UTC

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Date\_Time\_UTC class indicates a date and time in UTC format.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Date_Time_UTC		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Date_T... maximum_characters.ASCII_Da... maximum_value.ASCII_Date_Ti... minimum_characters.ASCII_Da... minimum_value.ASCII_Date_Ti... pattern.ASCII_Date_Time_UTC	1 1 1 1 1 1 1	ASCII YYYY-MM-DDTHH:MM:S  (-)?[0-9]{4}(Z) (-)?[0-9]{4}-((00[1-9])—(0[1-9]... (-)?[0-9]{4}-((00[1-9])—(0[1-9]...  (-)?[0-9]{4}-((00[1-9])—(0[1-9]... (-)?[0-9]{4}-((00[1-9])—(0[1-9]...  (-)?[0-9]{4}-((00[1-9])—(0[1-9]... (-)?[0-9]{4}-((0[1-9])—(1[0-9]... (-)?[0-9]{4}-((0[1-9])—(1[0-9]... (-)?[0-9]{4}-((0[1-9])—(1[0-9]... (-)?[0-9]{4}-((0[1-9])—(1[0-9]...  (-)?[0-9]{4}-((0[1-9])—(1[0-9]... xsd:string
<b>Inherited Attribute</b>	character_encoding.Characte...	1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

## 20.9 ASCII\_Date\_Time\_YMD

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Date\_Time\_YMD class indicates a date in YMD format and time.

	Entity	Card	Value/Class
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Date_Time_YMD		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Date_T... maximum_characters.ASCII_Da... maximum_value.ASCII_Date_Ti... minimum_characters.ASCII_Da... minimum_value.ASCII_Date_Ti... pattern.ASCII_Date_Time_YMD  .[([0-9]{1,4})?(Z)?  .0+?)?(Z)?  xml_schema_base_type.ASCII...	1 1 1 1 1 1 1    1	ASCII YYYY-MM-DDTHH:MM:S          (-)?[0-9]{4}-((0[1-9])—(1[0-9]— (-)?[0-9]{4}-((0[1-9])—(1[0-9]—    (-)?[0-9]{4}-((0[1-9])—(1[0-9]— (-)?[0-9]{4}-((0[1-9])—(1[0-9]—  xsd:string
<b>Inherited Attribute</b>	character_encoding.Characte...	1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

## 20.10 ASCII\_Date\_YMD

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Date\_YMD class indicates a date in YMD format.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Date_YMD		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Date_YMD maximum_characters.ASCII_Da... minimum_characters.ASCII_Da... pattern.ASCII_Date_YMD  xml_schema_base_type.ASCII...	1 1 1 1 1  1	ASCII YYYY-MM-DD    (-)?[0-9]{4} (-)?[0-9]{4}-((0[1-9])—(1[0-9] (-)?[0-9]{4}-((0[1-9])—(1[0-9]
<b>Inherited Attribute</b>	character_encoding.Character... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

## 20.11 ASCII\_Directory\_Path\_Name

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII Directory Path Name class indicates a system directory path.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Directory_Path_Name			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Direct... maximum_characters.ASCII_Di... minimum_characters.ASCII_Di... xml_schema_base_type.ASCII...	1 1 1 1 1	ASCII dir1/dir2/ 255 1 xsd:token	R R R R R
<b>Inherited Attribute</b>	character_encoding.Character... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.12 ASCII\_File\_Name

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII File Name class indicates a system file name.

	Entity	Card	Value/Class	In
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_File_Name			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_File_Name maximum_characters.ASCII_Fi... minimum_characters.ASCII_Fi... xml_schema_base_type.ASCII...	1 1 1 1 1	ASCII file_name.file_extension 255 1 xsd:token	R R R R R
<b>Inherited Attribute</b>	character_encoding.Character... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.13 ASCII\_File\_Specification\_Name

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII File Specification Name class indicates a system file including directory path, file name, and file extension.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_File_Specification_Name		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_File_S... maximum_characters.ASCII_Fi... minimum_characters.ASCII_Fi... xml_schema_base_type.ASCII...	1 1 1 1 1	ASCII dir1/dir2/file_name.file_ext... 255 1 xsd:token
<b>Inherited Attribute</b>	character_encoding.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

## 20.14 ASCII Integer

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* The ASCII Integer class indicates an integer.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Integer			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_In... maximum_value.ASCII_Integer minimum_characters.ASCII_In... minimum_value.ASCII_Integer xml_schema_base_type.ASCII...	1 1 1 1 1 1	xsd:int	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.15 ASCII\_LID

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_LID class indicates a logical identifier.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_LID			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII_LID formation_rule.ASCII_LID maximum_characters.ASCII_LID maximum_value.ASCII_LID minimum_characters.ASCII_LID minimum_value.ASCII_LID pattern.ASCII_LID xml_schema_base_type.ASCII_LID	1 1 1 1 1 1 1 1	ASCII urn:nasa:pds:xxxx 255  14  xsd:string	R R R R R R R R
<b>Inherited Attribute</b>	character_encoding.Character...	1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.16 ASCII\_LIDVID

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_LIDVID class indicates a logical identifier and version identifier.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>In</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_LIDVID			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_LIDVID maximum_characters.ASCII.LI... minimum_characters.ASCII.LI... xml_schema_base_type.ASCII...	1 1 1 1 1	ASCII urn:nasa:pds:xxxx::M.n 255 19 xsd:string	R R R R R
<b>Inherited Attribute</b>	character_encoding.Character... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.17 ASCII\_LIDVID\_LID

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_LIDVID\_LID class indicates a logical identifier and version identifier or simply the logical identifier.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>In</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_LIDVID_LID			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_LIDVID...  maximum_characters.ASCII.LI... minimum_characters.ASCII.LI... xml_schema_base_type.ASCII...	1 1  1 1 1	ASCII urn:nasa:pds:xxxx urn:nasa:pds:xxxx::M.n 255 14 xsd:string	R R  R R R
<b>Inherited Attribute</b>	character_encoding.Character... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.18 ASCII\_MD5\_Checksum

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII MD5 Checksum class indicates a checksum computed by the Message-Digest algorithm 5 (MD5).

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_MD5_Checksum			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_MD5_Ch... maximum_characters.ASCII_MD... minimum_characters.ASCII_MD... pattern.ASCII_MD5_Checksum xml_schema_base_type.ASCII...	1 1 1 1 1 1	ASCII 0123456789abcdef 32 32 [0-9a-fA-F]{32} xsd:string	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.19 ASCII\_NonNegative\_Integer

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_NonNegative\_Integer class indicates a non-negative integer.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_NonNegative_Integer			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_No... maximum_value.ASCII_NonNega... minimum_characters.ASCII_No... minimum_value.ASCII_NonNega... xml_schema_base_type.ASCII...	1 1 1 1 1 1	0 xsd:long	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.20 ASCII\_Numeric\_Base16

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII Numeric Base16 class indicates a ASCII encoded string constrained to hexadecimal digits.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Numeric_Base16			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_Nu... maximum_value.ASCII_Numeric... minimum_characters.ASCII_Nu... minimum_value.ASCII_Numeric... pattern.ASCII_Numeric_Base16 xml_schema_base_type.ASCII...	1 1 1 1 1 1 1	255 1 xsd:hexBinary	R R R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... formation_rule.Character_Da...	1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.21 ASCII\_Numeric\_Base2

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII Numeric Base2 class indicates a ASCII encoded string constrained to binary digits.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Numeric_Base2			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_Nu... maximum_value.ASCII_Numeric... minimum_characters.ASCII_Nu... minimum_value.ASCII_Numeric... pattern.ASCII_Numeric_Base2 xml_schema_base_type.ASCII...	1 1 1 1 1 1 1	ASCII 255  1 [0-1]{1,255} xsd:string	R R R R R R R
<b>Inherited Attribute</b>	character_encoding.Character... formation_rule.Character_Da...	1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.22 ASCII\_Numeric\_Base8

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII Numeric Base8 class indicates a ASCII encoded string constrained to octal digits.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Numeric_Base8			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_Nu... minimum_characters.ASCII_Nu... pattern.ASCII_Numeric_Base8 xml_schema_base_type.ASCII...	1 1 1 1 1	ASCII 255 1 [0-7]{1,255} xsd:string	R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... formation_rule.Character_Da... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.23 ASCII\_Real

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* The ASCII\_Real class indicates a real.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Real			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_Real maximum_value.ASCII_Real minimum_characters.ASCII_Real minimum_value.ASCII_Real xml_schema_base_type.ASCII...	1 1 1 1 1 1	xsd:double	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.24 ASCII\_Short\_String\_Collapsed

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Short\_String\_Collapsed class indicates a limited length, whitespace-collapsed string.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Short_String_Collapsed			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_Sh... maximum_value.ASCII_Short_S... minimum_characters.ASCII_Sh... minimum_value.ASCII_Short_S... xml_schema_base_type.ASCII...	1 1 1 1 1 1	ASCII 255  1  xsd:token	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.25 ASCII\_Short\_String\_Preserved

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Short\_String\_Preserved class indicates a limited length, whitespace-preserved string.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Short_String_Preserved			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_Sh... maximum_value.ASCII_Short_S... minimum_characters.ASCII_Sh... minimum_value.ASCII_Short_S... xml_schema_base_type.ASCII...	1 1 1 1 1 1	ASCII 255  1  xsd:string	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Character... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.26 ASCII\_String

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII.String class indicates a limited length ASCII text string with whitespaces removed.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_String			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... minimum_characters.ASCII_St... xml_schema_base_type.ASCII...	1 1 1	ASCII 1 xsd:token	R R R
<b>Inherited Attribute</b>	character_encoding.Character... formation_rule.Character_Da... maximum_characters.Character... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.27 ASCII\_Text\_Collapsed

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Text\_Collapsed class indicates an unlimited length, whitespace-collapsed text string.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Text_Collapsed			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_Te... minimum_characters.ASCII_Te... xml_schema_base_type.ASCII...	1 1 1 1	ASCII 1 xsd:token	R R R R
<b>Inherited Attribute</b>	character_encoding.Character... formation_rule.Character_Da... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.28 ASCII\_Text\_Preserved

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Text\_Preserved class indicates an unlimited length, whitespace-preserved text string.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Text_Preserved			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII... maximum_characters.ASCII_Te... maximum_value.ASCII_Text_Pr... minimum_characters.ASCII_Te... minimum_value.ASCII_Text_Pr... xml_schema_base_type.ASCII...	1 1 1 1 1 1	ASCII  1 xsd:string	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.29 ASCII\_Time

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_Time class indicates a time value.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_Time		
<b>Subclass</b>	none		
<b>Attribute</b>	character_constraint.ASCII... formation_rule.ASCII_Time maximum_characters.ASCII_Time maximum_value.ASCII_Time minimum_characters.ASCII_Time minimum_value.ASCII_Time pattern.ASCII_Time	1 1 1 1 1 1 1	ASCII HH:MM:SS.SSS      (([0-1][0-9])—(2[0-3])):[0-5] (([0-1][0-9])—(2[0-3])):[0-5]    (([0-1][0-9])—(2[0-4]))(Z—) 24:00((:00(( .[0-9]+)—)(Z—)  .0+)—))—)(Z—)
	xml_schema_base_type.ASCII...	1	xsd:string
<b>Inherited Attribute</b>	character_encoding.Characte...	1	UTF-8
<b>Association</b>	none		
<b>Inherited Association</b>	none		
<b>Referenced from</b>	none		

### 20.30 ASCII\_VID

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The ASCII\_VID class indicates a version identifier.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . ASCII_VID			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.ASCII_VID formation_rule.ASCII_VID maximum_characters.ASCII_VID maximum_value.ASCII_VID minimum_characters.ASCII_VID minimum_value.ASCII_VID pattern.ASCII_VID R R	1 1 1 1 1 1 1 1	ASCII M.m 100  3  0  [1-9][0-9]* [1-9][0-9]*	R R R R R R     R
.[([1-9]—([0-9][0-9]+))				
.[0-9]+	xml_schema_base_type.ASCII_VID	1	xsd:string	R
<b>Inherited Attribute</b>	character_encoding.Characte...	1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.31 Character\_Data\_Type

**Root Class:** Data\_Type

**Role:** Abstract

**Class Description:** The Character Data Type class is the parent class for data types used to classify the values of attributes in class descriptions, i.e., product labels and character digital objects.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type			
<b>Subclass</b>	ASCII_AnyURI ASCII_Boolean ASCII_DOI ASCII_Date ASCII_Date_DOY ASCII_Date_Time ASCII_Date_Time_DOY ASCII_Date_Time_UTC ASCII_Date_Time_YMD 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_Short_String_Collapsed ASCII_Short_String_Preserved ASCII_String ASCII_Text_Collapsed ASCII_Text_Preserved ASCII_Time ASCII_VID UTF8_Short_String_Collapsed UTF8_Short_String_Preserved UTF8_String UTF8_Text_Preserved			
<b>Attribute</b>	character_constraint.Character... character_encoding.Characte... formation_rule.Character_Da... maximum_characters.Characte... maximum_value.Character_Dat... minimum_characters.Characte... minimum_value.Character_Dat... pattern.Character_Data_Type xml_schema_base_type.Charac...	1 1 1 1 1 1 1 1 1	UTF-8	
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.32 Complex

*Root Class:* Data\_Type

*Role:* Abstract

*Class Description:* Complex Binary Data Types

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Complex			
<b>Subclass</b>	ComplexLSB16 ComplexLSB8 ComplexMSB16 ComplexMSB8			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.33 ComplexLSB16

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Complex number consisting of two LSB 8 byte decimal reals.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Complex . . . ComplexLSB16			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.34 ComplexLSB8

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Complex number consisting of two LSB 4 byte decimal reals.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Complex . . . ComplexLSB8			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.35 ComplexMSB16

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Complex number consisting of two MSB 8 byte decimal reals.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Complex . . . ComplexMSB16			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.36 ComplexMSB8

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Complex number consisting of two MSB 4 byte decimal reals.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Complex . . . ComplexMSB8			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.37 Decimal Integer

*Root Class:* Data\_Type

*Role:* Abstract

*Class Description:* Decimal Integer Binary Data Types

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer			
<b>Subclass</b>	SignedBitString SignedByte SignedLSB2 SignedLSB4 SignedLSB8 SignedMSB2 SignedMSB4 SignedMSB8 UnsignedBitString UnsignedByte UnsignedLSB2 UnsignedLSB4 UnsignedLSB8 UnsignedMSB2 UnsignedMSB4 UnsignedMSB8			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.38 Decimal\_Real

*Root Class:* Data\_Type

*Role:* Abstract

*Class Description:* Floating Point Binary Data Types

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Real			
<b>Subclass</b>	IEEE754LSBDouble IEEE754LSBSingle IEEE754MSBDouble IEEE754MSBSingle			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.39 IEEE754LSBDouble

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* IEEE 754 LSB double precision floating point

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Real . . . IEEE754LSBDouble			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.40 IEEE754LSBSingle

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* IEEE 754 LSB single precision floating point

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Real . . . IEEE754LSBSingle			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 20.41 IEEE754MSBDouble

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* IEEE 754 MSB double precision floating point

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Real . . . IEEE754MSBDouble			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 20.42 IEEE754MSBSingle

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* IEEE 754 MSB single precision floating point

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Real . . . IEEE754MSBSSingle			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.43 SignedBitString

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Signed Bit String

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . SignedBitString			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.44 SignedByte

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Signed 8-bit byte

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . SignedByte			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 20.45 SignedLSB2

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Signed 2's-complement LSB 2-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . SignedLSB2			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 20.46 SignedLSB4

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Signed 2's-complement LSB 4-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . SignedLSB4			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.47 SignedLSB8

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Signed 2's-complement LSB 8-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . SignedLSB8			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.48 SignedMSB2

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Signed 2's-complement MSB 2-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . SignedMSB2			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 20.49 SignedMSB4

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Signed 2's-complement MSB 4-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . SignedMSB4			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

#### 20.50 SignedMSB8

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Signed 2's-complement MSB 8-byte integer

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . SignedMSB8			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.51 UTF8\_Short\_String\_Collapsed

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The UTF8\_Short\_String\_Collapsed class indicates a limited length, whitespace-collapsed string constrained to the UTF-8 character encoding.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . UTF8_Short_String_Collapsed			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.UTF8_S... maximum_characters.UTF8_Sho... maximum_value.UTF8_Short_St... minimum_characters.UTF8_Sho... minimum_value.UTF8_Short_St... xml_schema_base_type.UTF8_S...	1 1 1 1 1 1	 255  1  xsd:token	 R R R R R R
<b>Inherited Attribute</b>	character_encoding.Character... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.52 UTF8\_Short\_String\_Preserved

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The UTF8\_Short\_String\_Preserved class indicates a limited length, whitespace-preserved string constrained to the UTF-8



character encoding.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . UTF8_Short_String_Preserved			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.UTF8_S... maximum_characters.UTF8_Sho... maximum_value.UTF8_Short_St... minimum_characters.UTF8_Sho... minimum_value.UTF8_Short_St... xml_schema_base_type.UTF8_S...	1 1 1 1 1 1	255 1 xsd:string	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.53 UTF8\_String

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The UTF8.String class indicates a limited length UTF8 text string with whitespaces removed.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . UTF8_String			
<b>Subclass</b>	none			
<b>Attribute</b>	minimum_characters.UTF8_String xml_schema_base_type.UTF8_S...	1 1	1 xsd:token	R R
<b>Inherited Attribute</b>	character_constraint.Charac... character_encoding.Characte... formation_rule.Character_Da... maximum_characters.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1 1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.54 UTF8\_Text\_Preserved

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** The UTF8\_Text\_Preserved class indicates an unlimited length, whitespace-preserved text string constrained to the UTF-8 character encoding.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Character_Data_Type . . UTF8_Text_Preserved			
<b>Subclass</b>	none			
<b>Attribute</b>	character_constraint.UTF8_T... maximum_characters.UTF8_Tex... maximum_value.UTF8_Text_Pre... minimum_characters.UTF8_Tex... minimum_value.UTF8_Text_Pre... xml_schema_base_type.UTF8.T...	1 1 1 1 1 1	1   xsd:string	R R R R R R
<b>Inherited Attribute</b>	character_encoding.Character... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.55 UnsignedBitString

**Root Class:** Data\_Type

**Role:** Concrete

**Class Description:** Unsigned Bit String

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . UnsignedBitString			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.56 UnsignedByte

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Unsigned 8-bit byte

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . UnsignedByte			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.57 UnsignedLSB2

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Unsigned 2's-complement LSB 2-byte integer

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . UnsignedLSB2			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 20.58 UnsignedLSB4

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Unsigned 2's-complement LSB 4-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . UnsignedLSB4			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.59 UnsignedLSB8

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Unsigned 2's-complement LSB 8-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . UnsignedLSB8			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.60 UnsignedMSB2

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Unsigned 2's-complement MSB 2-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . UnsignedMSB2			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.61 UnsignedMSB4

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Unsigned 2's-complement MSB 4-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . UnsignedMSB4			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 20.62 UnsignedMSB8

*Root Class:* Data\_Type

*Role:* Concrete

*Class Description:* Unsigned 2's-complement MSB 8-byte integer

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Data_Type . Binary_Data_Type . . Decimal_Integer . . . UnsignedMSB8			
<b>Subclass</b>	none			
<b>Attribute</b>	none			
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 21 Unit of Measure Classes

This section defines the PDS4 units of measure.

The units of measure class hierarchy is illustrated in the following diagram. This diagram presents the subclassOf relation for each class using a hierarchical (tree) format, providing a visual representation of the classes in relation to their parent classes.

```
+ Unit_Of_Measure
+ + Units_of_Acceleration
+ + Units_of_Amount_Of_Substance
+ + Units_of_Angle
+ + Units_of_Angular_Velocity
+ + Units_of_Area
+ + Units_of_Frame_Rate
+ + Units_of_Frequency
+ + Units_of_Length
+ + Units_of_Map_Scale
+ + Units_of_Mass
+ + Units_of_Misc
+ + Units_of_None
+ + Units_of_Optical_Path_Length
+ + Units_of_Pressure
+ + Units_of_Radiance
+ + Units_of_Rates
+ + Units_of_Solid_Angle
+ + Units_of_Storage
+ + Units_of_Temperature
+ + Units_of_Time
+ + Units_of_Velocity
+ + Units_of_Voltage
+ + Units_of_Volume
```

The class hierarchy above includes 24 unique classes.

The classes in this section are illustrated using a Unified Modeling Language (UML) class hierarchy diagram in the following figure. The following sections present the classes in a table format. The table includes the class hierarchy, class attributes, and class associations. The class attributes and associations listed include both those used to define the class and those inherited from parent classes. Cardinalities are provided where appropriate.

Figure 15: DataType UML Class Diagram



## 21.1 Unit\_Of\_Measure

**Root Class:** Unit\_Of\_Measure

**Role:** Abstract

**Class Description:** The Unit\_Of\_Measure is a definite magnitude of a quantity.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Unit_Of_Measure			
<b>Subclass</b>	Units_of_Acceleration Units_of_Amount_Of_Substance Units_of_Angle Units_of_Angular_Velocity Units_of_Area Units_of_Frame_Rate Units_of_Frequency Units_of_Length Units_of_Map_Scale Units_of_Mass Units_of_Misc Units_of_None Units_of_Optical_Path_Length Units_of_Pressure Units_of_Radiance Units_of_Rates Units_of_Solid_Angle Units_of_Storage Units_of_Temperature Units_of_Time Units_of_Velocity Units_of_Voltage Units_of_Volume			
<b>Attribute</b>	specified_unit_id.Unit_Of_M... type.Unit_Of_Measure unit_id.Unit_Of_Measure	1 1 1		
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 21.2 Units\_of\_Acceleration

**Root Class:** Unit\_Of\_Measure

**Role:** Concrete

**Class Description:** Units\_of\_Acceleration is a magnitude of acceleration.

	Entity	Card	Value/Class	Ind
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Acceleration			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Acceleration unit_id.Units_of_Acceleration	1 1 1	m/s**2 Acceleration cm/s**2 km/s**2 m/s**2	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.3 Units\_of\_Amount\_Of\_Substance

**Root Class:** Unit\_Of\_Measure

**Role:** Concrete

**Class Description:** Units\_of\_Amount\_Of\_Substance is a magnitude of mass.

	Entity	Card	Value/Class	Inc
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Amount_Of_Substance			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Amount_Of_Sub... unit_id.Units_of_Amount_Of_...	1 1 1	mol Amount_Of_Substance mol	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.4 Units\_of\_Angle

**Root Class:** Unit\_Of\_Measure

**Role:** Concrete

**Class Description:** Units\_of\_Angle is a magnitude of angle.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Angle			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Angle unit_id.Units_of_Angle	1 1 1	deg Angle arcmin arcsec deg hr mrad rad	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.5 Units\_of\_Angular\_Velocity

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Angular\_Velocity is a magnitude of speed of rotation.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Angular_Velocity			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Angular_Velocity unit_id.Units_of_Angular_Ve...	1 1 1	deg/s Angular_Velocity deg/day deg/s rad/s	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.6 Units\_of\_Area

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Area is a magnitude of area.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Area			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Area unit_id.Units_of_Area	1 1 1	m**2 Area m**2	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.7 Units\_of\_Frame\_Rate

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Frame\_Rate is a magnitude of change.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Frame_Rate			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Frame_Rate unit_id.Units_of_Frame_Rate	1 1 1	frames/s Frame_Rate frames/s	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.8 Units\_of\_Frequency

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Frequency is a magnitude of frequency.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Frequency			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Frequency unit_id.Units_of_Frequency	1 1 1	Hz Frequency Hz	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 21.9 Units\_of\_Length

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Length is a magnitude of length.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Length			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Length unit_id.Units_of_Length	1 1 1	m Length AU Angstrom cm km m micrometer mm nm	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

## 21.10 Units\_of\_Map\_Scale

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Map\_Scale is a proportional representation.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Map_Scale			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Map_Scale unit_id.Units_of_Map_Scale	1 1 1	pixel/deg Scale km/pixel m/pixel mm/pixel pixel/deg	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.11 Units\_of\_Mass

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Mass is a magnitude of mass.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Mass			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Mass unit_id.Units_of_Mass	1 1 1	kg Mass g kg	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.12 Units\_of\_Misc

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Misc provides an assortment of derived units.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Misc			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Misc unit_id.Units_of_Misc	1 1 1	DN Miscellaneous DN electron/DN pixel	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.13 Units\_of\_None

**Root Class:** Unit\_Of\_Measure

**Role:** Concrete

**Class Description:** Units\_of\_None indicates that no unit of measure applies.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_None			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_None unit_id.Units_of_None	1 1 1	none None none	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.14 Units\_of\_Optical\_Path\_Length

**Root Class:** Unit\_Of\_Measure

**Role:** Concrete

**Class Description:** Units\_of\_Optical\_Path\_Length is a magnitude of optical path length.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Optical_Path_Length			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Optical_Path_... unit_id.Units_of_Optical_Pa...	1 1 1	airmass Optical_Path_Length airmass	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.15 Units\_of\_Pressure

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Pressure is a magnitude of pressure.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Pressure			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Pressure unit_id.Units_of_Pressure	1 1 1	bar Pressure Pa bar hPa mbar	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.16 Units\_of\_Radiance

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Radiance is a magnitude of radiance.



