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

$$\boldsymbol{i}_x A cos(\omega t - \boldsymbol{kr} - \varphi)$$

where there are five explicit attributes: polarization $\boldsymbol{i}_x$, amplitude A, frequency ω, wave vector $\boldsymbol{k}$ (which defines the propagation direction), and phase φ. 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Product			
Subclass	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			
Attribute	none			
Inherited Attribute	none			
Association	has_identification_area.Pro...	1	Identification_Area	
Inherited Association	none			
Referenced from	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.

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

	Entity	Card	Value/Class
Hierarchy	Product . Product_Observational		
Subclass	none		
Attribute	none		
Inherited Attribute	none		
Association	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
Inherited Association	has_identification_area.Pro...	1	Identification_Area
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Product . Product_Update			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	product_data_object.Product... reference_list.Product_Update	1 0..1	Update Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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_1D
+ + + + 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
```

Figure 3: Tagged Digital Object UML Class Diagram

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

The class hierarchy above includes 38 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array			
Subclass	Array_1D Array_2D Array_3D			
Attribute	axes.Array axis_index_order.Array description.Array offset.Array	1 1 0..1 1	 Last Index Fastest 	
Inherited Attribute	local_identifier.Byte_Stream name.Byte_Stream	0..1 0..1	 	
Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Axis_Array.Array has_Element_Array.Array local_internal_reference.Array	0..1 0..1 1 0..* 1 0..*	Special_Constants Object_Statistics Digital_Object Axis_Array Element_Array Local_Internal_Reference	
Inherited Association	none			
Referenced from	none			

9.2 Array_1D

Root Class: Tagged_Digital_Object
Role: Concrete
Class Description: The Array 1D class is the parent class for all one dimensional array based classes.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_1D		
Subclass	none		
Attribute	axes.Array_1D	1	1
Inherited Attribute	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
Association	has_Axis_Array.Array_1D	1	Axis_Array
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array	0..1 0..1 1 1 0..*	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.3 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_2D		
Subclass	Array_2D_Image Array_2D_Map Array_2D_Spectrum		
Attribute	axes.Array_2D	1	2
Inherited Attribute	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
Association	has_Axis_Array.Array_2D	2	Axis_Array
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array	0..1 0..1 1 1 0..*	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.4 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_2D . . . . Array_2D_Image		
Subclass	none		
Attribute	none		
Inherited Attribute	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
Association	has_Display_2d_Image.Array_...	0..1	Display_2D_Image
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array has_Axis_Array.Array_2D	0..1 0..1 1 1 0..* 2	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen Axis_Array
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.5 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_2D . . . . Array_2D_Map		
Subclass	none		
Attribute	none		
Inherited Attribute	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
Association	has_Display_2d_Image.Array_...	0..1	Display_2D_Image
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array has_Axis_Array.Array_2D	0..1 0..1 1 1 0..* 2	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen Axis_Array
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.6 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_2D . . . . Array_2D_Spectrum		
Subclass	none		
Attribute	none		
Inherited Attribute	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
Association	has_Display_2d_Image.Array_...	0..1	Display_2D_Image
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array has_Axis_Array.Array_2D	0..1 0..1 1 1 0..* 2	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen Axis_Array
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.7 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_3D		
Subclass	Array_3D_Image Array_3D_Movie Array_3D_Spectrum		
Attribute	axes.Array_3D	1	3
Inherited Attribute	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
Association	has_Axis_Array.Array_3D	3	Axis_Array
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array	0..1 0..1 1 1 0..*	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.8 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_3D . . . . Array_3D_Image		
Subclass	none		
Attribute	none		
Inherited Attribute	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
Association	none		
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array has_Axis_Array.Array_3D	0..1 0..1 1 1 0..* 3	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen Axis_Array
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.9 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_3D . . . . Array_3D_Movie		
Subclass	none		
Attribute	none		
Inherited Attribute	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
Association	none		
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array has_Axis_Array.Array_3D	0..1 0..1 1 1 0..* 3	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen Axis_Array
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.10 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Array . . . Array_3D . . . . Array_3D_Spectrum		
Subclass	none		
Attribute	none		
Inherited Attribute	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
Association	none		
Inherited Association	associated_Special_Constant... associated_Statistics.Array data_object.Array has_Element_Array.Array local_internal_reference.Array has_Axis_Array.Array_3D	0..1 0..1 1 1 0..* 3	Special_Constants Object_Statistics Digital_Object Element_Array Local_Internal_Referen Axis_Array
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.11 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Child . Axis_Array			
Subclass	none			
Attribute	axis_name.Axis_Array elements.Axis_Array local_identifier.Axis_Array sequence_number.Axis_Array unit.Axis_Array *Deprecated*	1 1 0..1 1 0..1		
Inherited Attribute	none			
Association	has_Band_Bin_Set.Axis_Array	0..1	Band_Bin_Set	
Inherited Association	none			
Referenced from	Array Array_1D Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum			

9.12 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 qube.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Band_Bin			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Band_Bin_Set			

9.13 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 qube.

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

9.14 Byte_Stream

Root Class: Tagged_Digital_Object
Role: Abstract
Class Description: The Byte Stream class defines a stream of bytes.

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

9.15 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Child . Element_Array			
Subclass	none			
Attribute	data_type.Element_Array	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	
	scaling_factor.Element_Array	0..1		
	unit.Element_Array	0..1		
	value_offset.Element_Array	0..1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Array Array_1D Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum			

9.16 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.

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

9.17 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Encoded_Byte_Stream . . . Encoded_Header			
Subclass	none			
Attribute	encoding_standard_id.Encode...	1	TIFF	R
Inherited Attribute	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		
Association	none			
Inherited Association	data_object.Encoded_Byte_St...	1	Digital_Object	
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

9.18 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.

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

9.19 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Child . Field . . Field_Binary		
Subclass	none		
Attribute	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

9.20 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.

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

9.21 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Child . Field . . Field_Character		
Subclass	none		
Attribute	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	
Inherited Attribute	field_number.Field	0..1	
Association	associated_Special_Constant...	0..1	Special_Constants
	associated_Statistics.Field...	0..1	Field_Statistics
Inherited Association	none		
Referenced from	Group_Field_Character Record_Character		

9.22 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Child . Field . . Field_Delimited		
Subclass	none		
Attribute	data_type.Field_Delimited	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_Delimited	0..1	
	field_format.Field_Delimited	0..1	
	maximum_field_length.Field_...	0..1	
	name.Field_Delimited	1	
	scaling_factor.Field_Delimited	0..1	
	unit.Field_Delimited	0..1	
	value_offset.Field_Delimited	0..1	
Inherited Attribute	field_number.Field	0..1	
Association	associated_Special_Constant...	0..1	Special_Constants
	associated_Statistics.Field...	0..1	Field_Statistics
Inherited Association	none		
Referenced from	Group_Field_Delimited Record_Delimited		

9.23 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.

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

9.24 Group_Field_Binary

Root Class: Tagged_Digital_Child
Role: Concrete
Class Description: The Group_Field_Binary class allows a group of table fields.

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

9.25 Group_Field_Character

Root Class: Tagged_Digital_Child
Role: Concrete
Class Description: The Group_Field_Character class allows a group of table fields.

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

9.26 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**
Hierarchy	Tagged_Digital_Child . Group . . Group_Field_Delimited			
Subclass	none			
Attribute	none			
Inherited Attribute	fields.Group group_number.Group groups.Group repetitions.Group	1 0..1 1 1		
Association	has_Delimited_Field_Grouped...	1..*	Field_Delimited Group_Field_Delimited	
Inherited Association	none			
Referenced from	Group_Field_Delimited Record_Delimited			

9.27 Header

Root Class: Tagged_Digital_Object
Role: Concrete
Class Description: The Header class describes a data object header.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Header		
Subclass	none		
Attribute	object_length.Header parsing_standard_id.Header	1 1	 7-Bit ASCII Text CDF 3.4 ISTP/IACG FITS 3.0 ISIS2 ISIS3 PDS DSV 1 PDS ODL 2 PDS3 Pre-PDS3 UTF-8 Text VICAR1 VICAR2
Inherited Attribute	local_identifier.Byte_Stream name.Byte_Stream description.Parsable_Byte_S... offset.Parsable_Byte_Stream	0..1 0..1 0..1 1	
Association	none		
Inherited Association	data_object.Parsable_Byte_S...	1	Digital_Object
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental		

9.28 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.

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

9.29 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.

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

9.30 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.

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

9.31 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.

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

9.32 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.

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

9.33 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.

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

9.34 Stream_Text

Root Class: Tagged_Digital_Object
Role: Concrete
Class Description: The Stream text class defines a text object.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Stream_Text		
Subclass	Checksum_Manifest		