	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Radiance			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Radiance unit_id.Units_of_Radiance	1 1 1	$W \cdot m^{**2} \cdot sr^{**1}$ Radiance $W \cdot m^{**2} \cdot sr^{**1}$	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.17 Units\_of\_Rates

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Rate is a magnitude of change.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Rates			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Rates unit_id.Units_of_Rates	1 1 1	counts/bin Rates counts/bin kilobits/s	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.18 Units\_of\_Solid\_Angle

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Solid\_Angle is a magnitude of a solid angle.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Solid_Angle			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Solid_Angle unit_id.Units_of_Solid_Angle	1 1 1	sr Solid_Angle sr	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.19 Units\_of\_Storage

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Storage is an amount of computer storage.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Storage			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Storage unit_id.Units_of_Storage	1 1 1	byte Storage byte	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.20 Units\_of\_Temperature

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Temperature is a magnitude of temperature.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Temperature			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Temperature unit_id.Units_of_Temperature	1 1 1	degC Temperature K degC	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.21 Units\_of\_Time

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Time is a magnitude of time.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Time			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Time unit_id.Units_of_Time	1 1 1	s Time day hr julian day microseconds min ms s yr	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.22 Units\_of\_Velocity

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Velocity is a magnitude of velocity.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Velocity			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Velocity unit_id.Units_of_Velocity	1 1 1	m/s Velocity cm/s km/s m/s	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.23 Units\_of\_Voltage

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Voltage is a magnitude of voltage.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Voltage			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Voltage unit_id.Units_of_Voltage	1 1 1	V Voltage V mV	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

### 21.24 Units\_of\_Volume

*Root Class:* Unit\_Of\_Measure

*Role:* Concrete

*Class Description:* Units\_of\_Volume is a magnitude of volume.

	<b>Entity</b>	<b>Card</b>	<b>Value/Class</b>	<b>Ind</b>
<b>Hierarchy</b>	Unit_Of_Measure . Units_of_Volume			
<b>Subclass</b>	none			
<b>Attribute</b>	specified_unit_id.Units_of_... type.Units_of_Volume unit_id.Units_of_Volume	1 1 1	L Volume L m**3	R R R
<b>Inherited Attribute</b>	none			
<b>Association</b>	none			
<b>Inherited Association</b>	none			
<b>Referenced from</b>	none			

Figure 16: PDS Object Unification Using OAIS Information Object

## 22 Unification

This section presents the data model for the Information Object, a fundamental component of the Open Archival Information System (OAIS) Reference Model. The Information Object provides a model for the unification of PDS Objects under the PDS defined extensions, the PDS\_Information\_Object, the Tagged\_Data\_Object, and two Context classes.

## 23 Specification Dictionary

The Specification Dictionary provides the definitions of data elements and associations. The data elements are those that are used as class attributes in this specification. They represent a subset of those in the Planetary Science Data Dictionary. The associations are those that are defined and used in this specification.

**abstract\_desc in Data\_Set\_PDS3** The abstract\_desc attribute provides a summary of a text, scientific article, or document.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**abstract\_flag in DD\_Class** The abstract flag attribute indicates whether or not the class can be instantiated. Abstract flag is only included if a value of 'true' is desired and indicates that the class is abstract and cannot be used in a label.

*Type:* ASCII\_Boolean

*Class Name:* DD\_Class

*Nillable:* false

*Attribute Concept:* FLAG

*Conceptual Domain:* BOOLEAN

*Steward:* ops

*Namespace Id:* pds

**abstract\_flag in DD\_Class\_Full** The abstract flag attribute indicates whether or not the class can be instantiated. Abstract flag is only included if a value of 'true' is desired and indicates that the class is abstract and cannot be used in a label.

*Type:* ASCII\_Boolean

*Class Name:* DD\_Class\_Full

*Nillable:* false

*Attribute Concept:* FLAG

*Conceptual Domain:* BOOLEAN

*Steward:* ops

*Namespace Id:* pds

**acknowledgement\_text in Document** The `acknowledgement_text` attribute is a character string which recognizes another's contribution, authority, or right.

*Type:* ASCII.Text.Preserved

*Class Name:* Document

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* TEXT

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**address in Facility** The `address` attribute provides a mailing address.

*Type:* UTF8.Text.Preserved

*Class Name:* Facility

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* ADDRESS



*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**affiliation\_type in PDS\_Affiliate** The affiliation type data attribute describes the type of relationship an individual has with the PDS.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* Affiliate, Data Provider, Manager, Technical Staff

**alias in Alias\_List** The alias association is a relationship to Alias, an alternate name and identification.

*Type:* Association

**alias\_list in Identification\_Area** The alias\_list association is a relationship to Alias\_List, a list of alternate names and identifications.

*Type:* Association

**alternate\_designation in Target\_Identification** The alternate\_designation attribute provides aliases.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Target\_Identification

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**alternate\_id in Alias** The alternate\_id attribute provides an additional identifier supplied by the data provider.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Alias

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**alternate\_telephone\_number in PDS\_Affiliate** The telephone\_number attribute provides a telephone number in international notation in compliance with the E.164 telephone number format recommendation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**alternate\_title in Alias** The alternate \_title attribute provides an alternate title for the product.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Alias

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TITLE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**altitude in Telescope** The altitude attribute provides the height of anything above a given reference plane.

*Type:* ASCII\_Real

*Unit of Measure Type:* Units\_of\_Length

*Valid Units:* AU, Angstrom, cm, km, m, micrometer, mm, nm

*Specified Unit Id:* m

*Class Name:* Telescope

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**aperture in Telescope** The aperture attribute provides the diameter of an opening, usually circular, that limits the quantity of light that can enter an optical instrument.

*Type:* ASCII\_Real

*Unit of Measure Type:* Units\_of\_Length

*Valid Units:* AU, Angstrom, cm, km, m, micrometer, mm, nm

*Specified Unit Id:* m

*Class Name:* Telescope

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**application\_process\_id in Telemetry\_Parameters** The application\_process\_id attribute identifies the process, or source, which created the data.

*Type:* ASCII.Integer

*Class Name:* Telemetry\_Parameters

*Minimum Value:* 0

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* INTEGER

*Steward:* img

*Namespace Id:* img

**application\_process\_name in Telemetry\_Parameters** The application\_process\_name attribute provides the name associated with the source or process which created the data.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Telemetry\_Parameters

*Minimum Characters:* 1

*Maximum Characters:* 127

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* img

*Namespace Id:* img

**archive\_status in Data\_Set\_PDS3** The ARCHIVE\_STATUS attribute indicates the stage to which a data set has progressed in the archiving process, from IN\_QUEUE through ARCHIVED. It can also take on the values SUPERSEDED or SAFED, which indicate that the data set is not part of the active archive. ACCUMULATING can be appended to some values to indicate that the data set is incomplete and/or that not all components have reached the stage given by the root value; ACCUMULATING would be used, for example, when the archive is being delivered incrementally, as from a mission that lasts many months or years.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* STATUS

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* ARCHIVED, ARCHIVED\_ACCUMULATING, IN\_LIEN\_RESOLUTION, IN\_LIEN\_RESOLUTION\_ACCUMULATING, IN\_PEER\_REVIEW, IN\_PEER\_REVIEW\_ACCUMULATING, IN\_QUEUE, IN\_QUEUE\_ACCUMULATING, LOCALLY\_ARCHIVED, LOCALLY\_ARCHIVED\_ACCUMULATING, PRE\_PEER\_REVIEW, PRE\_PEER\_REVIEW\_ACCUMULATING, SAFED, SUPERSEDED

**archive\_status in Volume\_PDS3** The ARCHIVE\_STATUS attribute indicates the stage to which a data set has progressed in the archiving process, from IN\_QUEUE through ARCHIVED. It can also take on the values SUPERSEDED or SAFED, which indicate that the data set is not part of the active archive. ACCUMULATING can be appended to some values to indicate that the data set is incomplete and/or that not all components have reached the stage given by the root value; ACCUMULATING would be used, for example, when the archive is being delivered incrementally, as from a mission that lasts many months or years.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* STATUS

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* ARCHIVED, ARCHIVED\_ACCUMULATING, IN\_LIEN\_RESOLUTION, IN\_LIEN\_RESOLUTION\_ACCUMULATING, IN\_PEER\_REVIEW, IN\_PEER\_REVIEW\_ACCUMULATING, IN\_QUEUE, IN\_QUEUE\_ACCUMULATING, LOCALLY\_ARCHIVED, LOCALLY\_ARCHIVED\_ACCUMULATING, PRE\_PEER\_REVIEW, PRE\_PEER\_REVIEW\_ACCUMULATING, SAFED, SUPERSEDED

**archive\_status\_note in Volume\_PDS3** The archive status note attribute provides a comment about the archive status.

*Type:* ASCII.Text.Preserved

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**associated\_Special\_Constants\_in\_Array** The associated\_Special\_Constants association is a relationship to special constants.

*Type:* Association

**associated\_Special\_Constants\_in\_Field\_Binary** The associated\_Special\_Constants association is a relationship to special constants.

*Type:* Association

**associated\_Special\_Constants\_in\_Field\_Bit** The associated\_Special\_Constants association is a relationship to special constants.

*Type:* Association

**associated\_Special\_Constants\_in\_Field\_Character** The associated\_Special\_Constants association is a relationship to special constants.

*Type:* Association

**associated\_Special\_Constants\_in\_Field\_Delimited** The associated\_Special\_Constants association is a relationship to special constants.



*Type:* Association

**associated\_Statistics in Array** The associated\_Object\_Statistics association is a relationship to object statistics.

*Type:* Association

**associated\_Statistics in Field\_Binary** The associated\_Object\_Statistics association is a relationship to object statistics.

*Type:* Association

**associated\_Statistics in Field\_Character** The associated\_Object\_Statistics association is a relationship to object statistics.

*Type:* Association

**associated\_Statistics in Field\_Delimited** The associated\_Object\_Statistics association is a relationship to object statistics.

*Type:* Association

**attribute\_concept in DD\_Attribute\_Full** The attribute\_concept attribute provides the type of information (classification) conveyed by the attribute – e.g., stop\_date\_time has attribute\_concept = date\_time.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* ADDRESS, ANGLE, ATTRIBUTE, BIT, CHECKSUM, COLLECTION, CONSTANT, COSINE, COUNT, DELIMITER, DESCRIPTION, DEVIATION, DIRECTION, DISTANCE, DOI, DURATION, FACTOR, FLAG, FORMAT, GROUP, HOME, ID, LATITUDE, LENGTH, LIST, LOCATION, LOGICAL, LONGITUDE, MASK, MAXIMUM, MEAN, MEDIAN, MINIMUM, NAME, NOTE, NUMBER, OFFSET, ORDER, PARALLEL, PASSWORD, PATH, PATTERN, PIXEL, QUATERNION, RADIUS, RATIO, REFERENCE, RESOLUTION, ROLE, ROTATION, SCALE, SEQUENCE, SET, SIZE, STATUS, SUMMARY, SYNTAX, TEMPERATURE, TEXT, TITLE, TYPE, UNIT, UNKNOWN, VALUE, VECTOR

**author\_list in Software** The `author_list` attribute provides a list of people to be cited as the authors of the associated product. Lists are constructed with last names first and first and middle names and/or initials following. Initials are terminated by periods and delimited by single spaces. Suffixes (if applicable) follow everything else, after a final comma. Hyphenated names may be reduced to initials as "J.-P." Each person's full name is separated from the next by a semi-colon. There is no "and" before the last name. If there is no author list, `editor_list` must be present and non-null.

*Type:* UTF8\_Text\_Preserved

*Class Name:* Software

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* LIST

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**author\_list in Citation\_Information** The `author_list` attribute provides a list of people to be cited as the authors of the associated product. Lists are constructed with last names first and first and middle names

and/or initials following. Initials are terminated by periods and delimited by single spaces. Suffixes (if applicable) follow everything else, after a final comma. Hyphenated names may be reduced to initials as "J.-P." Each person's full name is separated from the next by a semi-colon. There is no "and" before the last name. If there is no author list, editor\_list must be present and non-null.

*Type:* UTF8\_Text\_Preserved

*Class Name:* Citation\_Information

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* LIST

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**author\_list in Document** The author\_list attribute provides a list of people to be cited as the authors of the associated product. Lists are constructed with last names first and first and middle names and/or initials following. Initials are terminated by periods and delimited by single spaces. Suffixes (if applicable) follow everything else, after a final comma. Hyphenated names may be reduced to initials as "J.-P." Each person's full name is separated from the next by a semi-colon. There is no "and" before the last name. If there is no author list, editor\_list must be present and non-null.

*Type:* UTF8\_Text\_Preserved

*Class Name:* Document

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* LIST

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**axes in Array** The axes attribute provides a count of the axes.

*Type:* ASCII.Integer

*Class Name:* Array

*Minimum Value:* 1

*Maximum Value:* 16

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**axes in Array\_2D** The axes attribute provides a count of the axes.

*Type:* ASCII.Integer

*Class Name:* Array\_2D

*Minimum Value:* 1

*Maximum Value:* 16

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

*Value:* 2

**axes in Array\_3D** The axes attribute provides a count of the axes.

*Type:* ASCII.Integer

*Class Name:* Array\_3D

*Minimum Value:* 1

*Maximum Value:* 16

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

*Value:* 3

**axis\_index\_order in Array** The axis\_index\_order attribute provides the axis index that varies fastest with respect to storage order.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Array

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ORDER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Last Index Fastest

**axis\_name in Axis\_Array** The axis\_name attribute provides a word or combination of words by which the axis is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Axis\_Array

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Schematron Rule:* The name of the first axis of an Array\_2d.Image must be set to either Line or Sample.

*Schematron Rule:* The name of the second axis of an Array\_2d.Image must be set to either Line or Sample.

*Schematron Rule:* In an Array\_3D.Spectrum, if the axis\_name is 'Band', then the Band\_Bin\_Set class must be present.

**band\_number in Band\_Bin** The band\_number attribute provides a number corresponding to the band in the spectral cube. The band number is equivalent to the instrument band number.

*Type:* ASCII\_Integer

*Class Name:* Band\_Bin

*Minimum Value:* 1

*Maximum Value:* 512

*Nullable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* INTEGER

*Steward:* img

*Namespace Id:* pds

**band\_width in Band\_Bin** The band\_width attributes provides the width, at half height, of the band.

*Type:* ASCII\_Real

*Unit of Measure Type:* Units\_of\_Length

*Valid Units:* AU, Angstrom, cm, km, m, micrometer, mm, nm

*Class Name:* Band\_Bin

*Minimum Value:* 0

*Nullable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* REAL

*Steward:* img

*Namespace Id:* pds

**bit\_fields in Packed\_Data\_Fields** The bit\_fields attribute provides the number of defined bit fields (Field\_Bit definitions) within the Packed\_Data\_Field.

*Type:* ASCII\_Integer

*Class Name:* Packed\_Data\_Fields

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**bit\_mask in Object\_Statistics** The bit\_mask attribute is a series of binary digits identifying the active bits in a value; it has exactly the same number of the bits as the array element to which it is applied.

*Type:* ASCII\_Numeric\_Base2

*Class Name:* Object\_Statistics

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* MASK

*Conceptual Domain:* NUMERIC

*Steward:* pds



*Namespace Id:* pds

**bit\_string in Digital\_Object** The bit string attribute is a sequence of digital bits. It is the content of a digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Digital\_Object

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**bundle\_type in Bundle** The bundle\_type attribute provides a classification for the bundle.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Bundle

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Archive, Supplemental

**center\_wavelength in Band\_Bin** The center\_wavelength attribute provides the wavelength or frequency describing the center of a bin along the band axis of a spectral cube. When describing data from a spectrometer, the value corresponds to the peak of the response function for a particular detector and/or grating position.

*Type:* ASCII\_Real

*Unit of Measure Type:* Units\_of\_Length

*Valid Units:* AU, Angstrom, cm, km, m, micrometer, mm, nm

*Class Name:* Band\_Bin

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* REAL

*Steward:* img

*Namespace Id:* pds

**character\_constraint in ASCII\_AnyURI** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_AnyURI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_DOI** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_DOI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Date** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Date\_DOY** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date\_DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Date\_Time** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Date\_Time\_DOY** The character\_constraint attribute limits the characters allowed. charac-

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date\_Time\_DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Date\_Time\_UTC** The character\_constraint attribute limits the characters allowed. charac-

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time\_UTC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Date\_Time\_YMD** The character\_constraint attribute limits the characters allowed. charac-

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time\_YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Date\_YMD** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Directory\_Path\_Name** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Directory\_Path\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_File\_Name** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_File\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_File\_Specification\_Name** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_File\_Specification\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255



*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Integer** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**character\_constraint in ASCII\_LID** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_LIDVID** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_LIDVID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_LIDVID\_LID** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_LIDVID\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_MD5\_Checksum** The character\_constraint attribute limits the characters allowed. charac-

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_MD5\_Checksum

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_NonNegative\_Integer** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_NonNegative\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**character\_constraint in ASCII\_Numeric\_Base16** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base16

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**character\_constraint in ASCII\_Numeric\_Base2** The  
ter\_constraint attribute limits the characters allowed.

charac-

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base2

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Numeric\_Base8** The  
ter\_constraint attribute limits the characters allowed.

charac-

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base8

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Real** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Real

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**character\_constraint in ASCII\_Short\_String\_Collapsed** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Short\_String\_Preserved** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_String** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_String

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Text\_Collapsed** The character\_constraint attribute limits the characters allowed. charac-

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Text\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Text\_Preserved** The character\_constraint attribute limits the characters allowed. charac-

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Text\_Preserved

*Minimum Characters:* 1



*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_Time** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in ASCII\_VID** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_VID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII

**character\_constraint in Character\_Data\_Type** The character\_constraint attribute limits the characters allowed. charac-

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**character\_constraint in UTF8\_Short\_String\_Collapsed** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8.Short.String.Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**character\_constraint in UTF8.Short.String.Preserved** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8.Short.String.Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**character\_constraint in UTF8.Text.Preserved** The character\_constraint attribute limits the characters allowed.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8.Text.Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**character\_encoding in ASCII\_AnyURI** The `character_encoding` attribute identifies the standard that maps a set of allowed characters to their machine readable code.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_AnyURI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* UTF-8

**character\_encoding in Character\_Data\_Type** The character\_encoding attribute identifies the standard that maps a set of allowed characters to their machine readable code.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* UTF-8

**checksum\_manifest\_checksum in Information\_Package\_Component** The checksum manifest checksum provides the checksum for the checksum manifest file.

*Type:* ASCII\_MD5\_Checksum

*Class Name:* Information\_Package\_Component

*Minimum Characters:* 32

*Maximum Characters:* 32

*Format:* 0123456789abcdef

*Nilable:* false

*Attribute Concept:* CHECKSUM

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**checksum\_type in Information\_Package\_Component** The checksum type attribute provides the name of the checksum algorithm used to calculate the checksum value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Information\_Package\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**citation\_information in Identification\_Area** The citation\_information is a relationship to Citation\_Information, fields often used in citing the product.

*Type:* Association

**citation\_text in Data\_Set\_PDS3** The citation\_text attribute provides a character string containing a literature or other citation in sufficient detail that the material could be located in PDS or elsewhere.

*Type:* ASCII.Text.Preserved

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* TEXT

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**class\_name in DD\_Attribute\_Full** The `class_name` attribute provides the common name by which the class is identified, as well as the class within which the attribute is used.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**collection\_type in Collection** The `collection_type` attribute provides a classification for the collection.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Collection

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Browse, Calibration, Context, Data, Document, Geometry, Miscellaneous, SPICE Kernel, XML Schema

**comment in DD\_Attribute** The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* DD\_Attribute

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**comment in DD\_Attribute\_Full** The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* DD\_Attribute\_Full



*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**comment in DD\_Class\_Full** The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**comment in Ingest\_LDD** The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* Ingest\_LDD

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**comment in Alias** The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* Alias

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**comment in Context\_Area** The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* Context\_Area

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**comment in File** The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* File

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**comment in InternalReference** The comment attribute provides one or more remarks or thoughts relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* InternalReference

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**compile\_note in Software\_Source** The compile note attribute provides a brief statement giving particulars about the compilation of the software source.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**conceptual\_domain in DD\_Value\_Domain\_Full** The conceptual\_domain attribute provides the domain to which the value has been assigned.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* BOOLEAN, INTEGER, NAME, NUMERIC, REAL,  
SHORT\_STRING, TEXT, TIME, TYPE, UNKNOWN

**confidence\_level\_note in Data\_Set\_PDS3** The `confidence_level_note` attribute is a text field which characterizes the reliability of data within a data set or the reliability of a particular programming algorithm or software component. Essentially, this note discusses the level of confidence in the accuracy of the data or in the ability of the software to produce accurate results.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**constant\_value in DD\_Association** The `constant_value` attribute provides the value to be used if an attribute is static.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Association

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**container\_type in Zip** The container type attribute indicates the method used to package the components.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Zip

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* GZIP, LZIP, TAR, ZIP

**context\_area in Product\_Bundle** The context\_area association is a relationship to Context\_Area.

*Type:* Association

**context\_area in Product\_Collection** The context\_area association is a relationship to Context\_Area.

*Type:* Association

**context\_area in Product\_Document** The context\_area association is a relationship to Context\_Area.

*Type:* Association

**context\_area in Product\_SPICE\_Kernel** The context\_area association is a relationship to Context\_Area.

*Type:* Association

**coordinate\_source in Telescope** The coordinate\_source provides the name of the source of a set of coordinates.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Telescope

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Aerial survey - North American (1983) datum, Astronomical, Doppler determined - WGS 72 datum, Geodetic - Adindan datum, Geodetic - Australian datum, Geodetic - Campo Inchauspe (Argentina) datum, Geodetic - Cape (South Africa) datum, Geodetic - Corregio Alegre (Brazil) datum, Geodetic - European 1979 datum, Geodetic - European datum, Geodetic - GRS 80 datum, Geodetic - Hermannskogel datum, Geodetic - Indian datum, Geodetic - La Canoa (Venezuela) datum, Geodetic - New Zealand datum, Geodetic - North American (1927) datum, Geodetic - Old Hawaiian datum, Geodetic - Ordnance Survey of Great Britain (1936) datum, Geodetic - Ordnance Survey of Great Britain (SN) 1980 datum, Geodetic - Potsdam datum, Geodetic - Puerto Rican (1940) datum, Geodetic - South American datum, Geodetic - Tokyo datum, Geodetic - WGS 84 datum, Geodetic - datum unknown, Satellite determined - datum unknown, Unknown

**copyright in Document** The copyright attribute is a character string giving information about the exclusive right to make copies, license, and otherwise exploit an object, whether physical or digital.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Document

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**country in Facility** country

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Facility

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**creation\_date\_time in File** The creation\_date\_time attribute provides a date and time when the object was created.