Attribute	record_delimiter.Stream_Text	1	carriage-return line-fee
Inherited Attribute	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	
Association	none		
Inherited Association	data_object.Parsable_Byte_S...	1	Digital_Object
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental File_Area_Text		

9.35 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.

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

9.36 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	I
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Table_Base . . . Table_Binary			
Subclass	none			
Attribute	record_delimiter.Table_Binary	0..1		
Inherited Attribute	local_identifier.Byte_Stream name.Byte_Stream description.Table_Base offset.Table_Base records.Table_Base	0..1 0..1 0..1 1 1		
Association	has_Record.Table_Binary uniformly_sampled.Table_Binary	1 0..1	Record_Binary Uniformly_Sampled	
Inherited Association	data_object.Table_Base	1	Digital_Object	
Referenced from	File_Area_Browse File_Area_Observational File_Area_Observational_Supplemental			

9.37 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.

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

9.38 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.

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Table_Delimited		
Subclass	Inventory		
Attribute	field_delimiter.Table_Delim...	1	comma horizontal tab semicolon vertical bar
	parsing_standard_id.Table_D...	1	PDS DSV 1
	record_delimiter.Table_Deli...	1	carriage-return line-fee
	records.Table_Delimited	1	
Inherited Attribute	local_identifier.Byte_Stream	0..1	
	name.Byte_Stream	0..1	
	description.Parsable_Byte_S...	0..1	
	object_length.Parsable_Byte...	0..1	
	offset.Parsable_Byte_Stream	1	
Association	has_delimited_record.Table_...	1	Record_Delimited
	uniformly_sampled.Table_Del...	0..1	Uniformly_Sampled
Inherited Association	data_object.Parsable_Byte_S...	1	Digital_Object
Referenced from	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
+ + Discipline_Facets
+ + External_Reference
+ + File_Area
+ + + File_Area_Observational
+ + + File_Area_Observational_Supplemental
+ + + File_Area_SPICE_Kernel
+ + + File_Area_Text
+ + Group_Facet1
+ + Group_Facet2
+ + Identification_Area
+ + Internal_Reference
+ + Investigation_Area
+ + Mission_Area
+ + Modification_Detail
+ + Modification_History
+ + Primary_Result_Summary
+ + Reference_List
+ + Science_Facets
+ + 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 44 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**
Hierarchy	Product_Components . Alias			
Subclass	none			
Attribute	alternate_id.Alias alternate_title.Alias comment.Alias	0..1 0..1 0..1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Alias_List			

10.2 Alias_List

Root Class: Product_Components
Role: Concrete
Class Description: The Alias_List class provides a list of paired alternate

Figure 4: Product UML Class Diagram

names and identifications for this product in this or some other archive or data system.

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

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Citation_Information			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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	In
Hierarchy	Product_Components . Context_Area			
Subclass	Observation_Area			
Attribute	comment.Context_Area	0..1		
Inherited Attribute	none			
Association	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	
Inherited Association	none			
Referenced from	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
Hierarchy	Product_Components . Discipline_Area			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Context_Area Observation_Area Product_Context			

10.6 Discipline_Facets

Root Class: Product_Components
Role: Concrete
Class Description: The Discipline_Facets class contains the discipline-related search facets. It is required and may not be repeated. Note

that Science_Facets was modeled with Discipline_Facets as a component and Discipline_Facets was modeled with Group_Facet1 and Group_Facet2 as components. This dependency hierarchy was flattened and only Science_Facets exists in the schema.

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Discipline_Facets			
Subclass	none			
Attribute	discipline_name.Discipline_...	1	Atmospheres Fields Flux Measurements Imaging Particles Ring-Moon Systems Small Bodies Spectroscopy	
Inherited Attribute	none			
Association	has_Group_Facet1.Discipline... has_Group_Facet2.Discipline...	0..* 0..*	Group_Facet1 Group_Facet2	
Inherited Association	none			
Referenced from	Science_Facets			

10.7 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.

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

10.8 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.

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

10.9 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Field_Statistics			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Field_Statistics	1	Conceptual_Object	
Inherited Association	none			
Referenced from	Field_Binary Field_Character Field_Delimited			

10.10 File

Root Class: Tagged_Digital_Object
Role: Concrete
Class Description: The File class consists of attributes that describe a file in a data store.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Object . File			
Subclass	Document_File			
Attribute	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		
Inherited Attribute	none			
Association	data_object.File	1	Digital_Object	
Inherited Association	none			
Referenced from	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			

10.11 File_Area

Root Class: Product_Components
Role: Concrete
Class Description: The File_Area class defines a File and its component data objects.

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . File_Area			
Subclass	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			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

10.12 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . File_Area . . File_Area_Observational			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	has_File.File_Area_Observat... has_tagged_data_object.File...	1 1..*	File Array_1D 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	
Inherited Association	none			
Referenced from	Product_Observational			

10.13 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.

	Entity	Card	Value/Class
Hierarchy	Product_Components . File_Area . . File_Area_Observational_Supplemental		
Subclass	none		
Attribute	none		
Inherited Attribute	none		
Association	has_File.File_Area_Observat... has_tagged_data_object.File...	1 1..*	File Array_1D 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_Strea Encoded_Header Encoded_Image Header Parsable_Byte_Strea Stream_Text Table_Binary Table_Character Table_Delimited
Inherited Association	none		
Referenced from	Product_Observational		

10.14 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.

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

10.15 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.

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

10.16 Group_Facet1

Root Class: Product_Components
Role: Concrete
Class Description: The Group_Facet1 class contains a single facet restricted according to the value of discipline_name. It also contains zero or more subfacets restricted according to the value of the facet. Note that Science_Facets was modeled with Discipline_Facets as a component and Discipline_Facets was modeled with Group_Facet1 and Group_Facet2 as components. This dependency hierarchy was flattened and only Science_Facets exists in the schema.

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Group_Facet1			
Subclass	none			
Attribute	facet1.Group_Facet1	0..1	2D Color Color Movie Dust Study Dynamical Properties Electric Electrons Gas Study Grayscale Historical Reference Ions Lightcurve Linear Magnetic Meteoritics Meteorology Movie Neutrals Photometry Physical Properties Polarimetry Production Rates Ring Compositional Map Ring Occultation Profile Ring Thermal Map Satellite Astrometry Shape Model Spectral Cube Spectral Image Structure Tabulated Taxonomy	
	subfacet1.Group_Facet1	0..*		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Discipline_Facets			

10.17 Group_Facet2

Root Class: Product_Components
Role: Concrete
Class Description: The Group_Facet2 class contains a single facet restricted according to the value of discipline_name. It also contains zero or more subfacets restricted according to the value of the facet. Note that Science_Facets was modeled with Discipline_Facets as a component and Discipline_Facets was modeled with Group_Facet1 and Group_Facet2 as components. This dependency hierarchy was flattened and only Science_Facets exists in the schema.

	Entity	**Card**	**Value/Class**	**Ind**
Hierarchy	Product_Components . Group_Facet2			
Subclass	none			
Attribute	facet2.Group_Facet2 subfacet2.Group_Facet2	0..1 0..*	Background Cosmic Ray Energetic Plasma Solar Energetic Waves	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Discipline_Facets			

10.18 Identification_Area

Root Class: Product_Components
Role: Concrete
Class Description: The identification area consists of attributes that identify and name an object.

	Entity	Card	Value/Class
Hierarchy	Product_Components . Identification_Area		
Subclass	none		
Attribute	information_model_version.I...	1	1.1.0.1
	logical_identifier.Identifi...	1	
	product_class.Identificatio...	1	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_PD 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	
Inherited Attribute	none		
Association	alias_list.Identification_Area	0..1	Alias_List
	citation_information.Identi...	0..1	Citation_Information
	modification_history.Identi...	0..1	Modification_History
Inherited Association	none		
Referenced from	Product Product_AIP Product_Attribute_Definition Product_Browse Product_Bundle Product_Class_Definition Product_Collection Product_Context Product_DIP Product_DIP_Deep_Archive		

10.19 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.

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

10.20 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).

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

10.21 Mission_Area

Root Class: Product_Components
Role: Concrete
Class Description: The mission area allows the insertion of mission specific metadata.

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

10.22 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.

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

10.23 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.

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

10.24 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Object_Statistics			
Subclass	none			
Attribute	bit_mask.Object_Statistics description.Object_Statistics local_identifier.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		
Inherited Attribute	none			
Association	data_object.Object_Statistics	1	Conceptual_Object	
Inherited Association	none			
Referenced from	Array Array_1D Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum			

10.25 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
Hierarchy	Product_Components . Context_Area . . Observation_Area			
Subclass	none			
Attribute	none			
Inherited Attribute	comment.Context_Area	0..1		
Association	has_investigation_area.Obse... has_observing_system.Observ... has_target_identification.O... has_time_coordinates.Observ...	1..* 1..* 1..* 1	Investigation_Area Observing_System Target_Identification Time_Coordinates	R R R R
Inherited Association	has_discipline_area.Context... has_mission_area.Context_Area has_primary_result_descript...	0..1 0..1 0..1	Discipline_Area Mission_Area Primary_Result_Summary	
Referenced from	Product_Observational			

10.26 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
Hierarchy	Tagged_NonDigital_Object . TNDO_Context . . Observing_System		
Subclass	none		
Attribute	description.Observing_System name.Observing_System	0..1 0..1	
Inherited Attribute	none		
Association	data_object.Observing_System observing_system_component....	1 1..*	Conceptual_Object Physical_Object Observing_System_Componen
Inherited Association	none		
Referenced from	Context_Area Observation_Area		

10.27 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.

	Entity	Card	Value/Class	In
Hierarchy	Tagged_NonDigital_Child . Observing_System_Component			
Subclass	none			
Attribute	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	
Inherited Attribute	none			
Association	external_reference.Observin... internal_reference.Observin...	0..* 0..1	External_Reference Internal_Reference	
Inherited Association	none			
Referenced from	Observing_System			

10.28 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

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Primary_Result_Summary			
Subclass	none			
Attribute	data_regime.Primary_Result_...	0..*	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	
	description.Primary_Result_...	0..1		
	processing_level.Primary_Re...	1	Calibrated Derived Partially Processed Raw Telemetry	
	processing_level_id.Primary...	0..1	Calibrated Derived Partially Processed Raw Telemetry	
	purpose.Primary_Result_Summary	1	Calibration Checkout Engineering Navigation Science	
	type.Primary_Result_Summary...	0..1	Altimetry Astrometry Count E/B-Field Vectors Gravity Model Image Lightcurves Map Meteorology Null Result Occultation Photometry Physical Parameters Polarimetry	

10.29 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**
Hierarchy	Product_Components			
Subclass	Alias Alias_List Bundle_Member_Entry Citation_Information Context_Area Discipline_Area Discipline_Facets Document_Format_Set External_Reference File_Area Group_Facet1 Group_Facet2 Identification_Area Internal_Reference Investigation_Area Mission_Area Modification_Detail Modification_History Primary_Result_Summary Radio_Occultation Radio_Occultation_Support Reference_List Rings_Supplement Science_Facets Stellar_Occultation Target_Identification Telemetry_Parameters Time_Coordinates Update_Entry			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

10.30 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Reference_List			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	external_reference.Referenc... internal_reference.Referenc...	0..* 0..*	External_Reference Internal_Reference	
Inherited Association	none			
Referenced from	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			

10.31 Science_Facets

Root Class: Product_Components
Role: Concrete
Class Description: The Science_Facets class contains the science-related

search facets. It is optional and may be repeated if an product has facets related to, for example, two different disciplines (as defined by the discipline_name facet). Note that Science_Facets was modeled with Discipline_Facets as a component and Discipline_Facets was modeled with Group_Facet1 and Group_Facet2 as components. This dependency hierarchy was flattened and only Science_Facets exists in the schema.

	Entity	**Card**	**Value/Class**	**Ind**
Hierarchy	Product_Components . Science_Facets			
Subclass	none			
Attribute	domain.Science_Facets	0..*	Atmosphere Heliosphere Interior Interstellar Ionosphere Magnetosphere Surface	
	wavelength_range.Science_Fa...	0..*	Far Infrared Gamma Ray Infrared Microwave Millimeter Near Infrared Radio Submillimeter Ultraviolet Visible X-ray	
Inherited Attribute	none			
Association	has_Discipline_Facets.Scien...	1	Discipline_Facets	
Inherited Association	none			
Referenced from	Primary_Result_Summary			

10.32 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Child . Special_Constants			
Subclass	none			
Attribute	error_constant.Special_Cons...	0..1		
	high_instrument_saturation....	0..1	-32765 255 3 65534 FF7FFFFE FFFCFFFF	
	high_representation_saturat...	0..1	-32764 255 4 65535 FF7FFFFF FFFBFFFF	
	invalid_constant.Special_Co...	0..1		
	low_instrument_saturation.S...	0..1	-32766 0 2 FF7FFFFD FFFDFFFF	
	low_representation_saturati...	0..1	-32767 1 16#FF7FFFFC# 16#FFFEFFFF#	
	missing_constant.Special_Co...	0..1		
	not_applicable_constant.Spe...	0..1		
	saturated_constant.Special_...	0..1		
	unknown_constant.Special_Co...	0..1		
	valid_maximum.Special_Const...	0..1	254 32767 65522	
	valid_minimum.Special_Const...	0..1	-32752 1 3 5 FF7FFFFA FFEFFFFF	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Array Array_1D Array_2D Array_2D_Image Array_2D_Map Array_2D_Spectrum Array_3D Array_3D_Image Array_3D_Movie Array_3D_Spectrum			

10.33 Target_Identification

Root Class: Product_Components
Role: Concrete
Class Description: The Target_Identification class provides detailed target identification information.

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

10.34 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**
Hierarchy	Product_Components . Time_Coordinates			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Context_Area Observation_Area			

10.35 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
Hierarchy	Tagged_Digital_Child . Uniformly_Sampled			
Subclass	none			
Attribute	first_sampling_parameter_va... last_sampling_parameter_val... sampling_parameter_interval... sampling_parameter_name.Uni... sampling_parameter_scale.Un... sampling_parameter_unit.Uni...	1 1 1 1 0..1 1	 Exponential Linear Logarithmic 	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Inventory Table_Binary Table_Character Table_Delimited Transfer_Manifest			

10.36 Update

Root Class: Tagged_NonDigital_Object
Role: Concrete
Class Description: The Update class consists of update information.

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

10.37 Update_Entry

Root Class: Product_Components
Role: Concrete

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

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

10.38 Vector

Root Class: Tagged_NonDigital_Object
Role: Concrete
Class Description: The Vector class provides the components of either a velocity or position vector.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector			
Subclass	none			
Attribute	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	
Inherited Attribute	none			
Association	data_object.Vector vector_component.Vector	1 1..*	Conceptual_Object Vector_Component	
Inherited Association	none			
Referenced from	Geometry			

10.39 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**
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3			
Subclass	Vector_Cartesian_3_Acceleration Vector_Cartesian_3_Pointing Vector_Cartesian_3_Position Vector_Cartesian_3_Velocity			
Attribute	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	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

10.40 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
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3 . . . Vector_Cartesian_3_Acceleration			
Subclass	none			
Attribute	none			
Inherited Attribute	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	
Association	none			
Inherited Association	none			
Referenced from	none			

10.41 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
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3 . . . Vector_Cartesian_3_Pointing			
Subclass	none			
Attribute	none			
Inherited Attribute	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	
Association	none			
Inherited Association	none			
Referenced from	none			

10.42 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3 . . . Vector_Cartesian_3_Position			
Subclass	none			
Attribute	none			
Inherited Attribute	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	
Association	none			
Inherited Association	none			
Referenced from	none			

10.43 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Vector_Cartesian_3 . . . Vector_Cartesian_3_Velocity			
Subclass	none			
Attribute	none			
Inherited Attribute	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	
Association	none			
Inherited Association	none			
Referenced from	none			

10.44 Vector_Component

Root Class: Tagged_NonDigital_Child
Role: Concrete
Class Description: The Vector_Component class provides a component of a vector.

	Entity	**Card**	**Value/Class**	**Ind**
Hierarchy	Tagged_NonDigital_Child . Vector_Component			
Subclass	none			
Attribute	description.Vector_Component name.Vector_Component sequence_number.Vector_Comp... unit.Vector_Component value.Vector_Component	0..1 0..1 1 0..1 1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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**
Hierarchy	Product . Product_Browse			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	file_area.Product_Browse reference_list.Product_Browse	1..* 0..1	File_Area_Browse Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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**
Hierarchy	Product . Product_Document			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	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	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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
Hierarchy	Product . Product_SPICE_Kernel			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	context_area.Product_SPICE_...	1	Context_Area	
	file_area.Product_SPICE_Kernel	1	File_Area_SPICE_Kernel	
	reference_list.Product_SPIC...	0..1	Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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
Hierarchy	Product . Product_Thumbnail			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	file_area.Product_Thumbnail	1	File_Area_Encoded_Image	
	reference_list.Product_Thum...	0..1	Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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
Hierarchy	Product . Product_XML_Schema			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	file_area.Product_XML_Schema reference_list.Product_XML_...	1..* 0..1	File_Area_XML_Schema Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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
Hierarchy	Product . Product_Zipped			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	file.Product_Zipped has_zip.Product_Zipped internal_reference.Product_...	1 1 1..*	File Zip Internal_Reference	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Document			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Document	1	Digital_Object	
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	I
Hierarchy	Tagged_Digital_Object . File . . Document_File			
Subclass	none			
Attribute	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	
Inherited Attribute	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		
Association	none			
Inherited Association	data_object.File	1	Digital_Object	
Referenced from	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.

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

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

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Encoded_Byte_Stream . . . Encoded_Binary		
Subclass	none		
Attribute	encoding_standard_id.Encode...	1	CCSDS Communicatio
Inherited Attribute	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	
Association	none		
Inherited Association	data_object.Encoded_Byte_St...	1	Digital_Object
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Encoded_Byte_Stream . . . Encoded_Image			
Subclass	none			
Attribute	encoding_standard_id.Encode...	1	GIF J2C JPEG PDF PDF/A PNG TIFF	R
Inherited Attribute	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		
Association	none			
Inherited Association	data_object.Encoded_Byte_St...	1	Digital_Object	
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . File_Area . . File_Area_Browse			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	has_File.File_Area_Browse has_tagged_data_object.File...	1 1..*	File Array_1D 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	
Inherited Association	none			
Referenced from	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.

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

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . XML_Schema		
Subclass	none		
Attribute	ldd_version_id.XML_Schema parsing_standard_id.XML_Schema	0..1 1	 Schematron ISO/IEC 1975 XML Schema Version 1.1
Inherited Attribute	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	
Association	none		
Inherited Association	data_object.Parsable_Byte_S...	1	Digital_Object
Referenced from	File_Area_XML_Schema		

12.11 Zip

Root Class: Tagged_NonDigital_Object
Role: Concrete
Class Description: The Zip class describes a zip file.

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

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