*Type:* ASCII.Date\_Time

*Class Name:* File

*Format:* YYYY-MM-DDTHH:MM:SS.SSS(Z)/YYYY-  
DOYTHH:MM:SS.SSS(Z)

*Nilable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**curating\_node\_id in Volume\_PDS3** The `curating_node_id` attribute provides the id of the node currently maintaining the data set or volume and is responsible for maintaining catalog information.

*Type:* ASCII.Short\_String\_Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**data\_object in DD\_Attribute** The `data_object` association is a relationship to Data Object.

*Type:* Association

**data\_object in DD\_Attribute\_Full** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in DD\_Class** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in DD\_Class\_Full** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Data\_Set\_PDS3** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Ingest\_LDD** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Instrument\_Host\_PDS3** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Instrument\_PDS3** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Mission\_PDS3** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Software** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Software\_Binary** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Software\_Script** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Software\_Source** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Target\_PDS3** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Volume\_PDS3** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Volume\_Set\_PDS3** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Agency** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Array** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Bundle** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Document** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Encoded\_Byte\_Stream** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Facility** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Field\_Statistics** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in File** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Geometry** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Instrument** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Instrument\_Host** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Investigation** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Node** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Object\_Statistics** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Observing\_System** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Other** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in PDS\_Affiliate** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in PDS\_Guest** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Parsable\_Byte\_Stream** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Quaternion** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Resource** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Table\_Base** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Target** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Update** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_object in Vector** The data\_object association is a relationship to Data Object.

*Type:* Association

**data\_regime in Primary\_Result\_Summary** The data\_regime attribute provides the wavelength (or an analogous concept for things like particle detectors) of the observations, stated as a category.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Primary\_Result\_Summary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Dust, Electric Field, Electrons, Far Infrared, Gamma Ray, Infrared, Ions, Magnetic Field, Microwave, Millimeter, Near Infrared, Particles, Pressure, Radio, Sub-Millimeter, Temperature, Ultraviolet, Visible, X-Ray

**data\_set\_desc in Data\_Set\_PDS3** The data\_set\_desc attribute describes the content and type of a data set and provides information required to use the data (such as binning information).

*Type:* ASCII\_Text\_Preserved

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Nullable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**data\_set\_id in Data\_Set\_PDS3** The data set id provides a formal name used to refer to a data set.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**data\_set\_name in Data\_Set\_PDS3** The `data_set_name` attribute provides the full name given to a data set or a data product. The `data_set_name` typically identifies the instrument that acquired the data of that instrument Example value `data_set_id`. Note This attribute is defined in the AMMOS Magellan catalog as an alias for `file_name` to provide backward compatibility

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**data\_set\_release\_date in Data\_Set\_PDS3** The `data_set_release_date` attribute provides the date when a data set is released by the data producer for archive or publication. In many systems this represents the end of a proprietary or validation period. Formation rule In AMMOS identify the date at which a product may be released to the general public from proprietary access. AMMOS-related systems should apply this attribute only to proprietary data.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1



*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**data\_set\_terse\_desc in Data\_Set\_PDS3** A one line description of the data set

*Type:* ASCII.Text.Preserved

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**data\_type in Element\_Array** The data\_type attribute provides the hardware representation used to store a value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Element\_Array

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ComplexLSB16, ComplexLSB8, ComplexMSB16, ComplexMSB8, IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedBitString, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedBitString, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8

**data.type in Field\_Binary** The data.type attribute provides the hardware representation used to store a value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Field\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII\_AnyURI, ASCII\_Boolean, ASCII\_DOI, ASCII\_Date, ASCII\_Date\_DOY, ASCII\_Date\_Time, ASCII\_Date\_Time\_DOY, ASCII\_Date\_Time\_UTC, ASCII\_Date\_Time\_YMD, 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, Complex\_LSB16, Complex\_LSB8, Complex\_MSB16, Complex\_MSB8, IEEE754\_LSB\_Double, IEEE754\_LSB\_Single, IEEE754\_MSB\_Double, IEEE754\_MSB\_Single, Signed\_BitString, Signed\_Byte, Signed\_LSB2, Signed\_LSB4, Signed\_LSB8, Signed\_MSB2, Signed\_MSB4, Signed\_MSB8, UTF8\_String, Unsigned\_BitString, Unsigned\_Byte, Unsigned\_LSB2, Unsigned\_LSB4, Unsigned\_LSB8, Unsigned\_MSB2, Unsigned\_MSB4, Unsigned\_MSB8

**data\_type in Field\_Bit** The data\_type attribute provides the hardware representation used to store a value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Field\_Bit

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Signed\_BitString, Unsigned\_BitString

**data\_type in Field\_Character** The data\_type attribute provides the hardware representation used to store a value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Field.Character

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII.AnyURI, ASCII.Boolean, ASCII.DOI, ASCII.Date, ASCII.Date\_DOY, ASCII.Date\_Time, ASCII.Date\_Time\_DOY, ASCII.Date\_Time\_UTC, ASCII.Date\_Time\_YMD, 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

**data\_type in Field\_Delimited** The data\_type attribute provides the hardware representation used to store a value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Field.Delimited

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII\_AnyURI, ASCII\_Boolean, ASCII\_DOI, ASCII\_Date, ASCII\_Date\_DOY, ASCII\_Date\_Time, ASCII\_Date\_Time\_DOY, ASCII\_Date\_Time\_UTC, ASCII\_Date\_Time\_YMD, 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

**data\_type in Quaternion\_Component** The data\_type attribute provides the hardware representation used to store a value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Quaternion\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII\_Real

**data\_type in Vector** The data\_type attribute provides the hardware representation used to store a value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Vector

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ASCII.Real

**date\_time in Update\_Entry** The date\_time attribute provides the date and time of an event.

*Type:* ASCII.Date.Time

*Class Name:* Update\_Entry

*Format:* YYYY-MM-DDTHH:MM:SS.SSS(Z)/YYYY-DOYTHH:MM:SS.SSS(Z)

*Nillable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**dd\_association in DD\_Class** The local\_association\_attribute association provides a relationship to an attribute.

*Type:* Association

**dd\_association in DD\_Class\_Full** The local\_association\_attribute association provides a relationship to an attribute.

*Type:* Association

**definition in DD\_Attribute** The definition attribute provides a statement, picture in words, or account that defines the term.

*Type:* ASCII\_Text\_Preserved

*Class Name:* DD\_Attribute

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**definition in DD\_Attribute\_Full** The definition attribute provides a statement, picture in words, or account that defines the term.

*Type:* ASCII\_Text\_Preserved

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**definition in DD\_Class** The definition attribute provides a statement, picture in words, or account that defines the term.

*Type:* ASCII.Text.Preserved

*Class Name:* DD\_Class

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**definition in DD\_Class\_Full** The definition attribute provides a statement, picture in words, or account that defines the term.

*Type:* ASCII.Text.Preserved

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops



*Namespace Id:* pds

**definition in Terminological\_Entry** The definition attribute provides a statement, picture in words, or account that defines the term.

*Type:* UTF8\_Text\_Preserved

*Class Name:* Terminological\_Entry

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Information\_Package** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Information\_Package

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**description in Node** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Node

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**description in PDS\_Affiliate** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**description in PDS\_Guest** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* PDS\_Guest

*Minimum Characters:* 1

*Nullable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**description in Software** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software

*Minimum Characters:* 1

*Nullable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**description in Volume\_PDS3** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**description in Volume\_Set\_PDS3** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Volume\_Set\_PDS3

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**description in Agency** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Agency

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Array** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Array

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Bundle** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Bundle

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Citation Information** The description attribute provides a short (5KB or less) description of the product as a whole.

*Type:* UTF8\_Text\_Preserved

*Class Name:* Citation\_Information

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

*Schematron Rule:* The description in Citation\_Information must be greater than 1 and less than 5000 bytes (not counting spaces).

*Schematron Rule:* In Product\_Bundle a description is required in Citation\_Information.

*Schematron Rule:* In Product\_Collection a description is required in Citation\_Information.

*Schematron Rule:* In Product\_Document a description is required in Citation\_Information.

*Schematron Rule:* In Product\_File\_Text a description is required in Citation\_Information.

**description in Collection** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Collection

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Document** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Document

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Document\_Format** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Document\_Format

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Encoded\_Byte\_Stream** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Encoded\_Byte\_Stream

*Minimum Characters:* 1

*Nilable:* false



*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in External\_Reference** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* External\_Reference

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Facility** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Facility

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Field\_Binary** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Field\_Binary

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Field\_Bit** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Field\_Bit

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Field\_Character** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Field\_Character

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Field\_Delimited** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Field\_Delimited

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Field\_Statistics** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Field\_Statistics

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Instrument** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Instrument

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Instrument\_Host** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Instrument\_Host

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Investigation** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Investigation

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Modification\_Detail** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Modification\_Detail

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Object\_Statistics** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Object\_Statistics

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Observing\_System** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Observing\_System

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Observing\_System\_Component** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Observing\_System\_Component

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Other** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Other

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Packed\_Data\_Fields** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Packed\_Data\_Fields

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds



**description in Parsable\_Byte\_Stream** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Parsable\_Byte\_Stream

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Primary\_Result\_Summary** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Short\_String\_Preserved

*Class Name:* Primary\_Result\_Summary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**description in Quaternion** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Quaternion

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Quaternion\_Component** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Quaternion\_Component

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Resource** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Resource

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Table\_Base** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Table\_Base

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Target** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Target

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Target\_Identification** The description attribute provides additional information or clarification, as needed.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Target\_Identification

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Telescope** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Telescope

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Steward:* pds

*Namespace Id:* pds

**description in Update** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* Update

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Update\_Entry** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* Update\_Entry

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Vector** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* Vector

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Vector\_Component** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* Vector\_Component

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**description in Zip** The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.

*Type:* ASCII.Text.Preserved

*Class Name:* Zip

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**detector\_number in Band\_Bin** The detector\_number attribute provides the spectrometer detector number corresponding to a band of a spectral cube. Detector numbers are usually assigned consecutively from 1, in order of increasing wavelength.

*Type:* ASCII.Integer

*Class Name:* Band\_Bin

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* INTEGER

*Steward:* img

*Namespace Id:* pds

**directory\_path\_name in Document\_File** The `directory_path_name` attribute provides a sequence of names that locates a directory in a hierarchy of directories.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Document\_File

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**document\_file in Document\_Format\_Set** The `document_file` association is a relationship to a document file.

*Type:* Association

**document\_format in Document\_Format\_Set** The `document_format` attribute associates a `Document_Format` with the `Document_Format_Set`.

*Type:* Association



**document\_format\_set in Product\_Document** The document\_format\_set association is a relationship to a set of one or more document formats.

*Type:* Association

**document\_name in Document** The document\_title attribute provides the full name of the published document. This optional attribute is used only if the title in the identification area of the document product is not sufficient.

*Type:* UTF8\_Text\_Preserved

*Class Name:* Document

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**document\_standard\_id in Document\_File** The document\_standard\_id attribute provides the formal name of a standard used for the structure of a document file.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Document\_File

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 7-Bit ASCII Text, Encapsulated Postscript, GIF, HTML 2.0, HTML 3.2, HTML 4.0, HTML 4.01, JPEG, LaTeX, Microsoft Word, PDF, PDF/A, PNG, Postscript, Rich Text, TIFF, UTF-8 Text

**doi in Document** The doi attribute provides the Digital Object Identifier for an object, assigned by the appropriate DOI System Registration Agency.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Document

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* DOI

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**doi in External Reference** The doi attribute provides the Digital Object Identifier for an object, assigned by the appropriate DOI System Registration Agency.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* External\_Reference

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* DOI

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**earth\_received\_start\_date\_time in Telemetry\_Parameters** The earth\_received\_start\_date\_time attribute provides the earliest time at which any component telemetry data for a particular product was received.

*Type:* ASCII\_Date\_Time\_UTC

*Class Name:* Telemetry\_Parameters

*Format:*

YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

*Nullable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* img

*Namespace Id:* img

**earth\_received\_stop\_date\_time in Telemetry\_Parameters** The earth\_received\_stop\_date\_time attribute provides the latest time at which any component telemetry data for a particular product was received.

*Type:* ASCII\_Date\_Time\_UTC

*Class Name:* Telemetry\_Parameters

*Format:*

YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

*Nilable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* img

*Namespace Id:* img

**editor\_list in Citation\_Information** The editor\_list attribute provides a list of people to be cited as the editors of the associated product. Lists are constructed with last names first and first and middle names and/or initials following. Initials are terminated by periods and delimited by single spaces. Suffixes (if applicable) follow everything else, after a final comma. Hyphenated names may be reduced to initials as "J.-P." Each person's full name is separated from the next by a semi-colon. There is no "and" before the last name.

*Type:* UTF8\_Text\_Preserved

*Class Name:* Citation\_Information

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* LIST

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**editor\_list in Document** The editor\_list attribute provides a list of people to be cited as the editors of the associated product. Lists are constructed with last names first and first and middle names and/or initials following. Initials are terminated by periods and delimited by single spaces. Suffixes (if applicable) follow everything else, after a final comma. Hyphenated names may be reduced to initials as "J.-P." Each person's full name is separated from the next by a semi-colon. There is no "and" before the last name.

*Type:* UTF8\_Text\_Preserved

*Class Name:* Document

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* LIST

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**electronic\_mail\_address in PDS\_Affiliate** The electronic mail address attribute provides a multi-part email address: the first part (the user name), which identifies a unique user, is separated by an "at sign" from the host name, which uniquely identifies the mail server.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ADDRESS

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**electronic\_mail\_address in PDS\_Guest** The electronic mail address attribute provides a multi-part email address: the first part (the user name), which identifies a unique user, is separated by an "at sign" from the host name, which uniquely identifies the mail server.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* PDS\_Guest

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ADDRESS

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**elements in Axis\_Array** The elements attribute provides the count of the number of elements along an array axis.

*Type:* ASCII.Integer

*Class Name:* Axis\_Array

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**encoding\_standard\_id in Encoded\_Binary** The encoding\_standard\_id attribute provides the formal name of a standard used for the structure of an Encoded Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Encoded\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* CCSDS Communication Protocols

**encoding\_standard\_id in Encoded\_Byte\_Stream** The encoding\_standard\_id attribute provides the formal name of a standard used for the structure of an Encoded Byte Stream digital object.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Encoded\_Byte\_Stream

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**encoding\_standard\_id in Encoded\_Header** The `encoding_standard_id` attribute provides the formal name of a standard used for the structure of an Encoded Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Encoded\_Header

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* TIFF

**encoding\_standard\_id in Encoded\_Image** The `encoding_standard_id` attribute provides the formal name of a standard used for the structure of an Encoded Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Encoded\_Image

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING



*Steward:* pds

*Namespace Id:* pds

*Value:* GIF, J2C, JPEG, PDF, PDF/A, PNG, TIFF

**encoding\_type in SPICE\_Kernel** The `encoding_type` attribute provides the storage format (binary or character).

*Type:* ASCII.Short.String.Collapsed

*Class Name:* SPICE\_Kernel

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Steward:* pds

*Namespace Id:* pds

*Value:* Binary, Character

**enumeration\_flag in DD\_Value\_Domain** The `enumeration_flag` attribute indicates whether there is an enumerated set of permissible values.

*Type:* ASCII.Boolean

*Class Name:* DD\_Value\_Domain

*Nillable:* false

*Attribute Concept:* FLAG

*Conceptual Domain:* BOOLEAN

*Steward:* ops

*Namespace Id:* pds

**enumeration\_flag in DD\_Value\_Domain\_Full** The `enumeration_flag` attribute indicates whether there is an enumerated set of permissible values.

*Type:* ASCII\_Boolean

*Class Name:* DD\_Value\_Domain\_Full

*Nilable:* false

*Attribute Concept:* FLAG

*Conceptual Domain:* BOOLEAN

*Steward:* ops

*Namespace Id:* pds

**error\_constant in Special\_Constants** The `error_constant` attribute provides a value that indicates the original value was in error.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* CONSTANT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**expected\_packets in Telemetry\_Parameters** The `expected_packets` attribute provides the total number of telemetry packets which constitute a complete data product, i.e., a data product without missing data.

*Type:* ASCII\_Integer

*Class Name:* Telemetry\_Parameters

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* img

*Namespace Id:* img

**external\_reference in Observing\_System\_Component** The external\_reference association is a relationship to External\_Reference.

*Type:* Association

**external\_reference in Reference\_List** The external\_reference association is a relationship to External\_Reference.

*Type:* Association

**field\_delimiter in Table\_Delimited** The field\_delimiter attribute provides the character or characters that indicate the end of a character string.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Table\_Delimited

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* DELIMITER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* comma, horizontal tab, semicolon, vertical bar

**field\_format in Field\_Binary** The field\_format attribute gives the magnitude and precision of the data value. The standard POSIX string formats are used.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Field\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* FORMAT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**field\_format in Field\_Bit** The field\_format attribute gives the magnitude and precision of the data value. The standard POSIX string formats are used.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Field\_Bit

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* FORMAT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**field\_format in Field\_Character** The `field_format` attribute gives the magnitude and precision of the data value. The standard POSIX string formats are used.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Field\_Character

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* FORMAT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**field\_format in Field\_Delimited** The `field_format` attribute gives the magnitude and precision of the data value. The standard POSIX string formats are used.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Field\_Delimited

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* FORMAT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**field\_length in Field\_Binary** The field\_length attribute provides the number of bytes in the field.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Field\_Binary

*Minimum Value:* 1

*Nilable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**field\_length in Field\_Character** The field\_length attribute provides the number of bytes in the field.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Field\_Character

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**field\_location in Field\_Binary** The field\_location attribute provides the starting byte for a field within a record or group, counting from '1'.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Field\_Binary

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* LOCATION

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**field\_location in Field\_Character** The field\_location attribute provides the starting byte for a field within a record or group, counting from '1'.

*Type:* ASCII.Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Field\_Character

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* LOCATION

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**field\_number in Field** The field\_number attribute provides the position of a field, within a series of fields, counting from 1. If two fields within a record are physically separated by one or more groups, they have consecutive field numbers; the fields within the intervening group(s) are numbered separately. Fields within a group separated by one or more (sub)groups, will also have consecutive field numbers.

*Type:* ASCII.Integer

*Class Name:* Field

*Minimum Value:* 1



*Nillable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**fields in Group** The fields attribute provides a count of the total number of scalar fields directly associated with a group. Fields within (sub) groups of the group are not included in this count.

*Type:* ASCII\_Integer

*Class Name:* Group

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**fields in Record** The fields attribute provides a count of the total number of scalar fields directly associated with a table record. Fields within groups within the record are not included in this count.

*Type:* ASCII\_Integer

*Class Name:* Record

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**file in Product\_Zipped** The file association is a relationship to File.

*Type:* Association

**file\_area in Product\_File\_Repository** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_Proxy\_PDS3** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_Service** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_Browse** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_Bundle** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_File\_Text** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_Observational** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_SPICE\_Kernel** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_Thumbnail** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area in Product\_XML\_Schema** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area\_inventory in Product\_Collection** The file\_area association is a relationship to File Area

*Type:* Association

**file\_area\_supplemental in Product\_Observational** The file\_area\_supplemental association is a relationship to File Area Supplemental.

*Type:* Association

**file\_name in File** The file\_name attribute provides the name of a file.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* File

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**file\_size in File** The file\_size attribute provides the size of the file.

*Type:* ASCII.NonNegative.Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* File

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* SIZE

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**files in Software\_Binary** The files attribute provides the number of files.

*Type:* ASCII.Integer

*Class Name:* Software\_Binary

*Minimum Value:* 1

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* ops

*Namespace Id:* pds

**files in Software\_Script** The files attribute provides the number of files.

*Type:* ASCII\_Integer

*Class Name:* Software\_Script

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* ops

*Namespace Id:* pds

**files in Software\_Source** The files attribute provides the number of files.

*Type:* ASCII\_Integer

*Class Name:* Software\_Source

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* ops

*Namespace Id:* pds

**filter\_number in Band\_Bin** The filter\_number attribute of a spectral cube describes the physical location of a band (identified by the band\_number) in a detector array. Filter 1 is on the leading edge of the array.

*Type:* ASCII\_Integer

*Class Name:* Band\_Bin

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* INTEGER

*Steward:* img

*Namespace Id:* pds

**first\_sampling\_parameter\_value in Uniformly\_Sampled** The first\_sampling\_parameter\_value element provides the first value in an ascending series and is therefore the minimum value at which a given data item was sampled.

*Type:* ASCII\_Real

*Class Name:* Uniformly\_Sampled

*Nullable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**format\_type in Document\_Format** The format\_type attribute indicates the digital format used.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Document.Format

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* multiple file, single file

**formation\_rule in DD\_Value\_Domain** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Text.Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**formation\_rule in DD\_Value\_Domain\_Full** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Text\_Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**formation\_rule in ASCII.DOI** The formation\_rule attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short\_String\_Collapsed

*Class Name:* ASCII.DOI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* nn.nnnn/nnn

**formation\_rule in ASCII.Date** The formation\_rule attribute provides a 'user friendly' instruction for forming values.



*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* YYYY-MM-DD/YYYY-DOY

**formation\_rule in ASCII.Date.DOY** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* YYYY-DOY

**formation\_rule in ASCII\_Date\_Time** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* YYYY-MM-DDTHH:MM:SS.SSS(Z)/YYYY-DOYTHH:MM:SS.SSS(Z)

**formation\_rule in ASCII\_Date\_Time\_DOY** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* YYYY-DOYTHH:MM:SS.SSS(Z)

**formation\_rule in ASCII\_Date\_Time\_UTC** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.UTC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:*  
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

**formation\_rule in ASCII\_Date\_Time\_YMD** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* YYYY-MM-DDTHH:MM:SS.SSS(Z)

**formation\_rule in ASCII\_Date\_YMD** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* YYYY-MM-DD

**formation\_rule in ASCII\_Directory\_Path\_Name** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Directory\_Path\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Niltable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* dir1/dir2/

**formation\_rule in ASCII\_File\_Name** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_File\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Niltable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* file\_name.file\_extension

**formation\_rule in ASCII\_File\_Specification\_Name** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_File\_Specification\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* dir1/dir2/file\_name.file\_extension

**formation\_rule in ASCII\_LID** The formation\_rule attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* urn:nasa:pds:xxxx

**formation\_rule in ASCII\_LIDVID** The formation\_rule attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_LIDVID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* urn:nasa:pds:xxxx::M.n

**formation\_rule in ASCII\_LIDVID\_LID** The formation\_rule attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_LIDVID\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* urn:nasa:pds:xxxx, urn:nasa:pds:xxxx::M.n

**formation\_rule in ASCII\_MD5\_Checksum** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_MD5\_Checksum

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 0123456789abcdef

**formation\_rule in ASCII\_Time** The `formation_rule` attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2



*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* HH:MM:SS.SSS

**formation\_rule in ASCII\_VID** The formation\_rule attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_VID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* M.m

**formation\_rule in Character\_Data\_Type** The formation\_rule attribute provides a 'user friendly' instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**full\_name in Ingest\_LDD** The full\_name attribute provides the complete name for a person and includes titles and suffixes.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Ingest\_LDD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**full\_name in Subscriber\_PDS3** The full\_name attribute provides the complete name for a person and includes titles and suffixes.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Subscriber\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**full\_name in Update\_Entry** The full\_name attribute provides the complete name for a person and includes titles and suffixes.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Update\_Entry

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**grating\_position in Band\_Bin** The grating\_position attribute of a spectral qube describes the grating position which corresponds to the band. Grating positions are usually assigned consecutively from 0, and increasing position causes increasing wavelength for each detector.