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

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

	Entity	Card	Value/Class
Hierarchy	Tagged_NonDigital_Object . TNDO_Context . . Instrument		
Subclass	none		
Attribute	description.Instrument	1	
	model_id.Instrument	0..1	
	naif_instrument_id.Instrument	0..1	
	name.Instrument	0..1	
	serial_number.Instrument	0..1	
	type.Instrument	1..*	Accelerometer Alpha Particle Detector Alpha Particle Xray Spectrome 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 Spec 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 Robotic Arm Spectrograph Imager

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
Hierarchy	Tagged_NonDigital_Object . TNDO_Context . . Instrument_Host			
Subclass	none			
Attribute	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 Earth-based Lander Rover Spacecraft 	
Inherited Attribute	none			
Association	data_object.Instrument_Host	1	Physical_Object	
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Context . . Investigation			
Subclass	none			
Attribute	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	
Inherited Attribute	none			
Association	data_object.Investigation	1	Conceptual_Object	
Inherited Association	none			
Referenced from	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.

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

14.6 Resource

Root Class: Tagged_NonDigital_Object
Role: Concrete
Class Description: The Resource class provides a description of a web resource.

	Entity	Card	Value/Class	In
Hierarchy	Tagged_NonDigital_Object . TNDO_Context . . Resource			
Subclass	none			
Attribute	description.Resource name.Resource type.Resource url.Resource	1 0..1 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	
Inherited Attribute	none			
Association	data_object.Resource	1	Conceptual_Object	
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Context . . Target			
Subclass	none			
Attribute	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	
Inherited Attribute	none			
Association	data_object.Target	1	Physical_Object	
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class
Hierarchy	Tagged_NonDigital_Object . TNDO_Context . . Telescope		
Subclass	none		
Attribute	altitude.Telescope	1	
	aperture.Telescope	1	
	coordinate_source.Telescope	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	
Inherited Attribute	none		
Association	none		
Inherited Association	none		
Referenced from	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**
Hierarchy	Product . Product_Bundle			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	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	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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**
Hierarchy	Product . Product_Collection			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	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	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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.

	Entity	**Card**	**Value/Class**	**Ind**
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Bundle			
Subclass	none			
Attribute	bundle_type.Bundle description.Bundle	1 0..1	Archive Supplemental	
Inherited Attribute	none			
Association	data_object.Bundle	1	Conceptual_Object	
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class
Hierarchy	Product_Components . Bundle_Member_Entry		
Subclass	none		
Attribute	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
Inherited Attribute	none		
Association	none		
Inherited Association	none		
Referenced from	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.

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

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

	Entity	Card	Value/Class
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Table_Delimited . . . . Inventory		
Subclass	none		
Attribute	reference_type.Inventory	1	inventory_has_member_produc
Inherited Attribute	local_identifier.Byte_Stream	0..1	
	name.Byte_Stream	0..1	
	description.Parsable_Byte_S...	0..1	
	object_length.Parsable_Byte...	0..1	
	offset.Parsable_Byte_Stream	1	
	field_delimiter.Table_Delim...	1	comma horizontal tab semicolon vertical bar
	parsing_standard_id.Table_D...	1	PDS DSV 1
	record_delimiter.Table_Deli...	1	carriage-return line-feed
	records.Table_Delimited	1	
Association	none		
Inherited Association	data_object.Parsable_Byte_S...	1	Digital_Object
	has_delimited_record.Table_...	1	Record_Delimited
	uniformly_sampled.Table_Del...	0..1	Uniformly_Sampled
Referenced from	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
Hierarchy	Product . Product_AIP		
Subclass	none		
Attribute	none		
Inherited Attribute	none		
Association	has_Information_Package_Com... product_data_object.Product... reference_list.Product_AIP	1..* 1 0..1	Information_Package_Compo Archival_Information_Packag Reference_List
Inherited Association	has_identification_area.Pro...	1	Identification_Area
Referenced from	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
Hierarchy	Product . Product_Attribute_Definition			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	product_data_object.Product... reference_list.Product_Attr...	1 0..1	DD_Attribute_Full Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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
Hierarchy	Product . Product_Class_Definition			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	product_data_object.Product... reference_list.Product_Clas...	1 0..1	DD_Class_Full Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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
Hierarchy	Product . Product_DIP		
Subclass	none		
Attribute	none		
Inherited Attribute	none		
Association	has_Information_Package_Com... product_data_object.Product... reference_list.Product_DIP	1..* 1 0..1	Information_Package_Compo Dissemination_Information_P Reference_List
Inherited Association	has_identification_area.Pro...	1	Identification_Area
Referenced from	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
Hierarchy	Product . Product_DIP_Deep_Archive		
Subclass	none		
Attribute	none		
Inherited Attribute	none		
Association	has_Information_Package_Com... product_data_object.Product... reference_list.Product_DIP_...	1..* 1 0..1	Information_Package_Compo DIP_Deep_Archive Reference_List
Inherited Association	has_identification_area.Pro...	1	Identification_Area
Referenced from	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
Hierarchy	Product . Product_Data_Set_PDS3			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	product_data_object.Product... reference_list.Product_Data...	1 0..1	Data_Set_PDS3 Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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.

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

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

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

	Entity	Card	Value/Class	Ind
Hierarchy	Product . Product_Mission_PDS3			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	product_data_object.Product... reference_list.Product_Miss...	1 0..1	Mission_PDS3 Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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
Hierarchy	Product . Product_Proxy_PDS3			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	file_area.Product_Proxy_PDS3 reference_list.Product_Prox...	1..* 0..1	File_Area_Binary Reference_List	
Inherited Association	has_identification_area.Pro...	1	Identification_Area	
Referenced from	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
Hierarchy	Product . Product_SIP		
Subclass	none		
Attribute	none		
Inherited Attribute	none		
Association	has_Information_Package_Com... product_data_object.Product... reference_list.Product_SIP	1..* 1 0..1	Information_Package_Compo Submission_Information_Pacl Reference_List
Inherited Association	has_identification_area.Pro...	1	Identification_Area
Referenced from	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.

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

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

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

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

17.17 Product_Volume_PDS3

Root Class: Product
Role: Concrete
Class Description: A Product Volume PDS3 product captures the PDS3 volume information.

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

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

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

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

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Stream_Text . . . . Checksum_Manifest			
Subclass	none			
Attribute	parsing_standard_id.Checksu...	1	MD5Deep 4.n	R
Inherited Attribute	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	
Association	none			
Inherited Association	data_object.Parsable_Byte_S...	1	Digital_Object	
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Object . Conceptual_Object			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Child . DD_Association			
Subclass	none			
Attribute	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	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Child . DD_Association_External			
Subclass	none			
Attribute	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	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . DD_Attribute			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	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	
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	In
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . DD_Attribute_Full			
Subclass	none			
Attribute	attribute_concept.DD_Attrib...	1	Address Angle Attribute Bit Checksum Collection Constant Cosine Count DOI Delimiter Description Deviation Direction Distance 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
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . DD_Class			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	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	
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . DD_Class_Full			
Subclass	none			
Attribute	abstract_flag.DD_Class_Full comment.DD_Class_Full definition.DD_Class_Full local_identifier.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	
Inherited Attribute	none			
Association	data_object.DD_Class_Full dd_association.DD_Class_Full terminological_entry.DD_Cla...	1 0..* 0..*	Conceptual_Object DD_Association Terminological_Entry	
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Child . DD_Permissible_Value			
Subclass	none			
Attribute	value.DD_Permissible_Value value_meaning.DD_Permissibl...	1 1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Child . DD_Permissible_Value_Full			
Subclass	none			
Attribute	value.DD_Permissible_Value_... value_begin_date.DD_Permiss... value_end_date.DD_Permissib... value_meaning.DD_Permissibl...	1 1 1 0..1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class
Hierarchy	Tagged_NonDigital_Child . DD_Value_Domain		
Subclass	none		
Attribute	enumeration_flag.DD_Value_D...	1	
	formation_rule.DD_Value_Domain	0..1	
	maximum_characters.DD_Value...	0..1	
	maximum_value.DD_Value_Domain	0..1	
	minimum_characters.DD_Value...	0..1	
	minimum_value.DD_Value_Domain	0..1	
	pattern.DD_Value_Domain	0..1	
	specified_unit_id.DD_Value_...	0..1	
	unit_of_measure_type.DD_Val...	0..1	Units_of_Acceleration
			Units_of_Amount_Of_Subs
			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_Le
			Units_of_Pressure
			Units_of_Radiance
			Units_of_Rates
			Units_of_Solid_Angle
			Units_of_Spectral_Irradian
			Units_of_Spectral_Radianc
			Units_of_Storage
			Units_of_Temperature
			Units_of_Time
			Units_of_Velocity
			Units_of_Voltage
			Units_of_Volume
			Units_of_Wavenumber
	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_N
			ASCII_Integer
			ASCII_LID
			ASCII_LIDVID

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.

	Entity	Card	Value/Class
Hierarchy	Tagged_NonDigital_Child . DD_Value_Domain_Full		
Subclass	none		
Attribute	conceptual_domain.DD_Value_...	1	Boolean Integer Name Numeric Real Short_String Text Time Type Unknown
	enumeration_flag.DD_Value_D...	1	
	formation_rule.DD_Value_Dom...	0..1	
	maximum_characters.DD_Value...	0..1	
	maximum_value.DD_Value_Doma...	0..1	