*Type:* ASCII\_Integer

*Class Name:* Band\_Bin

*Minimum Value:* 0

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* INTEGER

*Steward:* img

*Namespace Id:* pds

**group\_length in Group\_Field\_Binary** The group\_length attribute provides the total length, in bytes, of a repeating field and/or group structure. It is the number of bytes in the repeating fields/groups plus any embedded unused bytes that are also repeated multiplied by the number of repetitions.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Group\_Field\_Binary

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**group\_length in Group\_Field\_Character** The group\_length attribute provides the total length, in bytes, of a repeating field and/or group structure. It is the number of bytes in the repeating fields/groups plus any embedded unused bytes that are also repeated multiplied by the number of repetitions.

*Type:* ASCII.Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Group\_Field\_Character

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**group\_location in Group\_Field\_Binary** The `group_location` attribute provides the starting position for a `Group_Field_Binary` within the containing `Record_Binary` or `Group_Field_Binary` class, in bytes. Location "1" denotes the first byte of the containing class.

*Type:* ASCII.Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Group\_Field\_Binary

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* LOCATION

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**group\_location in Group\_Field\_Character** The `group_location` attribute provides the starting position for a `Group_Field_Character` within the containing `Record_Character` or `Group_Field_Character` class, in bytes. Location "1" denotes the first byte of the containing class.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Group\_Field\_Character

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* LOCATION

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**group\_number in Group** The `group_number` attribute provides the position of a group, within a series of groups, counting from 1. If two groups within a record are physically separated by one or more fields, they have consecutive group numbers; the intervening fields are numbered separately. Groups within a parent group, but separated by one or more fields, will also have consecutive group numbers.

*Type:* ASCII.Integer

*Class Name:* Group

*Nilable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**groups in Group** The groups attribute provides a count of the number of (sub)groups within the repeating structure of a group. (Subsub)groups within (sub)groups within the group are not included in this count.

*Type:* ASCII.Integer

*Class Name:* Group

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**groups in Record** The groups attribute provides a count of the total number of groups directly associated with a table record. Groups within groups within the record are not included in this count.

*Type:* ASCII.Integer

*Class Name:* Record

*Minimum Value:* 0

*Nullable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**has\_Axis\_Array in Array** The has\_Axis\_Array association is a relationship to Axis\_Array.

*Type:* Association

**has\_Axis\_Array in Array\_2D** The has\_Axis\_Array association is a relationship to Axis\_Array.

*Type:* Association

**has\_Axis\_Array in Array\_3D** The has\_Axis\_Array association is a relationship to Axis\_Array.

*Type:* Association

**has\_Band\_Bin\_Set in Axis\_Array** The has\_Band\_Bin\_Set association is a relationship to Band\_Bin\_Set.

*Type:* Association

**has\_Character\_Field in Record\_Character** The has\_Character\_Field association is a relationship to the field types.

*Type:* Association

**has\_Checksum\_Manifest in Information\_Package\_Component**  
The has\_Checksum\_Manifest association is a relationship to Checksum\_Manifest.

*Type:* Association



**has\_Delimited\_Field\_in\_Record\_Delimited** The `has_Delimited_Field` association is a relationship to `field`.

*Type:* Association

**has\_Delimited\_Field\_Grouped\_in\_Group\_Field\_Delimited** The `has_Delimited_Field_Grouped` association is a relationship to the field types for a group.

*Type:* Association

**has\_Display\_2d\_Image\_in\_Array\_2D\_Image** The `display_2d_image` association is a relationship to `display_2d_image`.

*Type:* Association

**has\_Display\_2d\_Image\_in\_Array\_2D\_Map** The `has_Display_2d_Image` association is a relationship to `Display_2d_Image`.

*Type:* Association

**has\_Display\_2d\_Image\_in\_Array\_2D\_Spectrum** The `has_Display_2d_Image` association is a relationship to `Display_2d_Image`.

*Type:* Association

**has\_Element\_Array\_in\_Array** The `has_Element_Array` association is a relationship to `Element_Array`

*Type:* Association

**has\_Field\_Bit\_in\_Packed\_Data\_Fields** The `has_Field_Bit` association is a relationship to `Field_Bits`.

*Type:* Association

**has\_File\_in\_File\_Area\_Binary** The `has_File` association is a relationship to `File`.

*Type:* Association

**has\_File\_in\_File\_Area\_Checksum\_Manifest** The `has_File` association is a relationship to `File`.

*Type:* Association

**has\_File in File\_Area\_Service\_Description** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_Transfer\_Manifest** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_Browse** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_Encoded\_Image** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_Inventory** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_Observational** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_Observational\_Supplemental** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_SPICE\_Kernel** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_Text** The has\_File association is a relationship to File.

*Type:* Association

**has\_File in File\_Area\_XML\_Schema** The has\_File association is a relationship to File.

*Type:* Association

**has\_Group\_Field\_Binary in Group\_Field\_Binary** The has\_Group\_Field\_Binary association is a relationship to the Group\_Field\_Binary.

*Type:* Association

**has\_Group\_Field\_Character in Group\_Field\_Character** The has\_Group\_Field\_Character association is a relationship to the Group\_Field\_Character.

*Type:* Association

**has\_Information\_Package\_Component in Product\_AIP** The has\_Information\_Package\_Component association is a relationship to a Information\_Package\_Component.

*Type:* Association

**has\_Information\_Package\_Component in Product\_DIP** The has\_Information\_Package\_Component association is a relationship to a Information\_Package\_Component.

*Type:* Association

**has\_Information\_Package\_Component in Product\_DIP\_Deep\_Archive** The has\_Information\_Package\_Component association is a relationship to a Information\_Package\_Component.

*Type:* Association

**has\_Information\_Package\_Component in Product\_SIP** The has\_Information\_Package\_Component association is a relationship to a Information\_Package\_Component.

*Type:* Association

**has\_Packed\_Data\_Fields in Field\_Binary** The has\_Packed\_Data\_Fields association is a relationship to Packed\_Data\_Fields.

*Type:* Association

**has\_Record in Table\_Binary** The has\_Record association is a relationship to record.

*Type:* Association

**has\_Record in Table\_Character** The has\_Record association is a relationship to record.

*Type:* Association

**has\_Table\_Field in Record\_Binary** The has\_Table\_Field association is a relationship to the field types.

*Type:* Association

**has\_Transfer\_Manifest in Information\_Package\_Component**

The has\_Transfer\_Manifest association is a relationship to Transfer\_Manifest.

*Type:* Association

**has\_band\_bin in Band\_Bin\_Set** The has\_band\_bin association is a relationship to band bin.

*Type:* Association

**has\_delimited\_record in Table\_Delimited** The has\_delimited\_record association is a relationship to record.

*Type:* Association

**has\_discipline\_area in Context\_Area** The has\_discipline\_area association is a relationship to Discipline Area.

*Type:* Association

**has\_discipline\_area in Product\_Context** The has\_discipline\_area association is a relationship to Discipline Area.

*Type:* Association

**has\_identification\_area in Product** The has\_identification\_area association is a relationship to Identification Area.

*Type:* Association

**has\_investigation\_area in Context\_Area** The has\_investigation\_area association is a relationship to Investigation\_Area.

*Type:* Association

**has\_investigation\_area in Observation\_Area** The has\_investigation\_area association is a relationship to Investigation\_Area.

*Type:* Association

**has\_mission\_area in Context\_Area** The has\_mission\_area association is a relationship to Mission Area.

*Type:* Association

**has\_observing\_system in Context\_Area** The has\_observing\_system association is a relationship to Observing\_System.

*Type:* Association

**has\_observing\_system in Observation\_Area** The has\_observing\_system association is a relationship to Observing\_System.

*Type:* Association

**has\_primary\_result\_description in Context\_Area** The has\_primary\_result\_description association is a relationship to Primary\_Result\_Description.

*Type:* Association

**has\_primary\_result\_description in Observation\_Area** The has\_primary\_result\_description association is a relationship to Primary\_Result\_Description.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Binary** The has\_tagged\_data\_object association is a relationship to any tagged\_digital\_object or tagged\_nondigital\_object.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Checksum\_Manifest** The `has_tagged_data_object` association is a relationship to any `tagged_digital_object` or `tagged_nondigital_object`.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Service\_Description** The `has_tagged_data_object` association is a relationship to any `tagged_digital_object` or `tagged_nondigital_object`.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Transfer\_Manifest** The `has_tagged_data_object` association is a relationship to any `tagged_digital_object` or `tagged_nondigital_object`.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Browse** The `has_tagged_data_object` association is a relationship to any `tagged_digital_object` or `tagged_nondigital_object`.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Encoded\_Image** The `has_tagged_data_object` association is a relationship to any `tagged_digital_object` or `tagged_nondigital_object`.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Inventory** The `has_tagged_data_object` association is a relationship to any `tagged_digital_object` or `tagged_nondigital_object`.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Observational** The `has_tagged_data_object` association is a relationship to any `tagged_digital_object` or `tagged_nondigital_object`.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Observational\_Supplemental**

The has\_tagged\_data\_object association is a relationship to any tagged\_digital\_object or tagged\_nondigital\_object.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_SPICE\_Kernel**

The has\_tagged\_data\_object association is a relationship to any tagged\_digital\_object or tagged\_nondigital\_object.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_Text**

The has\_tagged\_data\_object association is a relationship to any tagged\_digital\_object or tagged\_nondigital\_object.

*Type:* Association

**has\_tagged\_data\_object in File\_Area\_XML\_Schema**

The has\_tagged\_data\_object association is a relationship to any tagged\_digital\_object or tagged\_nondigital\_object.

*Type:* Association

**has\_target\_identification in Context\_Area**

The has\_target\_identification association is a relationship to Target\_Identification.

*Type:* Association

**has\_target\_identification in Observation\_Area**

The has\_target\_identification association is a relationship to Target\_Identification.

*Type:* Association

**has\_time\_coordinates in Context\_Area**

The has\_time\_coordinates association is a relationship to Time\_Coordinates.

*Type:* Association

**has\_time\_coordinates in Observation\_Area**

The has\_time\_coordinates association is a relationship to Time\_Coordinates.

*Type:* Association

**has\_zip in Product\_Zipped** The has\_ZIP association is a relationship to ZIP

*Type:* Association

**high\_instrument\_saturation in Special\_Constants** The high\_instrument\_saturation attribute specifies a special value whose presence indicates the measuring instrument was saturated at the high end. The value must be less than the value of the valid\_minimum attribute or more than the value of the valid\_maximum attribute. Values of this attribute should be represented in the same data\_type as the elements in the object with which the Special\_Constants class is associated.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* -32765, 255, 3, 65534, FF7FFFFE, FFFCFFFF

**high\_representation\_saturation in Special\_Constants** The high\_representative\_saturation attribute specifies a special value whose presence indicates the true value cannot be represented in the chosen data type and length – in this case being above the allowable range – which may happen during conversion from another data type. The value must be less than the value of the valid\_minimum attribute or more than the value of the valid\_maximum attribute. Values of this attribute should be represented in the same data\_type as the elements in the object with which the Special\_Constants class is associated.



*Type:* ASCII.Short.String.Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* -32764, 255, 4, 65535, FF7FFFFFFF, FFFBFFFF

**information\_model\_version in Identification\_Area** The information\_model\_version attribute provides the version identification of the PDS Information Model on which the label and schema are based.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Identification\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1.0.0.0

**install\_note in Software\_Script** The install note attribute provides a brief statement giving particulars about the installation of the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Script

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**institution\_name in Node** The institution\_name attribute provides the name of the associated institution.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Node

*Minimum Characters:* 1

*Maximum Characters:* 255

*Pattern:* [a-zA-Z]{1}([-/, ..a-zA-Z0-9]\*)

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**institution\_name in PDS\_Affiliate** The institution\_name attribute provides the name of the associated institution.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Pattern:* [a-zA-Z]{1}([-/, ..a-zA-Z0-9]\*)

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**instrument\_desc in Instrument\_PDS3** The instrument\_desc attribute describes a given instrument.

*Type:* ASCII.Text.Preserved

*Class Name:* Instrument\_PDS3

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**instrument\_host\_desc in Instrument\_Host\_PDS3** The instrument\_host\_desc provides a description of an instrument host

*Type:* ASCII.Text.Preserved

*Class Name:* Instrument\_Host\_PDS3

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**instrument\_host\_id in Instrument\_Host\_PDS3** The instrument\_host\_id attribute provides a unique identifier for the host on which an instrument is located. This host can be either a spacecraft or an earth base (e.g. earth).

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument\_Host\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**instrument\_host\_name in Instrument\_Host\_PDS3** The `instrument_host_name` attribute provides the full name of the platform or facility upon which an instrument or other device is mounted. For example, the host can be a spacecraft, a ground-based telescope, or a laboratory.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument\_Host\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**instrument\_host\_type in Instrument\_Host\_PDS3** The `instrument_host_type` attribute provides the type of host on which an instrument is based. For example instrument is located on a spacecraft `instrument_host_type` attribute would have the value SPACECRAFT.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument\_Host\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**instrument\_id in Instrument\_PDS3** The instrument id provides a formal name used to refer to an instrument.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**instrument\_name in Instrument\_PDS3** The instrument\_name attribute provides a unique name for an instrument.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**instrument\_serial\_number in Instrument\_PDS3** The instrument serial number element provides the manufacturer's serial number assigned to an instrument. This number may be used to uniquely identify a particular instrument for tracing its components or determining its calibration history, for example.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**instrument\_type in Instrument\_PDS3** The instrument\_type attribute identifies the type of an instrument. Example values: POLARIMETER SPECTROMETER

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**instrument\_version\_id in Instrument\_PDS3** The `Instrument_Version_Id` element identifies the specific model of an instrument used to obtain data. For example, this keyword could be used to distinguish between an engineering model of a camera used to acquire test data, and a flight model of a camera used to acquire science data during a mission.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**internal\_reference in DD\_Attribute** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association



**internal\_reference in DD\_Class** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association

**internal\_reference in Information\_Package\_Component** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association

**internal\_reference in Product\_Zipped** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association

**internal\_reference in Investigation\_Area** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association

**internal\_reference in Observing\_System\_Component** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association

**internal\_reference in Reference\_List** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association

**internal\_reference in Target\_Identification** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association

**internal\_reference in Update\_Entry** The `internal_reference` association is a relationship to `Internal_Reference`.

*Type:* Association

**invalid\_constant in Special\_Constants** The `invalid_constant` attribute provides a value that indicates the original value was outside the valid range for the parameter.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* CONSTANT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**kernel\_type in SPICE\_Kernel** The kernel\_type attribute identifies the type of SPICE kernel.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* SPICE\_Kernel

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* CK, DBK, DSK, EK, FK, IK, LSK, MK, PCK, SCLK, SPK

**keyword in Citation\_Information** The keyword attribute provides one or more words to be used for keyword search.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Citation\_Information

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**language in Terminological\_Entry** The language attribute provides the language used for definition and designation of the term.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Terminological\_Entry

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* English, Russian

**last\_modification\_date\_time in Ingest\_LDD** The

last\_modification\_date\_time attribute gives the most recent date and time that a change was made.

*Type:* ASCII\_Date\_Time\_YMD

*Class Name:* Ingest\_LDD

*Format:* YYYY-MM-DDTHH:MM:SS.SSS(Z)

*Nilable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* ops

*Namespace Id:* pds

**last\_sampling\_parameter\_value in Uniformly\_Sampled** The

last\_sampling\_parameter\_value element provides the last value in an ascending series and is therefore the maximum value at which a given data item was sampled.

*Type:* ASCII\_Real

*Class Name:* Uniformly\_Sampled

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**ldd\_version\_id in Ingest\_LDD** The ldd\_version\_id attribute provides the version of the Local Data Dictionary.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Ingest\_LDD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Pattern:* ([0-9]+)()\{1}([0-9]+)

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**lid\_reference in Bundle\_Member\_Entry** The `lid_reference` attribute provides the logical identifier for a product.

*Type:* ASCII.LID

*Class Name:* Bundle\_Member\_Entry

*Minimum Characters:* 14

*Maximum Characters:* 255

*Format:* urn:nasa:pds:xxxx

*Nilable:* false

*Attribute Concept:* REFERENCE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**lid\_reference in Internal\_Reference** The lid\_reference attribute provides the logical\_identifier for a product.

*Type:* ASCII.LID

*Class Name:* Internal\_Reference

*Minimum Characters:* 14

*Maximum Characters:* 255

*Format:* urn:nasa:pds:xxxx

*Nilable:* false

*Attribute Concept:* REFERENCE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Schematron Rule:* The number of colons found in lid\_reference is validated.

*Schematron Rule:* The value of the attribute lid\_reference must start with 'urn:nasa:pds:'

**lidvid\_reference in Bundle\_Member\_Entry** The lidvid\_reference attribute provides the logical\_identifier plus version\_id, which uniquely identifies a product.

*Type:* ASCII.LIDVID

*Class Name:* Bundle\_Member\_Entry

*Minimum Characters:* 19

*Maximum Characters:* 255

*Format:* urn:nasa:pds:xxxx::M.n

*Niltable:* false

*Attribute Concept:* REFERENCE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**lidvid\_reference in Internal\_Reference** The lidvid\_reference attribute provides the logical\_identifier plus version\_id, which uniquely identifies a product.

*Type:* ASCII\_LIDVID

*Class Name:* Internal\_Reference

*Minimum Characters:* 19

*Maximum Characters:* 255

*Format:* urn:nasa:pds:xxxx::M.n

*Niltable:* false

*Attribute Concept:* REFERENCE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Schematron Rule:* The number of colons found in lidvid\_reference is validated.

*Schematron Rule:* The value of the attribute lidvid\_reference must start with 'urn:nasa:pds:'

*Schematron Rule:* The value of the attribute `lidvid_reference` must include a value that contains ':' followed by version id

**line\_display\_direction in Display\_2D\_Image** The

`line_display_direction` element is the preferred orientation of lines within an image for viewing on a display device. Note that if this keyword is present in a label, the `sample_display_direction` keyword must also be present and must contain a value orthogonal to the value selected for this keyword.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Display\_2D\_Image

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* DIRECTION

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Down, Up

**local\_attribute in Ingest\_LDD** The `local_attribute` association is a relationship to `Local_Attribute`.

*Type:* Association

**local\_class in Ingest\_LDD** The `local_class` association is a relationship to `Local_Class`.

*Type:* Association

**local\_identifier in DD\_Association** The `local_identifier` attribute provides a character string which uniquely identifies the containing object within the label.



*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Association

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**local\_identifier in DD\_Attribute** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Attribute

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**local\_identifier in DD\_Attribute\_Full** The `local_identifier` attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**local\_identifier in DD\_Class** The `local_identifier` attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**local\_identifier in DD\_Class\_Full** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**local\_identifier in Subscriber\_PDS3** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Subscriber\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**local\_identifier in Byte\_Stream** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Byte\_Stream

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_identifier in Field\_Statistics** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Field\_Statistics

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_identifier in File** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* File

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_identifier in Geometry** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Geometry

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_identifier in Object\_Statistics** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Object\_Statistics

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_identifier in Quaternion** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Quaternion

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_identifier in Update** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Update

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_identifier in Vector** The local\_identifier attribute provides a character string which uniquely identifies the containing object within the label.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Vector

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* LOCAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_mean\_solar\_time in Time\_Coordinates** The local\_mean\_solar\_time attribute provides the hour angle of the fictitious mean Sun at a fixed point on a rotating solar system body.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Time\_Coordinates

*Minimum Characters:* 8

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**local\_true\_solar\_time in Time\_Coordinates** The local\_true\_solar\_time (LTST) attribute provides the local time on a rotating solar system body where LTST is 12 h at the sub-solar point (SSP) and increases 1 h for each 15 degree increase in east longitude away from the SSP for prograde rotation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Time\_Coordinates



*Minimum Characters:* 8

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**logical\_identifier in Identification\_Area** A logical identifier identifies the set of all versions of an object. It is an object identifier without a version.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Identification\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* LOGICAL\_IDENTIFIER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Schematron Rule:* In the number of colons found in logical\_identifier is validated.

*Schematron Rule:* The value of the attribute logical\_identifier must start with 'urn:nasa:pds:'

*Schematron Rule:* The value of the attribute `logical_identifier` must not include a value that contains ':'

*Schematron Rule:* In `Product_Bundle` the number of colons in `logical_identifier` is validated.

*Schematron Rule:* In `Product_Collection`, the number of colons found in `logical identifier` is validated.

#### **low\_instrument\_saturation in Special\_Constants** The

`low_instrument_saturation` attribute specifies a special value whose presence indicates the measuring instrument was saturated at the low end. The value must be less than the value of the `valid_minimum` attribute. Values of this attribute should be represented in the same `data_type` as the elements in the object with which the `Special_Constants` class is associated.

*Type:* `ASCII_Short_String_Collapsed`

*Class Name:* `Special_Constants`

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* -32766, 0, 2, FF7FFFFD, FFFDFFFF

#### **low\_representation\_saturation in Special\_Constants** The

`low_representative_saturation` attribute specifies a special value whose presence indicates the true value cannot be represented in the chosen data type and length – in this case being below the allowable range – which may happen during conversion from another data type. The value must be less than the value of the `valid_minimum` attribute. Values of this attribute should be represented in the same `data_type` as the elements in the object with which the `Special_Constants` class is associated.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* -32767, 1, 16#FF7FFFC#, 16#FFFEFFFF#

**maximum in Field\_Statistics** The maximum attribute provides the largest stored value which appears in the field over all records (empty fields and Special\_Constants values are excluded).

*Type:* ASCII.Real

*Class Name:* Field\_Statistics

*Nilable:* false

*Attribute Concept:* MAXIMUM

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**maximum in Object\_Statistics** The maximum attribute provides the largest value which appears in the stored array after application of any bit mask (Special\_Constants values are excluded).

*Type:* ASCII\_Real

*Class Name:* Object\_Statistics

*Nilable:* false

*Attribute Concept:* MAXIMUM

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in DD\_Value\_Domain** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**maximum\_characters in DD\_Value\_Domain\_Full** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**maximum\_characters in ASCII\_AnyURI** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_AnyURI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_DOI** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.DOI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII.Date** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Date\_DOY** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Date\_Time** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Date\_Time\_DOY** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Date\_Time\_UTC** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.UTC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING



*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Date\_Time\_YMD** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT.STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Date\_YMD** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Directory\_Path\_Name** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Directory\_Path\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_File\_Name** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_File\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_File\_Specification\_Name** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_File\_Specification\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_Integer** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_LID** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_LIDVID** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_LIDVID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_LIDVID\_LID** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_LIDVID\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_MD5\_Checksum** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_MD5\_Checksum

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 32

**maximum\_characters in ASCII\_NonNegative\_Integer** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_NonNegative\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Numeric\_Base16** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Numeric\_Base16

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_Numeric\_Base2** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Numeric\_Base2

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_Numeric\_Base8** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Numeric\_Base8

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255



**maximum\_characters in ASCII\_Real** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Real

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Short\_String\_Collapsed** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_Short\_String\_Preserved** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in ASCII\_Text\_Collapsed** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Text\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Text\_Preserved** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Text\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_Time** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in ASCII\_VID** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_VID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 100

**maximum\_characters in Character\_Data\_Type** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_characters in UTF8.Short.String.Collapsed** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8.Short.String.Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in UTF8.Short.String.Preserved** The `maximum_characters` attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8.Short.String.Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 255

**maximum\_characters in UTF8.Text.Preserved** The maximum\_characters attribute provides the upper, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8.Text.Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_field\_length in Field\_Delimited** The maximum\_field\_length attribute sets an upper, inclusive bound on the number of bytes in the field.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Field\_Delimited

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**maximum\_occurrences in DD\_Association** The maximum\_occurrences attribute indicates the number of times something may occur. It is also called the maximum cardinality. The asterisk character is used as a value to indicate that no upper bound exists.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Association

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**maximum\_occurrences in DD\_Association\_External** The maximum occurrences attribute indicates the number of times something may occur. It is also called the maximum cardinality. The asterisk character is used as a value to indicate that no upper bound exists.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Association\_External

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**maximum\_record\_length in Record\_Delimited** The maximum\_record\_length attribute provides the maximum length of a record, including the record delimiter.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Record\_Delimited



*Minimum Value:* 1

*Nilable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**maximum\_scaled\_value in Object\_Statistics** The maximum\_scaled\_value attribute provides the maximum value after application of scaling\_value and value\_offset (see their definitions; maximum\_scaled\_value is the maximum of Ov).

*Type:* ASCII\_Real

*Class Name:* Object\_Statistics

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in DD\_Value\_Domain** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**maximum\_value in DD\_Value\_Domain\_Full** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**maximum\_value in ASCII\_Date\_Time** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Date\_Time\_DOY** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time\_DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Date\_Time\_UTC** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time\_UTC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Date\_Time\_YMD** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time\_YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Integer** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_LID** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_NonNegative\_Integer** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_NonNegative\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Numeric\_Base16** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base16

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Numeric\_Base2** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base2

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Real** The `maximum_value` attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Real

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Short\_String\_Collapsed** The `maximum_value` attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII.Short.String.Preserved** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Short.String.Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII.Text.Preserved** The maximum\_value attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Text.Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255



*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_Time** The `maximum_value` attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in ASCII\_VID** The `maximum_value` attribute provides the upper, inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_VID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in Character\_Data\_Type** The `maximum_value` attribute provides the upper, inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in UTF8\_Short\_String\_Collapsed** The `maximum_value` attribute provides the upper, inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in UTF8\_Short\_String\_Preserved** The `maximum_value` attribute provides the upper, inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Short\_String\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**maximum\_value in UTF8\_Text\_Preserved** The `maximum_value` attribute provides the upper, inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Text\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Niltable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**md5\_checksum in File** The md5\_checksum attribute is the 32-character hexadecimal number computed for a file using the MD5 algorithm.

*Type:* ASCII\_MD5\_Checksum

*Class Name:* File

*Minimum Characters:* 32

*Maximum Characters:* 32

*Format:* 0123456789abcdef

*Pattern:* ([a-f0-9]{32})

*Niltable:* false

*Attribute Concept:* CHECKSUM

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**md5\_checksum in Object\_Statistics** The md5\_checksum attribute is the 32-character hexadecimal number computed for a file using the MD5 algorithm.

*Type:* ASCII\_MD5\_Checksum

*Class Name:* Object\_Statistics

*Minimum Characters:* 32

*Maximum Characters:* 32

*Format:* 0123456789abcdef

*Pattern:* ([a-f0-9]{32})

*Nillable:* false

*Attribute Concept:* CHECKSUM

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**mean in Field\_Statistics** The mean attribute provides the sum of the stored field values divided by the number of values in all records (empty fields and Special.Constants values are excluded from both the sum and the count).

*Type:* ASCII\_Real

*Class Name:* Field\_Statistics

*Nillable:* false

*Attribute Concept:* MEAN

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**mean in Object\_Statistics** The mean attribute provides the sum of the stored array element values (after application of any bit mask) divided by the number of elements (Special.Constants values are excluded from both the sum and the count).

*Type:* ASCII\_Real

*Class Name:* Object\_Statistics

*Nillable:* false

*Attribute Concept:* MEAN

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**median in Field\_Statistics** The median attribute provides the number separating the larger half of stored field values from the algebraically smaller half over all records (empty fields and Special\_Constants values are excluded from the sort).

*Type:* ASCII\_Real

*Class Name:* Field\_Statistics

*Nillable:* false

*Attribute Concept:* MEDIAN

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**median in Object\_Statistics** The median attribute provides the number separating the larger half of stored array element values from the algebraically smaller half after application of any bit mask (Special\_Constants values are excluded from the sort).

*Type:* ASCII\_Real

*Class Name:* Object\_Statistics

*Nillable:* false

*Attribute Concept:* MEDIAN

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**medium\_type in NSSDC** The `medium_type` attribute identifies the physical storage medium for a data volume. Examples: CD-ROM, CARTRIDGE TAPE.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* NSSDC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**medium\_type in Volume\_PDS3** The `medium_type` attribute identifies the physical storage medium for a data volume. Examples: CD-ROM, CARTRIDGE TAPE.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**member\_entry in Product\_Bundle** The member\_entry association is a relationship to Member\_Entry.

*Type:* Association

**member\_status in Bundle\_Member\_Entry** The member\_status attribute indicates whether the collection is primary and whether the file\_specification\_name has been provided for the product\_collection label.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Bundle\_Member\_Entry

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* STATUS

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Primary, Secondary



**minimum in Field\_Statistics** The minimum attribute provides the algebraically smallest stored value which appears in the field over all records (empty fields and Special\_Constants values are excluded).

*Type:* ASCII\_Real

*Class Name:* Field\_Statistics

*Nullable:* false

*Attribute Concept:* MINIMUM

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**minimum in Object\_Statistics** The minimum attribute provides the algebraically smallest value which appears in the stored array after application of any bit mask (Special\_Constants values are excluded).

*Type:* ASCII\_Real

*Class Name:* Object\_Statistics

*Nullable:* false

*Attribute Concept:* MINIMUM

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in DD\_Value\_Domain** The minimum\_characters attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**minimum\_characters in DD\_Value\_Domain\_Full** The minimum\_characters attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**minimum\_characters in ASCII\_AnyURI** The minimum\_characters attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCIIAnyURI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII.DOI** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.DOI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Date** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Date\_DOY** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Date\_Time** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Date\_Time\_DOY** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Date\_Time\_UTC** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time\_UTC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Date\_Time\_YMD** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_Time\_YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Date\_YMD** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCIIDate\_YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Directory\_Path\_Name** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Directory\_Path\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_File\_Name** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_File\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_File\_Specification\_Name** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_File\_Specification\_Name



*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_Integer** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_LID** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT.STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 14

**minimum\_characters in ASCII.LIDVID** The minimum\_characters attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.LIDVID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT.STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 19

**minimum\_characters in ASCII\_LIDVID\_LID** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_LIDVID\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 14

**minimum\_characters in ASCII\_MD5\_Checksum** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_MD5\_Checksum

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 32

**minimum\_characters in ASCII\_NonNegative\_Integer** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_NonNegative\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Numeric\_Base16** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Numeric\_Base16

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_Numeric\_Base2** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Numeric\_Base2

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_Numeric\_Base8** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Numeric\_Base8

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_Real** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Real

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_Short\_String\_Collapsed** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_Short\_String\_Preserved** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_String** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCIIString

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_Text\_Collapsed** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Text\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255



*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_Text\_Preserved** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Text\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in ASCII\_Time** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in ASCII\_VID** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_VID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 3

**minimum\_characters in Character\_Data\_Type** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_characters in UTF8\_Short\_String\_Collapsed** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in UTF8\_Short\_String\_Preserved** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Short\_String\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in UTF8\_String** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_String

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_characters in UTF8\_Text\_Preserved** The `minimum_characters` attribute provides the lower, inclusive bound on the number of characters.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Text\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 1

**minimum\_occurrences in DD\_Association** The `minimum_occurrences` attribute indicates the number of times something may occur. It is also called the minimum cardinality.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Association

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**minimum\_occurrences in DD\_Association\_External** The minimum occurrences attribute indicates the number of times something may occur. It is also called the minimum cardinality.

*Type:* ASCII.Short\_String\_Collapsed

*Class Name:* DD\_Association\_External

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**minimum\_scaled\_value in Object\_Statistics** The minimum\_scaled\_value attribute provides the minimum value after application of scaling\_value and value\_offset (see their definitions; minimum\_scaled\_value is the minimum of Ov).

*Type:* ASCII\_Real

*Class Name:* Object\_Statistics

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in DD\_Value\_Domain** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**minimum\_value in DD\_Value\_Domain\_Full** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**minimum\_value in ASCII\_Date\_Time** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Date\_Time\_DOY** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.DOY

*Minimum Characters:* 1



*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Date\_Time\_UTC** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.UTC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Date\_Time\_YMD** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Integer** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_LID** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Niltable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_NonNegative\_Integer** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_NonNegative\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Niltable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 0

**minimum\_value in ASCII\_Numeric\_Base16** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Numeric\_Base16

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Numeric\_Base2** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base2

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Real** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Real

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Short\_String\_Collapsed** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Short\_String\_Preserved** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Text\_Preserved** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Text\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_Time** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in ASCII\_VID** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_VID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in Character\_Data\_Type** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in UTF8\_Short\_String\_Collapsed** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in UTF8\_Short\_String\_Preserved** The `minimum_value` attribute provides the lower inclusive bound on the value.



*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8.Short.String.Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**minimum\_value in UTF8\_Text\_Preserved** The `minimum_value` attribute provides the lower inclusive bound on the value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8.Text.Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**missing\_constant in Special\_Constants** The `missing_constant` attribute provides a value that indicates the original value was missing, such as due to a gap in coverage.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* CONSTANT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**mission\_desc in Mission\_PDS3** The mission\_desc attribute summarizes major aspects of a planetary mission or project, including the number and type of spacecraft, the target body or bodies and major accomplishments.

*Type:* ASCII.Text.Preserved

*Class Name:* Mission\_PDS3

*Minimum Characters:* 1

*Nillable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**mission\_name in Mission\_PDS3** The mission\_name attribute identifies a major planetary mission or project. A given planetary mission may be associated with one or more spacecraft.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Mission\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**mission\_objectives\_summary in Mission\_PDS3** The `mission_objectives_summary` attribute describes the major scientific objectives of a planetary mission or project.

*Type:* ASCII.Text.Preserved

*Class Name:* Mission\_PDS3

*Minimum Characters:* 1

*Nullable:* false

*Attribute Concept:* SUMMARY

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**mission\_start\_date in Mission\_PDS3** The `mission_start_date` attribute provides the date of the beginning of a mission in UTC system format.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Mission\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**mission\_stop\_date in Mission\_PDS3** The mission\_stop\_date attribute provides the date of the end of a mission in UTC system format.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Mission\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**model\_id in Instrument** The model\_id attribute helps discriminate instrument hardware. For example "flight", "engineering", or "proto" have been used.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**modification\_date in Modification\_Detail** The modification\_date attribute provides date the modifications were completed

*Type:* ASCII\_Date\_YMD

*Class Name:* Modification\_Detail

*Format:* YYYY-MM-DD

*Nullable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**modification\_detail in Modification\_History** The modification\_detail association is a relationship to Modification\_Detail, the details of one round of modification for the product.

*Type:* Association

**modification\_history in Identification\_Area** The modification\_history association is a relationship to Modification\_History, a history of changes made to the product.

*Type:* Association

**naif\_host\_id in Instrument\_Host** The naif\_instrument\_id element provides the numeric ID used within the SPICE system to identify the spacecraft, spacecraft structure or science instrument.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument\_Host

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**naif\_instrument\_id in Instrument** The naif\_instrument\_id element provides the numeric ID used within the SPICE system to identify the spacecraft, spacecraft structure or science instrument.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in DD\_Association\_External** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Association\_External

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in DD\_Attribute** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Attribute

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in DD\_Attribute\_Full** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in DD\_Class** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false



*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in DD\_Class\_Full** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in External\_Reference\_Extended** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* External\_Reference\_Extended

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in Ingest\_LDD** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Ingest\_LDD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in Node** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Node

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* Engineering, Geosciences, Imaging, Management, Navigation Ancillary Information Facility, Planetary Atmospheres, Planetary Plasma Interactions, Planetary Rings, Planetary Science Archive, Radio Science, Small Bodies

**name in PDS\_Affiliate** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in PDS\_Guest** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* PDS\_Guest

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in Software** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**name in Agency** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Agency

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* European Space Agency, National Aeronautics and Space Administration

**name in Byte\_Stream** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Byte\_Stream

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Facility** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Facility

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Field** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Field

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Field\_Binary** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Field\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Field\_Bit** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Field\_Bit

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Field\_Character** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Field\_Character

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Field\_Delimited** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Field\_Delimited

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Instrument** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument



*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Instrument\_Host** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument\_Host

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Investigation** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Investigation

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Investigation\_Area** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Investigation\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Observing\_System** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Observing\_System

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Observing\_System\_Component** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Observing\_System\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Quaternion** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Quaternion

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Quaternion\_Component** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Quaternion\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Resource** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Resource

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Target** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Target

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Target\_Identification** The name attribute provides a human-readable primary name/identification in the standard format for the target type.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Target\_Identification

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Terminological\_Entry** The name attribute provides a word or combination of words by which the object is known.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Terminological\_Entry

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Vector** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Vector

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**name in Vector\_Component** The name attribute provides a word or combination of words by which the object is known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Vector\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**namespace\_id in DD\_Association\_External** The namespace\_id attribute provides the abbreviation of the XML schema namespace container for this logical grouping of classes and attributes. It is assigned by the steward.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Association\_External

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**namespace\_id in DD\_Attribute\_Full** The namespace\_id attribute provides the abbreviation of the XML schema namespace container for this logical grouping of classes and attributes. It is assigned by the steward.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**namespace\_id in DD\_Class\_Full** The namespace\_id attribute provides the abbreviation of the XML schema namespace container for this logical grouping of classes and attributes. It is assigned by the steward.



*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**namespace\_id in Ingest\_LDD** The namespace\_id attribute provides the abbreviation of the XML schema namespace container for this logical grouping of classes and attributes. It is assigned by the steward.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Ingest\_LDD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**nil\_reason in Symbolic\_Literals\_PDS** The nil\_reason attribute provides the permissible values allowed as reasons when an attribute assigned a nil value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Symbolic.Literals.PDS

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* anticipated, inapplicable, missing, unknown

**nillable\_flag in DD\_Attribute** The nillable\_flag attribute indicates whether an attribute is allowed to take on nil as a value.

*Type:* ASCII.Boolean

*Class Name:* DD\_Attribute

*Nillable:* false

*Attribute Concept:* FLAG

*Conceptual Domain:* BOOLEAN

*Steward:* ops

*Namespace Id:* pds

**nillable\_flag in DD\_Attribute\_Full** The `nillable_flag` attribute indicates whether an attribute is allowed to take on nil as a value.

*Type:* ASCII\_Boolean

*Class Name:* DD\_Attribute\_Full

*Nillable:* false

*Attribute Concept:* FLAG

*Conceptual Domain:* BOOLEAN

*Steward:* ops

*Namespace Id:* pds

**not\_applicable\_constant in Special\_Constants** The `not_applicable_constant` attribute provides a value that indicates the parameter is not applicable.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* CONSTANT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**nssdc in Data\_Set\_PDS3** The `nssdc` association is a relationship to NSSDC.

*Type:* Association

**nssdc\_collection\_id in NSSDC** An NSSDC Collection ID is an NSSDC assigned identifier for a collection of PDS datasets.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* NSSDC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**object\_length in Encoded\_Byte\_Stream** The object\_length attribute provides the length of the digital object in bytes.

*Type:* ASCII.Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Encoded\_Byte\_Stream

*Minimum Value:* 1

*Nilable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**object\_length in Header** The object\_length attribute provides the length of the digital object in bytes.

*Type:* ASCII.Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Header

*Minimum Value:* 1

*Nilable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**object\_length in Parsable\_Byte\_Stream** The object\_length attribute provides the length of the digital object in bytes.

*Type:* ASCII.Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Parsable\_Byte\_Stream

*Minimum Value:* 1

*Nilable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**observation\_area in Product\_Observational** The observation\_area association is a relationship to Observation\_Area.

*Type:* Association

**observing\_system\_component in Observing\_System** The observing\_system\_component association is a relationship to Observing\_System\_Component.

*Type:* Association

**offset in Array** The offset attribute provides the displacement of the object starting position from the beginning of the parent structure (file, record, etc.). If there is no displacement, offset=0.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Array

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**offset in Encoded\_Byte\_Stream** The offset attribute provides the displacement of the object starting position from the beginning of the parent structure (file, record, etc.). If there is no displacement, offset=0.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Encoded\_Byte\_Stream

*Minimum Value:* 0

*Nullable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**offset in Parsable\_Byte\_Stream** The offset attribute provides the displacement of the object starting position from the beginning of the parent structure (file, record, etc.). If there is no displacement, offset=0.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Parsable\_Byte\_Stream

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**offset in Table\_Base** The offset attribute provides the displacement of the object starting position from the beginning of the parent structure (file, record, etc.). If there is no displacement, offset=0.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Table\_Base

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* INTEGER



*Steward:* pds

*Namespace Id:* pds

**orbit\_direction in Target\_PDS3** The orbit\_direction element provides the direction of movement along the orbit about the primary as seen from the north pole of the 'invariable plane of the solar system', which is the plane passing through the center of mass of the solar system and perpendicular to the angular momentum vector of the solar system orbit motion. PROGRADE for positive rotation according to the right-hand rule, RETROGRADE for negative rotation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Target\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* DIRECTION

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**original\_band in Band\_Bin** The original\_band attribute of a spectral qube provides the sequence of band numbers in the qube relative to some original qube. In the original qube, the values are just consecutive integers beginning with 1. In a qube which contains a subset of the bands in the original qube, the values are the original sequence numbers from that qube.

*Type:* ASCII\_Integer

*Class Name:* Band\_Bin

*Minimum Value:* 1

*Maximum Value:* 512

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* INTEGER

*Steward:* img

*Namespace Id:* pds

**os\_version in Software\_Binary** The OS version attribute indicates the version of an operating system.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**os\_version in Software\_Source** The OS version attribute indicates the version of an operating system.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**packet\_map\_mask in Telemetry\_Parameters** The `packet_map_mask` attribute is a binary or hexadecimal number identifying which of a data file's expected packets were actually received. The digits correspond positionally with the relative packet numbers of the data file. The bits are to be read left to right; i.e., the first (left-most) digit of the number corresponds to the first packet of the data file. A bit value of 1 indicates that the packet was received; a value of 0 indicates that it was not received.

*Type:* ASCII\_Numeric\_Base16

*Class Name:* Telemetry\_Parameters

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* MASK

*Conceptual Domain:* NUMERIC

*Steward:* img

*Namespace Id:* img

**parsing\_standard\_id in Checksum\_Manifest** The `parsing_standard_id` attribute provides the formal name of a standard used for the structure of a Parsable Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Checksum\_Manifest

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* MD5Deep 4.n

**parsing\_standard\_id in Service\_Description** The `parsing_standard_id` attribute provides the formal name of a standard used for the structure of a Parsable Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Service\_Description

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* WADL, WSDL 2.n

**parsing\_standard\_id in Header** The `parsing_standard_id` attribute provides the formal name of a standard used for the structure of a Parsable Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Header

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 7-Bit ASCII Text, FITS 3.0, ISIS2, ISIS3, PDS DSV 1, PDS ODL 2, PDS3, Pre-PDS3, UTF-8 Text, VICAR1, VICAR2

**parsing\_standard\_id in Parsable\_Byte\_Stream** The `parsing_standard_id` attribute provides the formal name of a standard used for the structure of a Parsable Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Parsable\_Byte\_Stream

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**parsing\_standard\_id in SPICE\_Kernel** The `parsing_standard_id` attribute provides the formal name of a standard used for the structure of a Parsable Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* SPICE\_Kernel

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* SPICE

**parsing\_standard\_id in Table\_Delimited** The `parsing_standard_id` attribute provides the formal name of a standard used for the structure of a Parsable Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Table\_Delimited

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* PDS DSV 1

**parsing\_standard\_id in XML\_Schema** The `parsing_standard_id` attribute provides the formal name of a standard used for the structure of a Parsable Byte Stream digital object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* XML\_Schema

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

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

**pattern in DD\_Value\_Domain** The `pattern` attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**pattern in DD\_Value\_Domain\_Full** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**pattern in ASCII\_DOI** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_DOI



*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 10§+ /§+

**pattern in ASCII\_Date** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* (-)?[0-9]{4}, (-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6]))))), (-)?[0-9]{4}-((0[1-9])—(1[0-2])), (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))

**pattern in ASCII\_Date\_DOY** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* (-)?[0-9]{4}, (-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6])))

**pattern in ASCII\_Date\_Time** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* (-)?[0-9]{4}, (-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6]))))),  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6]))))) (T)(([0-1][0-9])—(2[0-3])):[0-5][0-9](Z)?,  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6]))))) (T)(([0-1][0-9])—(2[0-3])):[0-5][0-9]:((([0-5][0-9])—60)(([0-9]{1,4}))?(Z)?),  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6]))))) (T)(([0-1][0-9])—(2[0-4]))(Z)?,  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6]))))) (T)24:00(:00((0+)?))?(Z)?,  
(-)?[0-9]{4}-((0[1-9])—(1[0-2])),  
(-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1])),  
(-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1])) (T)(([0-1][0-9])—(2[0-3])):[0-5][0-9](Z)?,  
(-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1])) (T)(([0-1][0-9])—(2[0-3])):[0-5][0-9]:((([0-5][0-9])—60)(([0-9]{1,4}))?(Z)?),  
(-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1])) (T)(([0-1][0-9])—(2[0-4]))(Z)?,  
(-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1])) (T)24:00(:00((0+)?))?(Z)?

**pattern in ASCII\_Date\_Time\_DOY** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* (-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6])))))(T)(([0-1][0-9])—(2[0-3])):[0-5][0-9](Z)?,  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6])))))(T)(([0-1][0-9])—(2[0-3])):[0-5][0-9]:((([0-5][0-9])—60)(([0-9]{1,4}))?(Z)?,  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6])))))(T)(([0-1][0-9])—(2[0-4]))(Z)?,  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6])))))(T)24:00(:00((0+)?)?(Z)?

**pattern in ASCII\_Date\_Time\_UTC** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date\_Time\_UTC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* (-)?[0-9]{4}(Z),  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6])))))(T)(([0-1][0-9])—(2[0-3])):[0-5][0-9](Z),  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6])))))(T)(([0-1][0-9])—(2[0-3])):[0-5][0-9]:((([0-5][0-9])—60)(([0-9]{1,4}))?(Z),  
(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3((([0-5][0-9])—(6[0-6])))))(T)(([0-1][0-9])—(2[0-4]))(Z),

(-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3(((0-5)[0-9])—(6[0-6])))))(T)24:00((:00((0+)?))?)?(Z),  
 (-)?[0-9]{4}-((00[1-9])—(0[1-9][0-9])—([1-2][0-9][0-9])—(3(((0-5)[0-9])—(6[0-6])))))(Z), (-)?[0-9]{4}-((0[1-9])—(1[0-2]))(Z),  
 (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(T)(([0-1][0-9])—(2[0-3])):[0-5][0-9](Z),  
 (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(T)(([0-1][0-9])—(2[0-3])):[0-5][0-9]:(((0-5)[0-9])—60)(([0-9]{1,4}))?(Z),  
 (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(T)(([0-1][0-9])—(2[0-4]))(Z),  
 (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(T)24:00((:00((0+)?))?)?(Z),  
 (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(Z)

**pattern in ASCII\_Date\_Time\_YMD** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date\_Time\_YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(T)(([0-1][0-9])—(2[0-3])):[0-5][0-9](Z)?,  
 (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(T)(([0-1][0-9])—(2[0-3])):[0-5][0-9]:(((0-5)[0-9])—60)(([0-9]{1,4}))?(Z)?,  
 (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(T)(([0-1][0-9])—(2[0-4]))(Z)?,  
 (-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—([1-2][0-9])—(3[0-1]))(T)24:00((:00((0+)?))?)?(Z)?