	minimum_characters.DD_Value...	0..1	
	minimum_value.DD_Value_Doma...	0..1	
	pattern.DD_Value_Domain_Full	0..1	
	specified_unit_id.DD_Value_...	0..1	
	unit_of_measure_type.DD_Val...	0..1	Units_of_Amount_Of_Subs 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_Le Units_of_Pressure Units_of_Radiance Units_of_Rates Units_of_Solid_Angle Units_of_Spectral_Irradian Units_of_Spectral_Radianc Units_of_Storage Units_of_Temperature Units_of_Time Units_of_Velocity Units_of_Voltage Units_of_Volume Units_of_Wavenumber
	value_data_type.DD_Value_Do...	1	ASCII_AnyURI ASCII_Boolean ASCII_DOI ASCII_Date_DOY ASCII_Date_Time ASCII_Date_Time_DOY

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**
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package . . . DIP_Deep_Archive			
Subclass	none			
Attribute	none			
Inherited Attribute	description.Information_Pac...	1		
Association	none			
Inherited Association	none			
Referenced from	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**
Hierarchy	Data_Object			
Subclass	Conceptual_Object Digital_Object Physical_Object			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class
Hierarchy	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Data_Set_PDS3		
Subclass	none		
Attribute	abstract_desc.Data_Set_PDS3	1	
	archive_status.Data_Set_PDS3	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
	citation_text.Data_Set_PDS3	1	
	confidence_level_note.Data_...	1	
	data_set_desc.Data_Set_PDS3	1	
	data_set_id.Data_Set_PDS3	1	
	data_set_name.Data_Set_PDS3	1	
	data_set_release_date.Data_...	1	
	data_set_terse_desc.Data_Se...	1	
	producer_full_name.Data_Set...	1	
	start_date_time.Data_Set_PDS3	1	
	stop_date_time.Data_Set_PDS3	1	
Inherited Attribute	none		
Association	data_object.Data_Set_PDS3	1	Conceptual_Object Physical_Object
	nssdc.Data_Set_PDS3	0..*	NSSDC
Inherited Association	none		
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Object . Digital_Object			
Subclass	none			
Attribute	bit_string.Digital_Object	1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	Array Array_1D 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**
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package . . . Dissemination_Information_Package			
Subclass	none			
Attribute	none			
Inherited Attribute	description.Information_Pac...	1		
Association	none			
Inherited Association	none			
Referenced from	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**
Hierarchy	Product_Components . External_Reference . . External_Reference_Extended			
Subclass	none			
Attribute	name.External_Reference_Ext... url.External_Reference_Exte...	0..1 0..1		
Inherited Attribute	description.External_Reference doi.External_Reference reference_text.External_Ref...	0..1 0..1 1		
Association	none			
Inherited Association	none			
Referenced from	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**
Hierarchy	Product_Components . File_Area . . File_Area_Binary			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	has_File.File_Area_Binary has_tagged_data_object.File...	1 0..*	File Encoded_Binary	
Inherited Association	none			
Referenced from	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**
Hierarchy	Product_Components . File_Area . . File_Area_Checksum_Manifest			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	has_File.File_Area_Checksum... has_tagged_data_object.File...	1 1	File Checksum_Manifest	
Inherited Association	none			
Referenced from	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.

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

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

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

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

	Entity	Card	Value/Class
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package_Component		
Subclass	none		
Attribute	checksum_manifest_checksum.... checksum_type.Information_P... transfer_manifest_checksum....	0..1 0..1 0..1	
Inherited Attribute	none		
Association	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
Inherited Association	none		
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Ingest_LDD			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Ingest_LDD local_attribute.Ingest_LDD local_class.Ingest_LDD	1 1..* 0..*	Conceptual_Object DD_Attribute DD_Class	
Inherited Association	none			
Referenced from	none			

18.29 Instrument_Host_PDS3

Root Class: Tagged_NonDigital_Object
Role: Concrete
Class Description: The Instrument Host class provides a description of the phyiscal object upon which an instrument is mounted. This class captures the PDS3 catalog Instrument Host information.

	Entity	**Card**	**Value/Class**	**Ind**
Hierarchy	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Instrument_Host_PDS3			
Subclass	none			
Attribute	instrument_host_desc.Instru... instrument_host_id.Instrume... instrument_host_name.Instru... instrument_host_type.Instru...	1 1 1 1		
Inherited Attribute	none			
Association	data_object.Instrument_Host...	1	Physical_Object	
Inherited Association	none			
Referenced from	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 phyiscal object that collects data. This class captures the PDS3 catalog Instrument information.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Instrument_PDS3			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Instrument_PDS3	1	Physical_Object	
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Mission_PDS3			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Mission_PDS3	1	Conceptual_Object	
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Child . NSSDC			
Subclass	none			
Attribute	medium_type.NSSDC nssdc_collection_id.NSSDC	1 1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Object . TNDO_Context . . Node		
Subclass	none		
Attribute	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
Inherited Attribute	none		
Association	data_object.Node	1	Conceptual_Object
Inherited Association	none		
Referenced from	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.

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

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

18.36 Physical_Object

Root Class: Data_Object
Role: Concrete
Class Description: The Physical Object class defines a tangible object.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Object . Physical_Object			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Parsable_Byte_Stream . . . Service_Description			
Subclass	none			
Attribute	parsing_standard_id.Service...	1	WADL WSDL 2.n	R
Inherited Attribute	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		
Association	none			
Inherited Association	data_object.Parsable_Byte_S...	1	Digital_Object	
Referenced from	File_Area_Service_Description			

18.38 Software

Root Class: Tagged_NonDigital_Object
Role: Concrete
Class Description: The Software class describes a software product

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Software			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Software	1	Digital_Object	
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Software_Binary			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Software_Binary	1	Digital_Object	
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Software_Script			
Subclass	none			
Attribute	files.Software_Script install_note.Software_Script supported_environment_note.... system_requirements_note.So...	1 1 1 1		
Inherited Attribute	none			
Association	data_object.Software_Script	1	Digital_Object	
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Software_Source			
Subclass	none			
Attribute	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..* 1..* 1		
Inherited Attribute	none			
Association	data_object.Software_Source	1	Digital_Object	
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Information_Package . . . Submission_Information_Package			
Subclass	none			
Attribute	none			
Inherited Attribute	description.Information_Pac...	1		
Association	none			
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Subscriber_PDS3			
Subclass	none			
Attribute	full_name.Subscriber_PDS3 local_identifier.Subscriber... subscription_id.Subscriber_...	1 0..1 1..*		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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.

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

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

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

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

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

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

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Child			
Subclass	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			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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.

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

18.52 Target_PDS3

Root Class: Tagged_NonDigital_Object
Role: Concrete
Class Description: The Target class provides a description of a phyiscal object that is the object of data collection. This class captures the PDS3

catalog Target information.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Target_PDS3			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Target_PDS3	1	Physical_Object	
Inherited Association	none			
Referenced from	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
Hierarchy	Tagged_NonDigital_Child . Terminological_Entry		
Subclass	none		
Attribute	definition.Terminological_E... language.Terminological_Entry name.Terminological_Entry preferred_flag.Terminologic...	1 1 1 1	 English Russian
Inherited Attribute	none		
Association	source.Terminological_Entry	0..*	External_Reference_Extended
Inherited Association	none		
Referenced from	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_specificaition_names of the products' XML label files.

	Entity	**Card**	**Value/Class**	**In**
Hierarchy	Tagged_Digital_Object . Byte_Stream . . Table_Base . . . Table_Character . . . . Transfer_Manifest			
Subclass	none			
Attribute	none			
Inherited Attribute	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	
Association	none			
Inherited Association	data_object.Table_Base has_Record.Table_Character uniformly_sampled.Table_Cha...	1 1 0..1	Digital_Object Record_Character Uniformly_Sampled	
Referenced from	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.

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

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Object . TNDO_Context_PDS3 . . Volume_Set_PDS3			
Subclass	none			
Attribute	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		
Inherited Attribute	none			
Association	data_object.Volume_Set_PDS3	1	Conceptual_Object Physical_Object	
Inherited Association	none			
Referenced from	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**
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Cartography			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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**
Hierarchy	Tagged_NonDigital_Object . TNDO_Supplemental . . Quaternion			
Subclass	none			
Attribute	description.Quaternion local_identifier.Quaternion name.Quaternion type.Quaternion	1 0..1 1 1	 SPICE Spacecraft Telemetry	
Inherited Attribute	none			
Association	data_object.Quaternion quaternion_component.Quater...	1 4	Conceptual_Object Quaternion_Component	
Inherited Association	none			
Referenced from	none			

19.3 Quaternion_Component

Root Class: Tagged_NonDigital_Child
Role: Concrete
Class Description: The Quaternion_Component class provides a component of a quaternion.

	Entity	Card	Value/Class	Ind
Hierarchy	Tagged_NonDigital_Child . Quaternion_Component			
Subclass	none			
Attribute	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	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	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.

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Telemetry_Parameters			
Subclass	none			
Attribute	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 0..1	DATA_PRODUCT SFDU	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

Figure 14: Rings Discipline UML Class Diagram

20 Rings Discipline Classes

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

The rings 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.