**pattern in ASCII\_Date\_YMD** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Date\_YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* (-)?[0-9]{4}, (-)?[0-9]{4}-((0[1-9])—(1[0-2])),  
(-)?[0-9]{4}-((0[1-9])—(1[0-2]))-((0[1-9])—(1[2][0-9])—(3[0-1]))

**pattern in ASCII\_LID** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**pattern in ASCII\_MD5\_Checksum** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_MD5\_Checksum

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* [0-9a-fA-F]{32}

**pattern in ASCII\_Numeric\_Base16** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base16

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**pattern in ASCII\_Numeric\_Base2** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base2

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* [0-1]{1,255}

**pattern in ASCII\_Numeric\_Base8** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base8

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* PATTERN



*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* [0-7]{1,255}

**pattern in ASCII\_Time** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* (([0-1][0-9])—(2[0-3])):[0-5][0-9](Z—),  
((([0-1][0-9])—(2[0-3])):[0-5][0-9]:((([0-5][0-9])—60)(([0-9]+)—)(Z—),  
((([0-1][0-9])—(2[0-4]))(Z—), 24:00((:00((0+)—)—)(Z—)

**pattern in ASCII\_VID** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_VID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Niltable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 0([1-9]—([0-9][0-9]+)), [1-9][0-9]\*, [1-9][0-9]\*[0-9]+

**pattern in Character\_Data\_Type** The pattern attribute provides a symbolic instruction for forming values.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Niltable:* false

*Attribute Concept:* PATTERN

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**permissible\_value in DD\_Value\_Domain** The permissible\_value association is a relationship to Permissible\_Value.

*Type:* Association

**permissible\_value in DD\_Value\_Domain\_Full** The permissible\_value association is a relationship to Permissible\_Value.

*Type:* Association

**phone\_book\_flag in PDS\_Affiliate** The phone\_book\_flag attribute indicates whether or not this person should be included in the phone book.

*Type:* ASCII\_Boolean

*Class Name:* PDS\_Affiliate

*Nilable:* false

*Attribute Concept:* FLAG

*Conceptual Domain:* BOOLEAN

*Steward:* ops

*Namespace Id:* pds

**postal\_address\_text in PDS\_Affiliate** The postal address text attribute provides a mailing address.

*Type:* ASCII\_Text\_Preserved

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* TEXT

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**preferred\_flag in Terminological\_Entry** The preferred\_flag indicates whether this entry is preferred over all other entries.

*Type:* ASCII\_Boolean

*Class Name:* Terminological\_Entry

*Nillable:* false

*Attribute Concept:* FLAG

*Conceptual Domain:* BOOLEAN

*Steward:* ops

*Namespace Id:* pds

**primary\_body\_name in Target\_PDS3** The `primary_body_name` attribute identifies the primary body with which a given target body is associated as a secondary body.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Target\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**processing\_level\_id in Primary\_Result\_Summary** The `processing_level_id` attribute provides a broad indication of data processing level.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Primary\_Result\_Summary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Calibrated, Derived, Partially Processed, Raw, Telemetry

**producer\_full\_name in Data\_Set\_PDS3** The `producer_full_name` attribute provides the full\_name of the individual mainly responsible for the production of the data set. This individual does not have to be registered with the PDS.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Data\_Set\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**product\_class in Identification\_Area** The `product_class` attribute provides the name of the product class. For example the value of the attribute `product_class` must be `Product_Document` for any `Product_Document`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Identification\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Product\_AIP, Product\_Attribute\_Definition, Product\_Browse, Product\_Bundle, Product\_Class\_Definition, Product\_Collection, Product\_Context, Product\_DIP, Product\_DIP\_Deep\_Archive, Product\_Data\_Set\_PDS3, Product\_Document, Product\_File\_Repository, Product\_File\_Text, Product\_Instrument\_Host\_PDS3, Product\_Instrument\_PDS3, Product\_Mission\_PDS3, Product\_Observational, Product\_Proxy\_PDS3, Product\_SIP, Product\_SPICE\_Kernel, Product\_Service, Product\_Software, Product\_Subscription\_PDS3, Product\_Target\_PDS3, Product\_Thumbnail, Product\_Update, Product\_Volume\_PDS3, Product\_Volume\_Set\_PDS3, Product\_XML\_Schema, Product\_Zipped

*Schematron Rule:* The ROOT element must be one of the allowed types.

**product\_data\_object in Product\_AIP** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Attribute\_Definition** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Class\_Definition** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_DIP** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_DIP\_Deep\_Archive** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Data\_Set\_PDS3** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Instrument\_Host\_PDS3** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Instrument\_PDS3** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Mission\_PDS3** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_SIP** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Target\_PDS3** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Volume\_PDS3** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Volume\_Set\_PDS3** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Bundle** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Collection** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Context** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_data\_object in Product\_Update** The product\_data\_object association is a relationship to a data object.

*Type:* Association

**product\_description in Product\_Software** Description at the identifiable layer.

*Type:* Association

**product\_description in Product\_Document** Description at the identifiable layer.

*Type:* Association

**program\_notes\_id in Software\_Binary** The program notes id attribute provides an identifier to a brief statement giving particulars about a software program.



*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Software\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**program\_notes\_id in Software\_Source** The program notes id attribute provides an identifier to a brief statement giving particulars about a software program.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**programmers\_manual\_id in Software** The programmers manual id attribute provides an identifier to a document giving instruction about the programming of the software.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**publication\_date in Volume\_PDS3** The publication\_date attribute provides the date on which an item was published.

*Type:* ASCII.Date\_YMD

*Class Name:* Volume\_PDS3

*Format:* YYYY-MM-DD

*Nillable:* true

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* ops

*Namespace Id:* pds

**publication\_date in Document** The `publication_date` attribute provides the date on which an item was published.

*Type:* ASCII\_Date\_YMD

*Class Name:* Document

*Format:* YYYY-MM-DD

*Nilable:* true

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**publication\_year in Citation\_Information** The `publication_year` attribute provides the year in which the product should be considered as published. Generally, this will be the year the data were declared "Certified" or "Archived".

*Type:* ASCII\_Date

*Class Name:* Citation\_Information

*Format:* YYYY-MM-DD/YYYY-DOY

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**purpose in Primary\_Result\_Summary** The `purpose` attribute provides an indication of the primary purpose of the observations included.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Primary\_Result\_Summary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Calibration, Checkout, Engineering, Navigation, Science

**quaternion\_component in Quaternion** The quaternion\_component association is a relationship to Quaternion.Component.

*Type:* Association

**received\_packets in Telemetry\_Parameters** The received\_packets attribute provides the total number of telemetry packets which constitute a reconstructed data product, cf. expected\_packets.

*Type:* ASCII.Integer

*Class Name:* Telemetry\_Parameters

*Minimum Value:* 0

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* img

*Namespace Id:* img

**record\_delimiter in Stream\_Text** The record\_delimiter attribute provides the character or characters used to indicate the end of a record.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Stream\_Text

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* DELIMITER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* carriage-return line-feed

**record\_delimiter in Table\_Binary** The record\_delimiter attribute provides the character or characters used to indicate the end of a record.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Table\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* DELIMITER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**record\_delimiter in Table\_Character** The `record_delimiter` attribute provides the character or characters used to indicate the end of a record.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Table\_Character

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* DELIMITER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* carriage-return line-feed

**record\_delimiter in Table\_Delimited** The `record_delimiter` attribute provides the character or characters used to indicate the end of a record.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Table\_Delimited

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* DELIMITER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* carriage-return line-feed

**record\_length in Record\_Binary** The record\_length attribute provides the length of a record, including a record delimiter, if present.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Record\_Binary

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**record\_length in Record\_Character** The record\_length attribute provides the length of a record, including the record delimiter.

*Type:* ASCII\_Integer

*Unit of Measure Type:* Units\_of\_Storage

*Valid Units:* byte

*Specified Unit Id:* byte

*Class Name:* Record\_Character

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* LENGTH

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**records in File** The records attribute provides a count of records.

*Type:* ASCIIInteger

*Class Name:* File

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**records in Table\_Base** The records attribute provides a count of records.

*Type:* ASCIIInteger

*Class Name:* Table\_Base



*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**records in Table\_Delimited** The records attribute provides a count of records.

*Type:* ASCII\_Integer

*Class Name:* Table\_Delimited

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**reference\_frame\_id in Vector** The reference frame id attribute identifies a reference frame, an origin and set of axes, the physical realization of a reference system, i.e., the reference frame orientation and axes are established by the reported coordinates of datum points in the reference system.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Vector

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* true

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ICRF, MOON\_ME\_DE421

**reference\_frame\_id in Vector\_Cartesian\_3** The reference frame id attribute identifies a reference frame, an origin and set of axes, the physical realization of a reference system, i.e., the reference frame orientation and axes are established by the reported coordinates of datum points in the reference system.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Vector\_Cartesian\_3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* ICRF, MOON\_ME\_DE421

**reference\_list in Product\_AIP** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Attribute\_Definition** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Class\_Definition** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_DIP** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_DIP\_Deep\_Archive** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Data\_Set\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_File\_Repository** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Instrument\_Host\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Instrument\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Mission\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Proxy\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_SIP** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Service** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Software** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Subscription\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Target\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Volume\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Volume\_Set\_PDS3** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Browse** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Bundle** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Collection** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Context** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Document** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_File\_Text** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Observational** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_SPICE\_Kernel** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Thumbnail** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_Update** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_list in Product\_XML\_Schema** The reference\_list association is a relationship to Reference\_List.

*Type:* Association

**reference\_text in External\_Reference** The reference\_text attribute provides a complete bibliographic citation for a published work.

*Type:* ASCII\_Text\_Preserved

*Class Name:* External\_Reference

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* TEXT

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**reference\_type in DD\_Association** The reference\_type attribute provides the name of the association.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Association

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* attribute\_of, component\_of, extension\_of, restriction\_of, subclass\_of

**reference\_type in DD\_Association\_External** The `reference_type` attribute provides the name of the association.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Association\_External

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* attribute\_of, component\_of, extension\_of, restriction\_of, subclass\_of

**reference\_type in Bundle\_Member\_Entry** The `reference_type` attribute provides the name of the association.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Bundle\_Member\_Entry

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 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\_schema\_collection, bundle\_has\_spice\_kernel\_collection

**reference\_type in Internal\_Reference** The `reference_type` attribute provides the name of the association.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Internal\_Reference

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds



*Value:* is\_instrument, is\_instrument\_host, is\_other, is\_facility, is\_telescope, package\_has\_collection, package\_has\_bundle, package\_has\_product, package\_compiled\_from\_package, browse\_to\_data, browse\_to\_thumbnail, bundle\_to\_investigation, bundle\_to\_errata, bundle\_to\_document, bundle\_to\_investigation, bundle\_to\_instrument, bundle\_to\_instrument\_host, bundle\_to\_target, bundle\_to\_associate, collection\_to\_investigation, collection\_to\_resource, collection\_to\_associate, collection\_to\_calibration, collection\_to\_geometry, collection\_to\_spice\_kernel, collection\_curated\_by\_node, collection\_to\_document, collection\_to\_browse, collection\_to\_context, collection\_to\_data, collection\_to\_schema, collection\_to\_errata, collection\_to\_bundle, collection\_to\_personnel, collection\_to\_investigation, collection\_to\_instrument, collection\_to\_instrument\_host, collection\_to\_target, collection\_to\_associate, context\_to\_associate, instrument\_host\_to\_investigation, instrument\_host\_to\_document, instrument\_host\_to\_target, instrument\_to\_instrument\_host, instrument\_to\_document, investigation\_to\_target, investigation\_to\_document, 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, package\_has\_collection, package\_has\_bundle, package\_has\_product, package\_compiled\_from\_package, package\_has\_collection, package\_has\_bundle, package\_has\_product, package\_compiled\_from\_package, document\_to\_investigation, document\_to\_target, document\_to\_associate, document\_to\_investigation, document\_to\_instrument\_host, document\_to\_instrument, document\_to\_target, data\_to\_investigation, data\_to\_resource, data\_to\_calibration\_document, data\_to\_calibration\_product, data\_to\_raw\_product, data\_to\_calibrated\_product, data\_to\_geometry, data\_to\_spice\_kernel, data\_to\_thumbnail, data\_to\_document, data\_curated\_by\_node, data\_to\_browse, data\_to\_ancillary\_data, package\_has\_collection, package\_has\_bundle, package\_has\_product, zip\_to\_package, data\_to\_target, collection\_to\_target, bundle\_to\_target, data\_to\_update, collection\_to\_update, bundle\_to\_update

**reference\_type in Inventory** The `reference_type` attribute provides the name of the association.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Inventory

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* inventory\_has\_member\_product

**registered\_by in DD\_Attribute\_Full** The registered\_by attribute provides the name of the person or organization that registered the object.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**registered\_by in DD\_Class\_Full** The registered\_by attribute provides the name of the person or organization that registered the object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**registration\_authority\_id in DD\_Attribute\_Full** The registration\_authority\_id attribute provides the name of the organization that registered the object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* 0001\_NASA\_PDS\_1

**registration\_authority\_id in DD\_Class\_Full** The registration\_authority\_id attribute provides the name of the organization that registered the object.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**registration\_date in PDS\_Affiliate** The registration\_date attribute provides the date of registration within the PDS system.

*Type:* ASCII.Date\_YMD

*Class Name:* PDS\_Affiliate

*Format:* YYYY-MM-DD

*Nillable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* ops

*Namespace Id:* pds

**registration\_date in PDS\_Guest** The registration\_date attribute provides the date of registration within the PDS system.

*Type:* ASCII\_Date\_YMD

*Class Name:* PDS\_Guest

*Format:* YYYY-MM-DD

*Nullable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* ops

*Namespace Id:* pds

**repetitions in Group** The repetitions attribute provides the number of times a set of repeating fields and, possibly, (sub)groups is replicated within a group.

*Type:* ASCII\_Integer

*Class Name:* Group

*Minimum Value:* 1

*Nullable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**revision\_id in Document** The revision\_id attribute provides the revision level of a document, which may be set outside PDS and may be different from its version\_id.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Document

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**rotation\_direction in Target\_PDS3** The `rotation_direction` element provides the direction of rotation as viewed from the north pole of the 'invariable plane of the solar system', which is the plane passing through the center of mass of the solar system and perpendicular to the angular momentum vector of the solar system. The value for this element is PROGRADE for counter -clockwise rotation, RETROGRADE for clockwise rotation and SYNCHRONOUS for satellites which are tidally locked with the primary. `Sidereal_rotation_period` and `rotation_direction_type` are unknown for a number of satellites, and are not applicable (N/A) for satellites which are tumbling.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Target\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* DIRECTION

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**sample\_display\_direction in Display\_2D\_Image** The `sample_display_direction` attribute provides the preferred orientation of samples within a line for viewing on a display device. The attribute `sample_display_direction` must be used with `line_display_direction`.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Display\_2D\_Image

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* DIRECTION

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Right

**sampling\_parameter\_interval in Uniformly\_Sampled** The `sampling_parameter_interval` element identifies the spacing of points at which data are sampled and at which a value for an instrument or dataset parameter is available. This sampling interval can be either the original (raw) sampling or the result of some resampling process. For example, in 48-second magnetometer data the sampling interval is 48. The sampling parameter (time, in the example) is identified by the `sampling_parameter_name` element.

*Type:* ASCII\_Real

*Class Name:* Uniformly\_Sampled

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**sampling\_parameter\_name in Uniformly\_Sampled** The `sampling_parameter_name` element provides the name of the parameter which determines the sampling interval of a particular instrument or dataset parameter. For example, magnetic field intensity is sampled in time increments, and a spectrum is sampled in wavelength or frequency.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Uniformly\_Sampled

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**sampling\_parameter\_scale in Uniformly\_Sampled** The `sampling_parameter_scale` element specifies whether the sampling interval is linear or something other such as logarithmic.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Uniformly\_Sampled



*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* SCALE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Exponential, Linear, Logarithmic

**sampling\_parameter\_unit in Uniformly\_Sampled** The `sampling_parameter_unit` element specifies the unit of measure of associated data sampling parameters.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Uniformly\_Sampled

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* UNIT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**saturated\_constant in Special\_Constants** The `saturated_constant` attribute provides a value that indicates the original value was invalid because of sensor saturation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* CONSTANT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**scaling\_factor in Band\_Bin** The `scaling_factor` attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (`Ov`) is calculated from the stored value (`Sv`) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 1.

*Type:* ASCII.Real

*Class Name:* Band\_Bin

*Nilable:* false

*Attribute Concept:* FACTOR

*Conceptual Domain:* REAL

*Steward:* img

*Namespace Id:* pds

**scaling\_factor in Element\_Array** The `scaling_factor` attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (`Ov`) is calculated from the stored value (`Sv`) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 1.

*Type:* ASCII\_Real

*Class Name:* Element\_Array

*Nillable:* false

*Attribute Concept:* FACTOR

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**scaling\_factor in Field\_Binary** The scaling\_factor attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 1.

*Type:* ASCII\_Real

*Class Name:* Field\_Binary

*Nillable:* false

*Attribute Concept:* FACTOR

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**scaling\_factor in Field\_Bit** The scaling\_factor attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 1.

*Type:* ASCII\_Real

*Class Name:* Field\_Bit

*Nullable:* false

*Attribute Concept:* FACTOR

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**scaling\_factor in Field\_Character** The scaling\_factor attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value.offset$ . The default value is 1.

*Type:* ASCII\_Real

*Class Name:* Field\_Character

*Nullable:* false

*Attribute Concept:* FACTOR

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**scaling\_factor in Field\_Delimited** The scaling\_factor attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value.offset$ . The default value is 1.

*Type:* ASCII\_Real

*Class Name:* Field\_Delimited

*Nillable:* false

*Attribute Concept:* FACTOR

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**sequence\_number in Axis\_Array** The `sequence_number` attribute provides a number that is used to order axes in an array.

*Type:* ASCII\_Integer

*Class Name:* Axis\_Array

*Minimum Value:* 1

*Maximum Value:* 16

*Nillable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

*Schematron Rule:* The sequence number of the first axis of an `Array_2d_Image` must be set to 1.

*Schematron Rule:* The sequence number of the second axis of an `Array_2d_Image` must be set to 2.

**sequence\_number in Quaternion\_Component** The `sequence_number` attribute provides a number that is used to order axes in an array.

*Type:* ASCII\_Integer

*Class Name:* Quaternion\_Component

*Minimum Value:* 1

*Maximum Value:* 16

*Nilable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**sequence\_number in Vector\_Component** The `sequence_number` attribute provides a number that is used to order axes in an array.

*Type:* ASCII\_Integer

*Class Name:* Vector\_Component

*Minimum Value:* 1

*Maximum Value:* 16

*Nilable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**serial\_number in Instrument** The `serial_number` element provides the assigned manufacturer's serial number.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**serial\_number in Instrument\_Host** The serial number attribute provides the manufacturer's serial number assigned to an instrument host.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument\_Host

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**software\_dialect in Software\_Source** The software dialect attribute indicates the variety of a language used to write the software.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**software\_format\_set in Product\_Software** The software\_format\_set association is a relationship to a set of one or more software formats.

*Type:* Association

**software\_format\_type in Software\_Binary** The software format type attribute classifies the format of the software.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds



**software\_format\_type in Software\_Source** The software format type attribute classifies the format of the software.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**software\_id in Software** The software id attribute provides a formal name used to refer to the software.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**software\_language in Software\_Source** The software language attribute identifies the language used to write the software.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**software\_type in Software** The software type attribute identifies the class of which the software is a member.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**solar\_longitude in Time\_Coordinates** The `solar_longitude` attribute provides the angle between the body-Sun line at the time of interest and the body-Sun line at its vernal equinox.

*Type:* ASCII\_Real

*Unit of Measure Type:* Units\_of\_Angle

*Valid Units:* arcmin, arcsec, deg, hr, mrad, rad

*Specified Unit Id:* deg

*Class Name:* Time\_Coordinates

*Minimum Value:* 0

*Maximum Value:* 360

*Nilable:* false

*Attribute Concept:* LONGITUDE

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**sort\_name in PDS\_Affiliate** The `sort_name` attribute provides a string to be used in ordering. For people, the last name (surname) is typically first, followed by a comma and then other names.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**sort\_name in PDS\_Guest** The sort name attribute provides a string to be used in ordering. For people, the last name (surname) is typically first, followed by a comma and then other names.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* PDS\_Guest

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**source in Terminological\_Entry** The bibliographic\_reference association is a relationship to bibliographic reference.

*Type:* Association

**specified\_unit\_id in DD\_Value\_Domain** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**specified\_unit\_id in DD\_Value\_Domain\_Full** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**specified\_unit\_id in Unit\_Of\_Measure** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Unit\_Of\_Measure

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**specified\_unit\_id in Units\_of\_Acceleration** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Acceleration

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* m/s\*\*2

**specified\_unit\_id in Units\_of\_Amount\_Of\_Substance** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Amount\_Of\_Substance

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* mol

**specified\_unit\_id in Units\_of\_Angle** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Angle

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* deg

**specified\_unit\_id in Units\_of\_Angular\_Velocity** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Angular\_Velocity

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* deg/s

**specified\_unit\_id in Units\_of\_Area** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255



*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* m\*\*2

**specified\_unit\_id in Units\_of\_Frame\_Rate** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Frame\_Rate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* frames/s

**specified\_unit\_id in Units\_of\_Frequency** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Frequency

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Hz

**specified\_unit\_id in Units\_of\_Length** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Length

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* m

**specified\_unit\_id in Units\_of\_Map\_Scale** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Map\_Scale

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* pixel/deg

**specified\_unit\_id in Units\_of\_Mass** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Mass

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* kg

**specified\_unit\_id in Units\_of\_Misc** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Misc

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* DN

**specified\_unit\_id in Units\_of\_None** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_None

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* none

**specified\_unit\_id in Units\_of\_Optical\_Path\_Length** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Optical\_Path\_Length

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* airmass

**specified\_unit\_id in Units\_of\_Pressure** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Pressure

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* bar

**specified\_unit\_id in Units\_of\_Radiance** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Radiance

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* W\*m\*\*-2\*sr\*\*-1

**specified\_unit\_id in Units\_of\_Rates** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Rates

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* counts/bin

**specified\_unit\_id in Units\_of\_Solid\_Angle** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Solid\_Angle

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* sr

**specified\_unit\_id in Units\_of\_Storage** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Storage

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* byte

**specified\_unit\_id in Units\_of\_Temperature** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Temperature

*Minimum Characters:* 1

*Maximum Characters:* 255



*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* degC

**specified\_unit\_id in Units\_of\_Time** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* s

**specified\_unit\_id in Units\_of\_Velocity** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Velocity

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* m/s

**specified\_unit\_id in Units\_of\_Voltage** The specified\_unit\_id attribute provides the units chosen for maximum\_value, minimum\_value, and permissible\_value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Voltage

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* V

**specified\_unit\_id in Units\_of\_Volume** The `specified_unit_id` attribute provides the units chosen for `maximum_value`, `minimum_value`, and `permissible_value`.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Volume

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* L

**spice\_file\_name in Telemetry\_Parameters** The `spice_file_name` attribute provides the names of the SPICE files used in processing the data.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Telemetry\_Parameters

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* img

*Namespace Id:* img

**standard\_deviation in Band\_Bin** The standard\_deviation attribute provides the standard deviation of values in the associated object; empty and Special\_Constants values are excluded.