```
+ + Radio_Occultation
+ + Radio_Occultation_Support
+ + Rings_Supplement
+ + Stellar_Occultation
```

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.

20.1 Radio_Occultation

Root Class: Product_Components
Role: Concrete
Class Description: This class is required for all radio ring occultations

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Radio_Occultation			
Subclass	none			
Attribute	SCLK_start_time.Radio_Occul...	0..1		
	SCLK_stop_time.Radio_Occult...	0..1		
	along_track_timing_offset.R...	0..1		
	dsn_station_number.Radio_Oc...	1		
	earth_received_start_time_u...	0..1		
	earth_received_stop_time_ut...	0..1		
	frequency_band.Radio_Occult...	1	C D E F G H K Ka Ku Q R S U V W X Y	
	highest_detectable_opacity....	0..1		
	light_source_incidence_angl...	0..1		
	lowest_detectable_opacity.R...	0..1		
	maximum_light_source_incide...	0..1		
	maximum_observed_ring_azimu...	1		
	maximum_observed_ring_eleva...	0..1		
	maximum_radial_sampling_int...	0..1		
	maximum_ring_longitude.Radi...	1		
	maximum_ring_radius.Radio_O...	1		
	maximum_wavelength.Radio_Oc...	0..1		
	minimum_light_source_incide...	0..1		
	minimum_observed_ring_azimu...	1		
	minimum_observed_ring_eleva...	0..1		
	minimum_radial_sampling_int...	0..1		
	minimum_ring_longitude.Radi...	1		
	minimum_ring_radius.Radio_O...	1		
	minimum_wavelength.Radio_Oc...	0..1		
	observed_event_start_tdb.Ra...	0..1		
	observed_event_stop_tdb.Rad...	0..1		
	observed_ring_elevation.Rad...	0..1		
	occultation_type.Radio_Occu...	1	Radio Solar Stellar	
	orbit_number.Radio_Occultation	0..*		
	planetary_occultation_flag....	0..1	N Y	

20.2 Radio_Occultation_Support

Root Class: Product_Components
Role: Concrete
Class Description: This class is required for all radio ring occultation calibration and geometry supplemental files.

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Radio_Occultation_Support			
Subclass	none			
Attribute	dsn_station_number.Radio_Oc...	1		
	frequency_band.Radio_Occult...	1	C D E F G H K Ka Ku Q R S U V W X Y	
	maximum_observed_event_time...	1		
	minimum_observed_event_time...	1		
	occultation_type.Radio_Occu...	1	Radio Solar Stellar	
	orbit_number.Radio_Occultat...	0..*		
	planetary_occultation_flag....	0..1	N Y	
	reference_time_utc.Radio_Oc...	1		
	ring_observation_id.Radio_O...	1		
	ring_occultation_direction....	1	Both Egress Ingress Multiple	
	ring_profile_direction.Radi...	1	Egress Ingress Multiple	
	sampling_parameter_interval...	1		
	sampling_parameter_name.Rad...	1		
	sampling_parameter_unit.Rad...	1		
	spice_filename.Radio_Occult...	0..*		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

20.3 Rings_Supplement

Root Class: Product_Components
Role: Concrete
Class Description: This class is required for all Rings Node currated data products

	Entity	**Card**	**Value/Class**	**Ind**
Hierarchy	Product_Components . Rings_Supplement			
Subclass	none			
Attribute	ring_observation_id.Rings_S... source_pds3_id.Rings_Supple...	1 0..*		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

20.4 Stellar_Occultation

Root Class: Product_Components
Role: Concrete
Class Description: This class is required for all stellar ring occultations

	Entity	Card	Value/Class	Ind
Hierarchy	Product_Components . Stellar_Occultation			
Subclass	none			
Attribute	SCLK_start_time.Stellar_Occ...	0..1		
	SCLK_stop_time.Stellar_Occu...	0..1		
	highest_detectable_opacity....	0..1		
	light_source_incidence_angl...	0..1		
	lowest_detectable_opacity.S...	0..1		
	maximum_observed_ring_azimu...	1		
	maximum_observed_ring_eleva...	0..1		
	maximum_radial_sampling_int...	0..1		
	maximum_ring_longitude.Stel...	1		
	maximum_ring_radius.Stellar...	1		
	maximum_wavelength.Stellar_...	0..1		
	minimum_observed_ring_azimu...	1		
	minimum_observed_ring_eleva...	0..1		
	minimum_radial_sampling_int...	0..1		
	minimum_ring_longitude.Stel...	1		
	minimum_ring_radius.Stellar...	1		
	minimum_wavelength.Stellar_...	0..1		
	observed_event_start_tdb.St...	0..1		
	observed_event_stop_tdb.Ste...	0..1		
	observed_ring_elevation.Ste...	0..1		
	occultation_type.Stellar_Oc...	1	Radio Solar Stellar	
	orbit_number.Stellar_Occult...	0..*		
	planetary_occultation_flag....	0..1	N Y	
	radial_resolution.Stellar_O...	1		
	radial_sampling_interval.St...	0..1		
	ring_event_start_tdb.Stella...	0..1		
	ring_event_start_time_utc.S...	0..1		
	ring_event_stop_tdb.Stellar...	0..1		
	ring_event_stop_time_utc.St...	0..1		
	ring_observation_id.Stellar...	1		
	ring_occultation_direction....	1	Both Egress Ingress Multiple	
	ring_profile_direction.Stel...	1	Egress Ingress Multiple	
	source_pds3_id.Stellar_Occu...	0..*		
	star_name.Stellar_Occultation	1		
	sub_stellar_clock_angle.Ste...	0..1		
	sub_stellar_ring_azimuth.St...	0..1		
	wavelength.Stellar_Occultation	0..1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

21 DataType 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.

21.1 ASCII_AnyURI

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII AnyURI class indicates a URI or its subclasses URN and URL.

Figure 15: DataType UML Class Diagram

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

21.2 ASCII_Boolean

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_Boolean class indicates a boolean. The allowed values are 'true' and 'false'.

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

21.3 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
Hierarchy	Data_Type . Character_Data_Type . . ASCII_DOI			
Subclass	none			
Attribute	character_constraint.ASCII_DOI	1	ASCII	R
	formation_rule.ASCII_DOI	1	nn.nnnn/nnn	R
	maximum_characters.ASCII_DOI	1		R
	minimum_characters.ASCII_DOI	1		R
	pattern.ASCII_DOI	1	10	
. S+/ S+	R			
	xml_schema_base_type.ASCII_DOI	1	xsd:string	R
Inherited Attribute	character_encoding.Characte...	1	UTF-8	
	maximum_value.Character_Dat...	1		
	minimum_value.Character_Dat...	1		
Association	none			
Inherited Association	none			
Referenced from	none			

21.4 ASCII_Date

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_Date class indicates a date in either YMD or DOY format.

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

21.5 ASCII_Date_DOY

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_Date_DOY class indicates a date in DOY format.

	Entity	Card	Value/Class
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Date_DOY		
Subclass	none		
Attribute	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 xsd:string
Inherited Attribute	character_encoding.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1	UTF-8
Association	none		
Inherited Association	none		
Referenced from	none		

21.6 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.

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

21.7 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.

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

21.8 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.

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

21.9 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
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Date_Time_YMD		
Subclass	none		
Attribute	character_constraint.ASCII_...	1	ASCII
	formation_rule.ASCII_Date_T...	1	YYYY-MM-DDTHH:MM:S
	maximum_characters.ASCII_Da...	1	
	maximum_value.ASCII_Date_Ti...	1	
	minimum_characters.ASCII_Da...	1	
	minimum_value.ASCII_Date_Ti...	1	
	pattern.ASCII_Date_Time_YMD	1	(-)?[0-9]{4}-((0[1-9])—(1[0- (-)?[0-9]{4}-((0[1-9])—(1[0- .([0-9]{1,4}))?(Z)? (-)?[0-9]{4}-((0[1-9])—(1[0- (-)?[0-9]{4}-((0[1-9])—(1[0- .0+)?))?)(Z)?
	xml_schema_base_type.ASCII_...	1	xsd:string
Inherited Attribute	character_encoding.Characte...	1	UTF-8
Association	none		
Inherited Association	none		
Referenced from	none		

21.10 ASCII_Date_YMD

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_Date_YMD class indicates a date in YMD format.

	Entity	Card	Value/Class
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Date_YMD		
Subclass	none		
Attribute	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- (-)?[0-9]{4}-((0[1-9])—(1[0- xsd:string
Inherited Attribute	character_encoding.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1	UTF-8
Association	none		
Inherited Association	none		
Referenced from	none		

21.11 ASCII_Directory_Path_Name

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII Directory Path Name class indicates a system directory path.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Directory_Path_Name			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.12 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
Hierarchy	Data_Type . Character_Data_Type . . ASCII_File_Name			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.13 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.

	Entity	Card	Value/Class
Hierarchy	Data_Type . Character_Data_Type . . ASCII_File_Specification_Name		
Subclass	none		
Attribute	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
Inherited Attribute	character_encoding.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat... pattern.Character_Data_Type	1 1 1 1	UTF-8
Association	none		
Inherited Association	none		
Referenced from	none		

21.14 ASCII_Integer

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_Integer class indicates an integer.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Integer			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.15 ASCII_LID

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_LID class indicates a logical identifier.

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

21.16 ASCII_LIDVID

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_LIDVID class indicates a logical identifier and version identifier.

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

21.17 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 identfier.

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

21.18 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
Hierarchy	Data_Type . Character_Data_Type . . ASCII_MD5_Checksum			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.19 ASCII_NonNegative_Integer

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_NonNegative_Integer class indicates a non-negative integer.