*Type:* ASCII\_Real

*Class Name:* Band\_Bin

*Nilable:* false

*Attribute Concept:* DEVIATION

*Conceptual Domain:* REAL

*Steward:* img

*Namespace Id:* pds

**standard\_deviation in Field\_Statistics** The standard\_deviation attribute provides the standard deviation of the stored field over all records (empty fields and Special\_Constants values are excluded from the computation).

*Type:* ASCII\_Real

*Class Name:* Field\_Statistics

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* DEVIATION

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**standard\_deviation in Object\_Statistics** The `standard_deviation` attribute provides the standard deviation of the stored array element values after application of any bit mask (`Special_Constants` values are excluded from the computation).

*Type:* ASCII\_Real

*Class Name:* Object\_Statistics

*Minimum Value:* 0

*Nillable:* false

*Attribute Concept:* DEVIATION

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**start\_bit in Field\_Bit** The `start_bit` attribute provides the position of the first bit within an ordered sequence of bits.

*Type:* ASCII\_Integer

*Class Name:* Field\_Bit

*Minimum Value:* 1

*Nillable:* false

*Attribute Concept:* BIT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**start\_date in Investigation** The `start_date` attribute provides the date when an activity began.

*Type:* ASCII\_Date\_YMD

*Class Name:* Investigation

*Format:* YYYY-MM-DD

*Nullable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**start\_date\_time in Data\_Set\_PDS3** The start\_date\_time attribute provides the date and time at the beginning of the data set.

*Type:* ASCII\_Date\_Time

*Class Name:* Data\_Set\_PDS3

*Format:* YYYY-MM-DDTHH:MM:SS.SSS(Z)/YYYY-DOYTHH:MM:SS.SSS(Z)

*Nullable:* true

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* ops

*Namespace Id:* pds

**start\_date\_time in Time\_Coordinates** The start\_date\_time attribute provides the date and time appropriate to the beginning of the product being labeled.

*Type:* ASCII\_Date\_Time\_UTC

*Class Name:* Time\_Coordinates

*Format:*

YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

*Nillable:* true

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**starting\_point\_identifier in Document\_Format** The starting\_point attribute provides the local\_identifier of the object to be accessed first.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Document\_Format

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**steward\_id in DD\_Attribute\_Full** The steward attribute indicates the person or organization who manages a set of registered attributes and classes.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* atm, geo, img, naif, ops, pds, ppi, rings, rs, sbn

**steward\_id in DD\_Class\_Full** The *steward\_id* attribute provides the abbreviation of the organization that manages the set of registered attributes and classes.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* atm, geo, img, naif, ops, pds, ppi, rings, rs, sbn



**steward\_id in Ingest\_LDD** The `steward_id` attribute provides the abbreviation of the organization that manages the set of registered attributes and classes.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Ingest\_LDD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**stop\_bit in Field\_Bit** The `stop_bit` attribute provides the location of the last bit in this bit field relative to the first bit in the `packed_data` field. Bits are numbered continuously across byte boundaries. The first bit location in the packed data field is "1".

*Type:* ASCII.Integer

*Class Name:* Field\_Bit

*Minimum Value:* 1

*Nilable:* false

*Attribute Concept:* BIT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**stop\_date in Investigation** The stop\_date attribute provides the date when an activity ended.

*Type:* ASCII\_Date\_YMD

*Class Name:* Investigation

*Format:* YYYY-MM-DD

*Nilable:* true

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**stop\_date\_time in Data\_Set\_PDS3** The stop\_date\_time attribute provides the date and time at the end of the data set.

*Type:* ASCII\_Date\_Time

*Class Name:* Data\_Set\_PDS3

*Format:* YYYY-MM-DDTHH:MM:SS.SSS(Z)/YYYY-DOYTHH:MM:SS.SSS(Z)

*Nilable:* true

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* ops

*Namespace Id:* pds

**stop\_date\_time in Time\_Coordinates** The stop\_date\_time attribute provides the date and time appropriate to the end of the product being labeled.

*Type:* ASCII.Date\_Time.UTC

*Class Name:* Time.Coordinates

*Format:*

YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

*Nilable:* true

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* pds

*Namespace Id:* pds

**submitter\_name in DD\_Attribute** The submitter\_name attribute provides the name of the author, who submits the item to the steward.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Attribute

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**submitter\_name in DD\_Attribute\_Full** The submitter\_name attribute provides the name of the author, who submits the item to the steward.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**submitter\_name in DD\_Class** The submitter\_name attribute provides the name of the author, who submits the item to the steward.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**submitter\_name in DD\_Class\_Full** The submitter\_name attribute provides the name of the author, who submits the item to the steward.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**subscriber in Product\_Subscription\_PDS3** The subscriber association is a relationship to a Subscriber\_PDS3 class.

*Type:* Association

**subscription\_id in Subscriber\_PDS3** The subscriber\_id provides the identification of a PDS subscription.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Subscriber\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**supported\_architecture\_note in Software\_Binary** The supported architecture note attribute identifies the hardware architecture that can process the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Binary

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**supported\_architecture\_note in Software\_Source** The supported architecture note attribute identifies the hardware architecture that can process the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**supported\_environment\_note in Software\_Script** The supported environment note attribute identifies the environment that can process the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Script

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**supported\_operating\_system\_note in Software\_Binary** The supported operating system note attribute identifies the Operating System that supports the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Binary

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**supported\_operating\_system\_note in Software\_Source** The supported operating system note attribute identifies the Operating System that supports the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**system\_requirements\_note in Software\_Binary** The system requirements note attribute identifies what is necessary to process the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Binary

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds



**system\_requirements\_note in Software\_Script** The system requirements note attribute identifies what is necessary to process the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Script

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**system\_requirements\_note in Software\_Source** The system requirements note attribute identifies what is necessary to process the software.

*Type:* ASCII\_Text\_Preserved

*Class Name:* Software\_Source

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* NOTE

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**target\_desc in Target\_PDS3** The target\_desc attribute describes the characteristics of a particular target.

*Type:* ASCII.Text.Preserved

*Class Name:* Target\_PDS3

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* DESCRIPTION

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**target\_name in Target\_PDS3** The target\_name attribute provides a name by which the target is formally known.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Target\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**target\_type in Target\_PDS3** The target\_type attribute identifies the type of a named target.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Target\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**team\_name in PDS\_Affiliate** The `team_name` attribute provides the name of a group of individuals.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* Engineering, Geosciences, Headquarters, Imaging, Management, National Space Science Data Center, Navigation Ancillary Information Facility, Planetary Atmospheres, Planetary Plasma Interactions, Planetary Rings, Radio Science, Small Bodies

**telemetry\_format\_id in Telemetry\_Parameters** The telemetry\_format\_id attribute supplies a telemetry format code. telemetry

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Telemetry\_Parameters

*Minimum Characters:* 1

*Maximum Characters:* 4

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* img

*Namespace Id:* img

**telemetry\_provider\_id in Telemetry\_Parameters** The telemetry\_provider\_id attribute identifies the provider and or version of the telemetry data used in the generation of this data. telemetry

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Telemetry\_Parameters

*Minimum Characters:* 1

*Maximum Characters:* 20

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* img

*Namespace Id:* img

**telemetry\_source\_name in Telemetry\_Parameters** The telemetry\_source\_name attribute identifies the telemetry source used in creation of a data set.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Telemetry\_Parameters

*Minimum Characters:* 1

*Maximum Characters:* 60

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* img

*Namespace Id:* img

**telemetry\_source\_type in Telemetry\_Parameters** The telemetry\_source\_type attribute classifies the source of the telemetry used in creation of this data collection.

*Type:* ASCII.Short.String.Collapsed

*Unit of Measure Type:* Units\_of\_None

*Valid Units:* none

*Class Name:* Telemetry\_Parameters

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* img

*Namespace Id:* img

*Value:* DATA\_PRODUCT, SFDU

**telephone\_number in PDS\_Affiliate** The `telephone_number` attribute provides a telephone number in international notation in compliance with the E.164 telephone number format recommendation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* PDS\_Affiliate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NUMBER

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**telescope\_latitude in Telescope** The `latitude` attribute provides the angular distance north or south from the equator of a point on the object's surface, measured on the meridian of the point.

*Type:* ASCII\_Real

*Unit of Measure Type:* Units\_of\_Angle

*Valid Units:* arcmin, arcsec, deg, hr, mrad, rad

*Specified Unit Id:* deg

*Class Name:* Telescope

*Minimum Value:* -90

*Maximum Value:* 90

*Nilable:* false

*Attribute Concept:* LATITUDE

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**telescope\_longitude in Telescope** The longitude attribute provides the angular distance east or west on the object's surface, measured by the angle contained between the meridian of a particular place and some prime meridian.

*Type:* ASCIIReal

*Unit of Measure Type:* Units\_of\_Angle

*Valid Units:* arcmin, arcsec, deg, hr, mrad, rad

*Specified Unit Id:* deg

*Class Name:* Telescope

*Nilable:* false

*Attribute Concept:* LONGITUDE

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**terminological\_entry in DD\_Attribute** The terminological\_entry association is a relationship to Terminological\_Entry.

*Type:* Association

**terminological\_entry in DD\_Attribute\_Full** The terminological\_entry association is a relationship to Terminological\_Entry.

*Type:* Association

**terminological\_entry in DD\_Class** The terminological\_entry association is a relationship to Terminological\_Entry.

*Type:* Association

**terminological\_entry in DD\_Class\_Full** The terminological\_entry association is a relationship to Terminological\_Entry.

*Type:* Association

**title in Identification\_Area** The name given to the resource. Typically, a Title will be a name by which the resource is formally known. - Dublin Core - The title is used to refer to an object in a version independent manner.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Identification\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TITLE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds



**transfer\_manifest\_checksum in Information\_Package\_Component**

The transfer manifest checksum provides the checksum for the transfer manifest file.

*Type:* ASCII\_MD5\_Checksum

*Class Name:* Information\_Package\_Component

*Minimum Characters:* 32

*Maximum Characters:* 32

*Format:* 0123456789abcdef

*Nilable:* false

*Attribute Concept:* CHECKSUM

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**type in DD\_Attribute\_Full** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* PDS3, PDS4

**type in DD\_Class\_Full** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* PDS3, PDS4

**type in Facility** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Facility

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Laboratory, Observatory

**type in Instrument** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Accelerometer, Alpha Particle Detector, Alpha Particle Xray Spectrometer, Altimeter, Anemometer, Atomic Force Microscope, Barometer, Biology Experiments, Bolometer, Camera, Cosmic Ray Detector, Dust Detector, Electrical Probe, Energetic Particle Detector, Gamma Ray Detector, Gas Analyzer, Grinding And Drilling Tool, Hygrometer, Imager, Imaging Spectrometer, Inertial Measurement Unit, Infrared Spectrometer, Laser Induced Breakdown Spectrometer, Magnetometer, Mass Spectrometer, Microwave Spectrometer, Moessbauer Spectrometer, Naked Eye, Neutral Particle Detector, Neutron Detector, Photometer, Plasma Analyzer, Plasma Detector, Plasma Wave Spectrometer, Polarimeter, RADAR, Radio Science, Radio Spectrometer, Radio Telescope, Radiometer, Reflectometer, Spectrograph Imager, Spectrometer, Thermal And Electrical Conductivity Probe, Thermal Imager, Thermal Probe, Thermometer, Ultraviolet Spectrometer, Wet Chemistry Laboratory, X-ray Defraction Spectrometer, X-ray Detector, X-ray Fluorescence, X-ray Fluorescence Spectrometer

**type in Instrument\_Host** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Instrument\_Host

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Earth Based, Rover, Spacecraft

**type in Investigation** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Investigation

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Individual Investigation, Mission, Observing Campaign,  
Other Investigation

**type in Investigation\_Area** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Investigation\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Individual Investigation, Mission, Observing Campaign,  
Other Investigation

**type in Observing\_System\_Component** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Observing\_System\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Artificial Illumination, Instrument, Laboratory, Literature Search, Naked Eye, Observatory, Spacecraft, Telescope

**type in Primary\_Result\_Summary** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Primary\_Result\_Summary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Altimetry, Astrometry, Count, E/B-Field Vectors, Gravity Model, Image, Lightcurves, Magnetometry, Map, Meteorology, Null Result, Occultation, Photometry, Physical Parameters, Polarimetry, Radiometry, Reference, Shape Model, Spectrum

**type in Quaternion** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Quaternion

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* SPICE, Spacecraft Telemetry

**type in Resource** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Resource

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Information.Agency, Information.Instrument, Information.Instrument\_Host, Information.Investigation, Information.Node, Information.Person, Information.Resource, Information.Science\_Portal, Information.Target, System.Browse, System.Directory\_Listing, System.Registry\_Query, System.Search, System.Transform, System.Transport

**type in Target** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Target

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Asteroid, Comet, Dust, Dwarf Planet, Galaxy, Globular Cluster, Meteorite, Meteoroid, Meteoroid Stream, Nebula, Open Cluster, Planet, Planetary Nebula, Planetary System, Plasma Cloud, Ring, Satellite, Star, Star Cluster, Sun, Terrestrial Sample, Trans-Neptunian Object

**type in Target\_Identification** The type attribute provides a target's type, used to determine correct nomenclature for the name field.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Target\_Identification

*Minimum Characters:* 1



*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**type in Unit\_Of\_Measure** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Unit\_Of\_Measure

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**type in Units\_of\_Acceleration** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Acceleration

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Acceleration

**type in Units\_of\_Amount\_Of\_Substance** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Amount\_Of\_Substance

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Amount\_Of\_Substance

**type in Units\_of\_Angle** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Angle

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Angle

**type in Units\_of\_Angular\_Velocity** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Angular\_Velocity

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Angular\_Velocity

**type in Units\_of\_Area** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Area

**type in Units\_of\_Frame\_Rate** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Frame\_Rate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Frame\_Rate

**type in Units\_of\_Frequency** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Frequency

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Frequency

**type in Units\_of\_Length** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Length

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Length

**type in Units\_of\_Map\_Scale** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Map\_Scale

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Scale

**type in Units\_of\_Mass** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Mass

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Mass

**type in Units\_of\_Misc** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Misc

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Miscellaneous

**type in Units\_of\_None** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_None

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* None

**type in Units\_of\_Optical\_Path\_Length** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Optical\_Path\_Length

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Optical\_Path\_Length

**type in Units\_of\_Pressure** The type attribute provides a classification for the resource.



*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Pressure

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Pressure

**type in Units\_of\_Radiance** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Radiance

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Radiance

**type in Units\_of\_Rates** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Rates

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Rates

**type in Units\_of\_Solid\_Angle** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Solid\_Angle

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Solid\_Angle

**type in Units\_of\_Storage** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Storage

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Storage

**type in Units\_of\_Temperature** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Temperature

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Temperature

**type in Units\_of\_Time** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Time

**type in Units\_of\_Velocity** The type attribute provides a classification for the resource.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Velocity

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Velocity

**type in Units\_of\_Voltage** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Voltage

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Voltage

**type in Units\_of\_Volume** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Volume

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Volume

**type in Vector** The type attribute provides a classification for the resource.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Vector

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Acceleration, Pointing, Position, Velocity

**uniformly\_sampled in Table\_Binary** The `uniformly_sampled` association is a relationship to `Uniformly_Sampled`.

*Type:* Association

**uniformly\_sampled in Table\_Character** The `uniformly_sampled` association is a relationship to `Uniformly_Sampled`.

*Type:* Association

**uniformly\_sampled in Table\_Delimited** The `uniformly_sampled` association is a relationship to `Uniformly_Sampled`.

*Type:* Association

**unit in Axis\_Array** The `unit` attribute provides the unit of measurement.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Axis\_Array

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Conceptual Domain:* TEXT

*Steward:* pds

*Namespace Id:* pds

**unit in Element\_Array** The `unit` attribute provides the unit of measurement.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Element\_Array

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* UNIT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**unit in Field\_Binary** The unit attribute provides the unit of measurement.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Field\_Binary

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* UNIT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**unit in Field\_Bit** The unit attribute provides the unit of measurement.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Field\_Bit

*Minimum Characters:* 1

*Maximum Characters:* 255



*Nilable:* false

*Attribute Concept:* UNIT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**unit in Field\_Character** The unit attribute provides the unit of measurement.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Field\_Character

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* UNIT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**unit in Field\_Delimited** The unit attribute provides the unit of measurement.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Field\_Delimited

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* UNIT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**unit** in **Vector\_Component** The unit attribute provides the unit of measurement.

*Type:* UTF8\_Short\_String\_Collapsed

*Class Name:* Vector\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* UNIT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**unit\_id** in **Unit\_Of\_Measure** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Unit\_Of\_Measure

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**unit\_id in Units\_of\_Acceleration** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Acceleration

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* cm/s\*\*2, km/s\*\*2, m/s\*\*2

**unit\_id in Units\_of\_Amount\_Of\_Substance** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Amount\_Of\_Substance

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* mol

**unit\_id in Units\_of\_Angle** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Angle

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* arcmin, arcsec, deg, hr, mrad, rad

**unit\_id in Units\_of\_Angular\_Velocity** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Angular\_Velocity

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* deg/day, deg/s, rad/s

**unit\_id in Units\_of\_Area** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* m\*\*2

**unit\_id in Units\_of\_Frame\_Rate** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Frame\_Rate

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* frames/s

**unit\_id in Units\_of\_Frequency** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Frequency

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Hz

**unit\_id in Units\_of\_Length** The `unit_id` attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Length

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* AU, Angstrom, cm, km, m, micrometer, mm, nm

**unit\_id in Units\_of\_Map\_Scale** The `unit_id` attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Map\_Scale

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* km/pixel, m/pixel, mm/pixel, pixel/deg

**unit\_id in Units\_of\_Mass** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Mass

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* g, kg



**unit\_id in Units\_of\_Misc** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Misc

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* DN, electron/DN, pixel

**unit\_id in Units\_of\_None** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_None

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* none

**unit\_id in Units\_of\_Optical\_Path\_Length** The `unit_id` attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Optical\_Path\_Length

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* airmass

**unit\_id in Units\_of\_Pressure** The `unit_id` attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Pressure

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* Pa, bar, hPa, mbar

**unit\_id in Units\_of\_Radiance** The `unit_id` attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Radiance

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* W\*m\*\*-2\*sr\*\*-1

**unit\_id in Units\_of\_Rates** The `unit_id` attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Rates

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* counts/bin, kilobits/s

**unit\_id in Units\_of\_Solid\_Angle** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Solid\_Angle

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* sr

**unit\_id in Units\_of\_Storage** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Storage

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* byte

**unit\_id in Units\_of\_Temperature** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Temperature

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* K, degC

**unit\_id in Units\_of\_Time** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* day, hr, julian day, microseconds, min, ms, s, yr

**unit\_id in Units\_of\_Velocity** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Units\_of\_Velocity

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* cm/s, km/s, m/s

**unit\_id in Units\_of\_Voltage** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Voltage

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* V, mV

**unit\_id in Units\_of\_Volume** The unit\_id attribute provides a character or character string which serves as an abbreviation for, or symbol representing, a unit of measure.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Units\_of\_Volume

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* L, m\*\*3

**unit\_of\_measure\_type in DD\_Value\_Domain** The unit\_of\_measure\_type attribute provides the named grouping of units to be used for this attribute - for example Units\_of\_Length and Units\_of\_Time.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds



*Value:* Units\_of\_Acceleration, Units\_of\_Amount\_Of\_Substance,  
Units\_of\_Angle, Units\_of\_Angular\_Velocity, Units\_of\_Area,  
Units\_of\_Frame\_Rate, Units\_of\_Frequency, Units\_of\_Length,  
Units\_of\_Map\_Scale, Units\_of\_Mass, Units\_of\_Misc, Units\_of\_None,  
Units\_of\_Optical\_Path\_Length, Units\_of\_Pressure, Units\_of\_Radiance,  
Units\_of\_Rates, Units\_of\_Solid\_Angle, Units\_of\_Storage,  
Units\_of\_Temperature, Units\_of\_Time, Units\_of\_Velocity,  
Units\_of\_Voltage, Units\_of\_Volume

**unit\_of\_measure\_type in DD\_Value\_Domain\_Full** The  
unit\_of\_measure\_type attribute provides the named grouping of  
units to be used for this attribute - for example Units\_of\_Length and  
Units\_of\_Time.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* Units\_of\_Amount\_Of\_Substance, Units\_of\_Angle,  
Units\_of\_Angular\_Velocity, Units\_of\_Area, Units\_of\_Frame\_Rate,  
Units\_of\_Frequency, Units\_of\_Length, Units\_of\_Map\_Scale,  
Units\_of\_Mass, Units\_of\_Misc, Units\_of\_None,  
Units\_of\_Optical\_Path\_Length, Units\_of\_Pressure, Units\_of\_Radiance,  
Units\_of\_Rates, Units\_of\_Solid\_Angle, Units\_of\_Storage,  
Units\_of\_Temperature, Units\_of\_Time, Units\_of\_Velocity,  
Units\_of\_Voltage, Units\_of\_Volume

**unknown\_constant in Special\_Constants** The unknown\_constant at-  
tribute provides a value that indicates the original value was unknown.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* CONSTANT

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**update\_entry in Update** The update\_entry association is a relationship to Update\_Entry.

*Type:* Association

**url in External\_Reference\_Extended** The url attribute provides a Uniform Resource Identifier (URI) that specifies where a resource is available and the mechanism for retrieving it.

*Type:* ASCII.AnyURI

*Class Name:* External\_Reference\_Extended

*Nilable:* false

*Attribute Concept:* ANYURI

*Conceptual Domain:* ANYURI

*Steward:* ops

*Namespace Id:* pds

**url in Resource** The url attribute provides a Uniform Resource Identifier (URI) that specifies where a resource is available and the mechanism for retrieving it.

*Type:* ASCIIAnyURI

*Class Name:* Resource

*Nilable:* false

*Attribute Concept:* ANYURI

*Conceptual Domain:* ANYURI

*Steward:* pds

*Namespace Id:* pds

**users\_manual\_id in Software** The users manual id attribute provides a formal name used to refer to a manual that describes how to use the software.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Software

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**valid\_maximum in Special\_Constants** The `valid_maximum` attribute specifies the maximum valid value in the field or digital object with which the `Special_Constants` class is associated. Values above the `valid_maximum` have a special meaning. Values of this attribute should be represented in the same `data_type` as the elements in the object or field described. (Note that PDS3 had no qube-related `valid_maximum` values because all special constants were set below the `valid_minimum`.)

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* MAXIMUM

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* 254, 32767, 65522

**valid\_minimum in Special\_Constants** The `valid_minimum` attribute specifies the minimum valid value in the field or digital object with which the `Special_Constants` class is associated. Values below the `valid_minimum` have a special meaning. Values of this attribute should be represented in the same `data_type` as the elements in the object or field described.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Special\_Constants

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* MINIMUM

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* -32752, 1, 3, 5, FF7FFFA, FFEFFFF

**value in DD\_Permissible\_Value** The value attribute provides a single, allowed numerical or character string value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Permissible\_Value

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**value in DD\_Permissible\_Value\_Full** The value attribute provides a single, allowed numerical or character string value.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Permissible\_Value\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**value in Quaternion\_Component** The value attribute provides a single, allowed numerical or character string value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Quaternion\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**value in Vector\_Component** The value attribute provides a single, allowed numerical or character string value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Vector\_Component

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**value\_begin\_date in DD\_Permissible\_Value\_Full** The value\_begin\_date attribute provides the first date on which the permissible value is in effect.