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

21.20 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.

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

21.21 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
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Numeric_Base2			
Subclass	none			
Attribute	character_constraint.ASCII_...	1	ASCII	R
	maximum_characters.ASCII_Nu...	1	255	R
	maximum_value.ASCII_Numeric...	1		R
	minimum_characters.ASCII_Nu...	1	1	R
	minimum_value.ASCII_Numeric...	1		R
	pattern.ASCII_Numeric_Base2	1	[0-1]{1,255}	R
	xml_schema_base_type.ASCII_...	1	xsd:string	R
Inherited Attribute	character_encoding.Characte...	1	UTF-8	
	formation_rule.Character_Da...	1		
Association	none			
Inherited Association	none			
Referenced from	none			

21.22 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Numeric_Base8			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... formation_rule.Character_Da... maximum_value.Character_Dat... minimum_value.Character_Dat...	1 1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.23 ASCII_Real

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_Real class indicates a real.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Real			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.24 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
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Short_String_Collapsed			
Subclass	none			
Attribute	character_constraint.ASCII_...	1	ASCII	R
	maximum_characters.ASCII_Sh...	1	255	R
	maximum_value.ASCII_Short_S...	1		R
	minimum_characters.ASCII_Sh...	1	1	R
	minimum_value.ASCII_Short_S...	1		R
	xml_schema_base_type.ASCII_...	1	xsd:token	R
Inherited Attribute	character_encoding.Characte...	1	UTF-8	
	formation_rule.Character_Da...	1		
	pattern.Character_Data_Type	1		
Association	none			
Inherited Association	none			
Referenced from	none			

21.25 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.

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

21.26 ASCII_String

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_String class indicates a limited length ASCII text string with whitespaces removed.

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

21.27 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
Hierarchy	Data_Type . Character_Data_Type . . ASCII_Text_Collapsed			
Subclass	none			
Attribute	character_constraint.ASCII_...	1	ASCII	R
	maximum_characters.ASCII_Te...	1		R
	minimum_characters.ASCII_Te...	1	1	R
	xml_schema_base_type.ASCII_...	1	xsd:token	R
Inherited Attribute	character_encoding.Characte...	1	UTF-8	
	formation_rule.Character_Da...	1		
	maximum_value.Character_Dat...	1		
	minimum_value.Character_Dat...	1		
	pattern.Character_Data_Type	1		
Association	none			
Inherited Association	none			
Referenced from	none			

21.28 ASCII_Text_Preserved

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_Text_Preserved class indicates an unlimited length, whitespace-preserved text string.

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

21.29 ASCII_Time

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_Time class indicates a time value.

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

21.30 ASCII_VID

Root Class: Data_Type
Role: Concrete
Class Description: The ASCII_VID class indicates a version identifier.

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

21.31 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Type . Character_Data_Type			
Subclass	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			
Attribute	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 xml_schema_base_type.Charac...	1 1 1 1 1 1 1 1 1	 UTF-8	
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

21.32 Complex

Root Class: Data_Type
Role: Abstract
Class Description: Complex Binary Data Types

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

21.33 ComplexLSB16

Root Class: Data_Type
Role: Concrete
Class Description: Complex number consisting of two LSB 8 byte decimal reals.

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

21.34 ComplexLSB8

Root Class: Data_Type
Role: Concrete
Class Description: Complex number consisting of two LSB 4 byte decimal reals.

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

21.35 ComplexMSB16

Root Class: Data_Type
Role: Concrete
Class Description: Complex number consisting of two MSB 8 byte decimal reals.

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

21.36 ComplexMSB8

Root Class: Data_Type
Role: Concrete
Class Description: Complex number consisting of two MSB 4 byte decimal reals.

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

21.37 Decimal_Integer

Root Class: Data_Type
Role: Abstract
Class Description: Decimal Integer Binary Data Types

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

21.38 Decimal_Real

Root Class: Data_Type
Role: Abstract
Class Description: Floating Point Binary Data Types

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

21.39 IEEE754LSBDouble

Root Class: Data_Type
Role: Concrete
Class Description: IEEE 754 LSB double precision floating point

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

21.40 IEEE754LSBSingle

Root Class: Data_Type
Role: Concrete
Class Description: IEEE 754 LSB single precision floating point

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

21.41 IEEE754MSBDouble

Root Class: Data_Type
Role: Concrete
Class Description: IEEE 754 MSB double precision floating point

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

21.42 IEEE754MSBSingle

Root Class: Data_Type
Role: Concrete
Class Description: IEEE 754 MSB single precision floating point

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Type . Binary_Data_Type . . Decimal_Real . . . IEEE754MSBSingle			
Subclass	none			
Attribute	none			
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

21.43 SignedBitString

Root Class: Data_Type
Role: Concrete
Class Description: Signed Bit String

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

21.44 SignedByte

Root Class: Data_Type
Role: Concrete
Class Description: Signed 8-bit byte

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

21.45 SignedLSB2

Root Class: Data_Type
Role: Concrete
Class Description: Signed 2's-complement LSB 2-byte integer

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

21.46 SignedLSB4

Root Class: Data_Type
Role: Concrete
Class Description: Signed 2's-complement LSB 4-byte integer

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

21.47 SignedLSB8

Root Class: Data_Type
Role: Concrete
Class Description: Signed 2's-complement LSB 8-byte integer

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

21.48 SignedMSB2

Root Class: Data_Type
Role: Concrete
Class Description: Signed 2's-complement MSB 2-byte integer

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

21.49 SignedMSB4

Root Class: Data_Type
Role: Concrete
Class Description: Signed 2's-complement MSB 4-byte integer

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

21.50 SignedMSB8

Root Class: Data_Type
Role: Concrete
Class Description: Signed 2's-complement MSB 8-byte integer

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

21.51 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
Hierarchy	Data_Type . Character_Data_Type . . UTF8_Short_String_Collapsed			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.52 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Type . Character_Data_Type . . UTF8_Short_String_Preserved			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.53 UTF8_String

Root Class: Data_Type
Role: Concrete
Class Description: The UTF8_String class indicates a limited length UTF8 text string with whitespaces removed.

	Entity	Card	Value/Class	Ind
Hierarchy	Data_Type . Character_Data_Type . . UTF8_String			
Subclass	none			
Attribute	minimum_characters.UTF8_String xml_schema_base_type.UTF8_S...	1 1	1 xsd:token	R R
Inherited Attribute	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	
Association	none			
Inherited Association	none			
Referenced from	none			

21.54 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
Hierarchy	Data_Type . Character_Data_Type . . UTF8_Text_Preserved			
Subclass	none			
Attribute	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
Inherited Attribute	character_encoding.Characte... formation_rule.Character_Da... pattern.Character_Data_Type	1 1 1	UTF-8	
Association	none			
Inherited Association	none			
Referenced from	none			

21.55 UnsignedBitString

Root Class: Data_Type
Role: Concrete
Class Description: Unsigned Bit String

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

21.56 UnsignedByte

Root Class: Data_Type
Role: Concrete
Class Description: Unsigned 8-bit byte

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

21.57 UnsignedLSB2

Root Class: Data_Type
Role: Concrete
Class Description: Unsigned 2's-complement LSB 2-byte integer

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

21.58 UnsignedLSB4

Root Class: Data_Type
Role: Concrete
Class Description: Unsigned 2's-complement LSB 4-byte integer

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

21.59 UnsignedLSB8

Root Class: Data_Type
Role: Concrete
Class Description: Unsigned 2's-complement LSB 8-byte integer

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

21.60 UnsignedMSB2

Root Class: Data_Type
Role: Concrete
Class Description: Unsigned 2's-complement MSB 2-byte integer

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

21.61 UnsignedMSB4

Root Class: Data_Type
Role: Concrete
Class Description: Unsigned 2's-complement MSB 4-byte integer

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

21.62 UnsignedMSB8

Root Class: Data_Type
Role: Concrete
Class Description: Unsigned 2's-complement MSB 8-byte integer

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

22 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_Spectral_Irradiance
+ + Units_of_Spectral_Radiance
+ + Units_of_Storage
+ + Units_of_Temperature
+ + Units_of_Time
+ + Units_of_Velocity
+ + Units_of_Voltage
+ + Units_of_Volume
+ + Units_of_Wavenumber
```