*Type:* ASCII\_Date\_Time\_YMD

*Class Name:* DD\_Permissible\_Value\_Full

*Format:* YYYY-MM-DDTHH:MM:SS.SSS(Z)

*Nilable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* ops

*Namespace Id:* pds

**value\_data\_type in DD\_Value\_Domain** The value\_data\_type attribute provides the data type used to represent the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* ASCII\_AnyURI, ASCII\_Boolean, ASCII\_DOI, ASCII\_Date\_DOY, ASCII\_Date\_Time, ASCII\_Date\_Time\_DOY, ASCII\_Date\_Time\_UTC, ASCII\_Date\_Time\_YMD, 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\_Short\_String\_Collapsed, ASCII\_Short\_String\_Preserved, ASCII\_Text\_Collapsed, ASCII\_Text\_Preserved, ASCII\_Time, ASCII\_VID, UTF8\_Short\_String\_Collapsed, UTF8\_Short\_String\_Preserved, UTF8\_Text\_Preserved, Vector\_Cartesian\_3, Vector\_Cartesian\_3\_Acceleration, Vector\_Cartesian\_3\_Pointing, Vector\_Cartesian\_3\_Position, Vector\_Cartesian\_3\_Velocity

**value\_data\_type in DD\_Value\_Domain\_Full** The value\_data\_type attribute provides the data type used to represent the value.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* DD\_Value\_Domain\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* TYPE



*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* ASCII\_AnyURI, ASCII\_Boolean, ASCII\_DOI, ASCII\_Date\_DOY, ASCII\_Date\_Time, ASCII\_Date\_Time\_DOY, ASCII\_Date\_Time\_UTC, ASCII\_Date\_Time\_YMD, 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\_Short\_String\_Collapsed, ASCII\_Short\_String\_Preserved, ASCII\_Text\_Collapsed, ASCII\_Text\_Preserved, ASCII\_Time, ASCII\_VID, UTF8\_Short\_String\_Collapsed, UTF8\_Short\_String\_Preserved, UTF8\_Text\_Preserved

**value\_domain\_entry in DD\_Attribute** The value\_domain\_entry association is a relationship to Value\_Domain.

*Type:* Association

**value\_domain\_entry in DD\_Attribute.Full** The value\_domain\_entry association is a relationship to Value\_Domain.

*Type:* Association

**value\_end\_date in DD\_Permissible\_Value.Full** The value\_end\_date attribute provides the last date on which the permissible value is in effect.

*Type:* ASCII\_Date\_Time\_YMD

*Class Name:* DD\_Permissible\_Value\_Full

*Format:* YYYY-MM-DDTHH:MM:SS.SSS(Z)

*Nullable:* false

*Attribute Concept:* DATE\_TIME

*Conceptual Domain:* TIME

*Steward:* ops

*Namespace Id:* pds

**value\_meaning in DD\_Permissible\_Value** The `value_meaning` attribute provides the meaning, or semantic content, of the associated permissible value.

*Type:* ASCII.Text.Preserved

*Class Name:* DD\_Permissible\_Value

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**value\_meaning in DD\_Permissible\_Value\_Full** The `value_meaning` attribute provides the meaning, or semantic content, of the associated permissible value.

*Type:* ASCII.Text.Preserved

*Class Name:* DD\_Permissible\_Value\_Full

*Minimum Characters:* 1

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* TEXT

*Steward:* ops

*Namespace Id:* pds

**value\_offset in Band\_Bin** The value\_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 0.

*Type:* ASCII\_Real

*Class Name:* Band\_Bin

*Nilable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* REAL

*Steward:* img

*Namespace Id:* pds

**value\_offset in Element\_Array** The value\_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 0.

*Type:* ASCII\_Real

*Class Name:* Element\_Array

*Nilable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**value\_offset in Field\_Binary** The value\_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 0.

*Type:* ASCII\_Real

*Class Name:* Field\_Binary

*Nullable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**value\_offset in Field\_Bit** The value\_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 0.

*Type:* ASCII\_Real

*Class Name:* Field\_Bit

*Nullable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**value\_offset in Field\_Character** The value\_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 0.

*Type:* ASCII\_Real

*Class Name:* Field\_Character

*Nullable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**value\_offset in Field\_Delimited** The value\_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus:  $Ov = (Sv * scaling\_factor) + value\_offset$ . The default value is 0.

*Type:* ASCII\_Real

*Class Name:* Field\_Delimited

*Nullable:* false

*Attribute Concept:* OFFSET

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**vector in Geometry** The vector association is a relationship to Vector objects.

*Type:* Association

**vector\_component in Vector** The vector\_component association is a relationship to the vector\_component.

*Type:* Association

**vector\_components in Vector** The `vector_components` attribute provides a count of vector components.

*Type:* ASCII.Integer

*Class Name:* Vector

*Nilable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* pds

*Namespace Id:* pds

**version\_id in DD\_Attribute** The `version_id` attribute provides the version of the product, expressed in the PDS [m.n] notation.

*Type:* ASCII.Short.String\_Collapsed

*Class Name:* DD\_Attribute

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**version\_id in DD\_Attribute\_Full** The `version_id` attribute provides the version of the product, expressed in the PDS [m.n] notation.

*Type:* ASCII.Short.String\_Collapsed

*Class Name:* DD\_Attribute\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**version\_id in DD\_Class** The version\_id attribute provides the version of the product, expressed in the PDS [m.n] notation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**version\_id in DD\_Class\_Full** The version\_id attribute provides the version of the product, expressed in the PDS [m.n] notation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* DD\_Class\_Full

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**version\_id in Software** The version\_id attribute provides the version of the product, expressed in the PDS [m.n] notation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Software

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**version\_id in Identification\_Area** The version\_id attribute provides the version of the product, expressed in the PDS [m.n] notation.

*Type:* ASCII.Short.String.Collapsed



*Class Name:* Identification\_Area

*Minimum Characters:* 1

*Maximum Characters:* 255

*Pattern:* ([0-9]+)(){}1{([0-9]+)

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**version\_id in Instrument\_Host** The version\_id attribute provides the version of the product, expressed in the PDS [m.n] notation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Instrument\_Host

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**version\_id in Modification\_Detail** The version\_id attribute provides the version of the product, expressed in the PDS [m.n] notation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Modification\_Detail

*Minimum Characters:* 1

*Maximum Characters:* 255

*Pattern:* ([0-9]+)()\{1}([0-9]+)

*Nilable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**volume\_de\_fullname in Volume\_PDS3** The volume\_de\_fullname attribute provide the full name of the data engineer.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volume\_format in Volume\_PDS3** The volume\_format attribute identifies the logical format used in writing a data volume.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* FORMAT

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volume\_id in Volume\_PDS3** The volume\_id attribute provides a unique identifier for a data volume. Example: MG\_1001.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volume\_name in Volume\_PDS3** The `volume_name` attribute contains the name of a data volume.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volume\_series\_name in Volume\_Set\_PDS3** The `volume_series_name` element provides a full, formal name that describes a broad categorization of data products or data sets related to a planetary body or a research campaign (e.g. International Halley Watch). A volume series consists of one or more volume sets that represent data from one or more missions or campaigns.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Volume\_Set\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nullable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volume\_set\_id in Volume\_PDS3** The volume\_set\_id attribute identifies a data volume or a set of volumes. Volume sets are normally considered as a single orderable entity. Examples: USA\_NASA\_PDS\_MG\_1001, USA\_NASA\_PDS\_GR.0001\_TO\_GR.0009

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volume\_set\_id in Volume\_Set\_PDS3** The volume\_set\_id attribute identifies a data volume or a set of volumes. Volume sets are normally considered as a single orderable entity. Examples: USA\_NASA\_PDS\_MG\_1001, USA\_NASA\_PDS\_GR.0001\_TO\_GR.0009

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Volume\_Set\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volume\_set\_name in Volume\_Set\_PDS3** The volume\_set\_name element provides the full, formal name of one or more data volumes containing a single data set or a collection of related data sets. Volume sets are normally considered as a single orderable entity.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Volume\_Set\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* NAME

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volume\_size in Volume\_PDS3** The volume\_size attribute provide the number of bytes in the volume.

*Type:* ASCII\_NonNegative\_Integer

*Class Name:* Volume\_PDS3

*Minimum Value:* 0

*Nilable:* false

*Attribute Concept:* SIZE

*Conceptual Domain:* INTEGER

*Steward:* ops

*Namespace Id:* pds

**volume\_version\_id in Volume\_PDS3** The volume\_version\_id attribute identifies the version of a data volume. All original volumes should use a volume\_version\_id of 'Version 1'.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* Volume\_PDS3

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* ID

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

**volumes in Volume\_Set\_PDS3** The volumes element provides the number of physical data volumes contained in a volume set.

*Type:* ASCII.Integer

*Class Name:* Volume\_Set\_PDS3

*Minimum Value:* 0

*Nillable:* false

*Attribute Concept:* COUNT

*Conceptual Domain:* INTEGER

*Steward:* ops

*Namespace Id:* pds

**x in Vector\_Cartesian\_3** The x attribute provides the value of the x coordinate in a position vector.

*Type:* ASCII\_Real

*Class Name:* Vector\_Cartesian\_3

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**xml\_schema\_base\_type in ASCII\_AnyURI** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_AnyURI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops



*Namespace Id:* pds

*Value:* xsd:anyURI

**xml\_schema\_base\_type in ASCII\_DOI** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.DOI

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT.STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Date\_DOY** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Date\_Time** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Date\_Time\_DOY** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date\_Time\_DOY

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Date\_Time\_UTC** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date\_Time\_UTC

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Date\_Time\_YMD** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.Time.YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Date\_YMD** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Date.YMD

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Directory\_Path\_Name** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Directory\_Path\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:token

**xml\_schema\_base\_type in ASCII\_File\_Name** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_File\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:token

**xml\_schema\_base\_type in ASCII\_File\_Specification\_Name** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_File\_Specification\_Name

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:token

**xml\_schema\_base\_type in ASCII\_Integer** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:int

**xml\_schema\_base\_type in ASCII\_LID** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_LIDVID** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.LIDVID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_MD5\_Checksum** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_MD5\_Checksum

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING



*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_NonNegative\_Integer** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_NonNegative\_Integer

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:long

**xml\_schema\_base\_type in ASCII\_Real** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Real

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:double

**xml\_schema\_base\_type in ASCII\_Short\_String\_Collapsed** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:token

**xml\_schema\_base\_type in ASCII\_Short\_String\_Preserved** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Short\_String\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Text\_Preserved** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Text\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Time** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Time

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_VID** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_VID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in UTF8\_Short\_String\_Collapsed** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Short\_String\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:token

**xml\_schema\_base\_type in UTF8\_Short\_String\_Preserved** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Short\_String\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in UTF8\_Text\_Preserved** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* UTF8\_Text\_Preserved

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* ops

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Boolean** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Boolean

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:boolean

**xml\_schema\_base\_type in ASCII\_Date** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Date

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_LIDVID\_LID** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.LIDVID.LID

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Numeric\_Base16** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII.Numeric.Base16

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING



*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:hexBinary

**xml\_schema\_base\_type in ASCII\_Numeric\_Base2** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base2

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_Numeric\_Base8** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* ASCII\_Numeric\_Base8

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:string

**xml\_schema\_base\_type in ASCII\_String** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_String

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:token

**xml\_schema\_base\_type in ASCII\_Text\_Collapsed** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* ASCII\_Text\_Collapsed

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:token

**xml\_schema\_base\_type in Character\_Data\_Type** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII\_Short\_String\_Collapsed

*Class Name:* Character\_Data\_Type

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nilable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

**xml\_schema\_base\_type in UTF8\_String** The xml schema base type attribute provides the data type needed for the XML schema implementation.

*Type:* ASCII.Short.String.Collapsed

*Class Name:* UTF8\_String

*Minimum Characters:* 1

*Maximum Characters:* 255

*Nillable:* false

*Attribute Concept:* TYPE

*Conceptual Domain:* SHORT\_STRING

*Steward:* pds

*Namespace Id:* pds

*Value:* xsd:token

**y in Vector\_Cartesian\_3** The y attribute provides the value of the y coordinate in a position vector.

*Type:* ASCII\_Real

*Class Name:* Vector\_Cartesian\_3

*Nillable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

**z in Vector\_Cartesian\_3** The z attribute provides the value of the z coordinate in a position vector.

*Type:* ASCII\_Real

*Class Name:* Vector\_Cartesian\_3

*Nilable:* false

*Attribute Concept:* VALUE2

*Conceptual Domain:* REAL

*Steward:* pds

*Namespace Id:* pds

## 24 Glossary

The following glossary contains a list of terms used within this specification and the definitions for those terms.

**Archive** A place in which public records or historical documents are preserved; also the material preserved - often used in plural. Sometimes capitalized when referring to all of PDS holdings - the PDS Archive.

**Array** An N-dimensional data structure in which every element has an identical data type. For example, a structure with 5 rows and 3 columns in which each element is a 2-byte signed integer would be an array.

**Association** An attribute that establishes a unidirectional relationship between two classes. For example, a table has records; 'has record' is the relationship between one entity (the table) and another (a record).

**Attribute** A property or characteristic that provides a unit of information. For example, 'color' and 'length' are possible attributes.

**Basic\_Product** The simplest product in PDS4; one or more data objects (and their description objects), which constitute (typically) a single observation, document, etc. The only PDS4 products that are not basic products are Product\_Collection and Product\_Bundle. Every basic product must be a primary member of one (and only one) collection. Basic products may be secondary members of any number of collections.

**Bundle** A list of collections. `Product_Bundle`, the bundle's manifestation, is itself a product (because it is simply a list embedded within a label); but it is not a basic product. For example, a bundle could list a collection of raw data obtained by an instrument during its mission lifetime, a collection of the calibration products associated with the instrument, and a collection of all documentation relevant to the first two collections.

**Cardinality** The number of values allowed to an attribute or association in a single class. Cardinality in general is stated as a range with a minimum and maximum. For example, an optional attribute that may be multi-valued will have a cardinality of "0..\*". A cardinality where the minimum and maximum are the same is often shown as the single value; for example, an attribute required to have exactly one value will have a cardinality of "1". When a value is required, the minimum cardinality is at least 1.

**Class** The set of attributes (including a name) which defines a family. A class is generic - a template from which individual members of the family may be constructed. If the class 'rope' (its name) is defined by attributes 'color' and 'length', we can construct a family of ropes - e.g., red and 3 m long, red and 4 m long, blue and 2 m long, ...

**Class\_Hierarchy** An ordering of classes which shows parent-child relationships.

**Collection** A list of basic products, all of which are closely related in some way. The collection's manifestation, `Product_Collection`, is itself a product (because it is simply a list, with its label); but it is not a basic product.

**Conceptual\_Object** An object which is intangible (and, because it is intangible, does not fit into a digital archive). Examples of 'conceptual objects' include the Cassini mission and NASA's strategic plan for solar system exploration. Note that a PDF describing the Cassini mission is a digital object, not a conceptual object (nor a component of a conceptual object).

**Consulting\_Node** A PDS discipline node assigned as the contact for a mission, instrument, or project.

**Container** The physical equivalent of a package (see below); the product manifest and all related files wrapped together for transfer - for example, in a ZIP, GZIP, or TAR file.

**Data\_Dictionary** A repository for definitions of classes and attributes

**Data\_Object** A physical, conceptual, or digital object.

**Data\_Preparer** Same as data provider

**Data\_Provider** A person or organization that assembles archival data for delivery to PDS.

**Data\_Structure** A particular way of storing data in a computer that facilitates efficient use.

**Description\_Object** Something that describes an object. As appropriate, it will have structural and descriptive components. Technically speaking, a 'description object' in PDS4 is a 'digital object' - a string of bits; but we assume that we can read it and, on that basis, give it a special name.

**Digital\_Object** An object which is real data - for example, a binary image of a redwood tree or an ASCII table of atmospheric composition versus altitude.

**Discipline\_Area** That part of a label which is specified by a discipline.

**Encoded\_Byte\_Stream** A byte stream that may only be interpreted after it has been 'decoded' according to some well known standard

**Entity** Something that has a distinct, separate existence.

**Extension** (1) See subclass. (2) The character string following the last period in a file name.

**Identifier** A unique character string by which a product, object, or other entity may be identified and located. Identifiers can be global, in which case they are unique across all of PDS (and its federation partners). A local identifier must be unique within a label.

**Information\_Model** A representation of concepts, relationships, constraints, rules, and operations to specify data semantics for a chosen domain of discourse. Specifically, the PDS Information Model (IM) is the representation that specifies PDS4.

**Information\_Object** A data object paired with its description

**Inventory** An itemized list of current assets or holdings

**Label** The aggregation of one or more description objects such that the aggregation describes a single PDS product. In the PDS4 implementation, labels are constructed using XML, which imposes a small amount of overhead.

**Label\_Template** A text file which serves as a pattern for constructing labels.

**Lead\_Node** One of several consulting nodes designated as the PDS coordinator and primary contact with a mission.

**Local** (1) Within a single label. (2) Within an archiving entity - e.g., local data dictionary.

**Local\_Data\_Dictionary\_(LDD)** A data dictionary for classes and attributes which are not defined across the entire PDS. Examples include data dictionaries for discipline nodes, missions, and individual archiving projects.

**Logical\_Identifier\_(LID)** An identifier which identifies the set of all versions of an object

**Manifest** A list of contents

**Meta-Attribute** An attribute of an attribute - that is, a 'dictionary' attribute, which is used to define one or more attributes in the PDS4 Information Model. For example, 'conceptual\_domain' and 'maximum\_value' are used in defining some attributes.

**Metadata** Data about data - for example, a 'description object' contains information (metadata) about an 'object.'

**Mission** A task with which a group of people have been charged, usually by a government agency and including priority (if not exclusive) use of one or more spacecraft (see attribute type within class Investigation\_Area)

**Mission\_Area** That part of a label which is specified by a mission

**Model** A representation or description designed to show an entity and its composition.

**Namespace** A context for defining classes and attributes. Two items with the same name but from different namespaces generally have different definitions. For example, "title" has a very different meaning in a movie namespace compared with its meaning in an automobile namespace.

**Object** The realization of a single member of a family defined by a class. If the class 'rope' has attributes 'color' and 'length', we can construct a 'rope' family with three members - red and 3 m long, red and 4 m long, and blue and 2 m long. Each member is an object.

**Observational\_Data** Raw measurements from one or more instruments, or the results from processing such raw measurements.



**Observing\_Campaign** An observational assignment with which a group of people have been charged (sometimes voluntarily) which extends over some period of time and which can be accomplished without significant construction of new equipment. (see attribute type within class Investigation\_Area)

**Package** A product manifest and all related files logically grouped together for transfer.

**Parsable\_Byte\_Stream** A byte stream which can be parsed with standard rules - e.g., comma separated entries or standard punctuation; 'decoding software' is not needed.

**Physical\_Object** An object which is physical or tangible (and, therefore, does not itself fit into a digital archive). Examples of 'physical objects' include the planet Saturn and the Venus Express magnetometer. Note that an ASCII file describing Saturn is a digital object, not a physical object (nor a component of a physical object).

**Primary\_Member** A basic product is a primary member of the collection within which it first enters PDS4. Every basic product must be a primary member of one (and only one) collection. A product's member status (primary or secondary) is based on its first association with the collection. Although the product may be omitted from a later version of the collection, it retains its primary or secondary member status through all subsequent versions of the collection based on its initial association. In a similar way, collections are categorized as having either primary or secondary 'member status' in their bundles.

**Product** One or more tagged objects (digital, non-digital, or both) grouped together and having a single PDS-unique identifier. In the PDS4 implementation, the descriptions are combined into a single XML label. Although it may be possible to locate individual objects within PDS (and to find specific bit strings within digital objects), PDS4 defines 'products' to be the smallest granular unit of addressable data within its complete holdings.

**Registration\_Authority** An organization responsible for maintaining a registry - in this case, the PDS4 Information Model and its components. The registration authority for the Planetary Data System is 'PDS'.

**Registry** A data base that provides services for sharing content and meta-data.

**Repository** A place, room, or container where something is deposited or stored (often for safety or preservation)

**Resource** The target (referent) of any Uniform Resource Identifier; the thing to which a URI points.

**Restored\_Data** Data which have been recovered from storage and successfully prepared for archive in PDS

**Restriction** A limit placed on the range of a variable; specifically, the narrowing of possible choices for a class or attribute. For example, attribute axes may have values between 1 and 16 in the definition of Array, but it is restricted to the value '2' in Array\_2D.

**Schema** A structural definition given in a formal language which serves as a blueprint for construction.

**Science\_Bundle** Observational data from a science investigation, documentation, and other supplementary data organized into a bundle structure for delivery to PDS.

**Secondary\_Member** A basic product may be a secondary member of any number of collections. A collection which lists references to basic products already registered in PDS would identify those products as its secondary members. For example, if all Voyager images were in one primary collection, an analyst could define a new (subset) collection containing images which had Saturn's rings within the field of view; each of those image products would be a secondary member of the new collection. A product's member status (primary or secondary) is based on its first association with the collection. Although the product may be omitted from a later version of the collection, it retains its primary or secondary member status through all subsequent versions of the collection based on its initial association. In a similar way, collections are categorized as having either primary or secondary 'member status' in their bundles.

**Steward** A person or organization that manages a set of registered attributes and classes, typically as an agent for another or others. A registration authority must have at least one steward; it may have many. Stewards for PDS4 include PDS, the discipline nodes, and any mission wishing to conform to the PDS4 Information Model.

**Subclass** In PDS4 a subclass is a class extension. Subclasses are more specialized versions of a class. They inherit attributes and behaviors from their parent classes, and they can have attributes of their own. For example, Array\_2D is a PDS4 subclass of Array\_Base.

**Supplementary\_Data** Additional archival material which is useful in understanding observational data. Examples include browse products,

descriptions of instruments and other facilities important to data acquisition, information about observing geometry, calibrations, and observing and command logs.

**Table** A two-dimensional data structure composed of records, which themselves are heterogeneous but which repeat throughout the table. For example, a table could have 20 ASCII records, each of which has a 10-character date field, a comma, an 8-character time field, a comma, a 3-digit integer temperature field, and a 'carriage-return line-feed' record delimiter.

**Tag** Fundamental syntax in XML; a tag is a character string delimited by "i" and "j". For example 'jdatej' is a tag.

**Tagged\_Digital\_Object** A digital object paired with its companion description object. [Note: In the OAIS RM this pair is known as an 'information object']

**Tagged\_Non-Digital\_Object** A physical object or a conceptual object paired with its companion description object. [Note: In the OAIS RM this pair is known as an 'information object']

**Version\_Identifier\_(VID)** An identifier which identifies the version of something else

**Versioned\_Identifier\_(LIDVID)** The concatenation of a logical identifier (LID) with a version identifier (VID).

**XML\_Attribute** An attribute-value pair that is inserted into an XML element to provide additional information, such as units; the value is always enclosed in double quotes. For example jdate unit="year"j2009j/datej

**XML\_Document** A file that contains syntactically correct XML-formatted text

**XML\_Editor** An editor, which has special features allowing XML tag completion, XML validation, etc.

**XML\_Element** An XML structure that begins with jtagj, contains 'content', and ends with j/tagj. For example, "jdatej2009j/datej" is an XML element establishing the date as 2009. The allowed 'content' is specified in the PDS4 Information Model, which is propagated to the PDS4 Data Dictionary.

**XML\_Label** A label written using XML

**XML\_Root\_Tag** The first (and highest-level) XML tag in an XML document

**XML\_Schema** The definition of an XML document, specifying required and optional XML elements, their order, and parent-child relationships.

**XML\_Tag** Same as tag.

**XML\_Template** A text file which serves as a pattern for constructing XML documents