The class hierarchy above includes 27 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

Figure 16: DataType UML Class Diagram

and those inherited from parent classes. Cardinalities are provided where appropriate.

22.1 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
Hierarchy	Unit_Of_Measure			
Subclass	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_Spectral_Irradiance Units_of_Spectral_Radiance Units_of_Storage Units_of_Temperature Units_of_Time Units_of_Velocity Units_of_Voltage Units_of_Volume Units_of_Wavenumber			
Attribute	specified_unit_id.Unit_Of_M... type.Unit_Of_Measure unit_id.Unit_Of_Measure	1 1 1		
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.2 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
Hierarchy	Unit_Of_Measure . Units_of_Acceleration			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.3 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
Hierarchy	Unit_Of_Measure . Units_of_Amount_Of_Substance			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.4 Units_of_Angle

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Angle is a magnitude of angle.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Angle			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.5 Units_of_Angular_Velocity

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Angular_Velocity is a magnitude of speed of rotation.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Angular_Velocity			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.6 Units_of_Area

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Area is a magnitude of area.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Area			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.7 Units_of_Frame_Rate

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Frame_Rate is a magnitude of change.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Frame_Rate			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.8 Units_of_Frequency

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Frequency is a magnitude of frequency.

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

22.9 Units_of_Length

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Length is a magnitude of length.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Length			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.10 Units_of_Map_Scale

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Map_Scale is a proportional representation.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Map_Scale			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.11 Units_of_Mass

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Mass is a magnitude of mass.

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

22.12 Units_of_Misc

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Misc provides an assortment of derived units.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Misc			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.13 Units_of_None

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_None indicates that no unit of measure applies.

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

22.14 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.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Optical_Path_Length			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.15 Units_of_Pressure

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Pressure is a magnitude of pressure.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Pressure			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.16 Units_of_Radiance

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Radiance is a magnitude of radiance.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Radiance			
Subclass	none			
Attribute	specified_unit_id.Units_of_... type.Units_of_Radiance unit_id.Units_of_Radiance	1 1 1	W*m**-2*sr**-1 Radiance W*m**-2*sr**-1	R R R
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.17 Units_of_Rates

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Rate is a magnitude of change.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Rates			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.18 Units_of_Solid_Angle

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Solid_Angle is a magnitude of a solid angle.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Solid_Angle			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.19 Units_of_Spectral_Irradiance

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: A measure of the power of radiation at a particular frequency or wavelength that passes through a unit area.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Spectral_Irradiance			
Subclass	none			
Attribute	specified_unit_id.Units_of_... type.Units_of_Spectral_Irra... unit_id.Units_of_Spectral_I...	1 1 1	W*m**-3 Spectral_Irradiance SFU W*m**-2*Hz**-1 W*m**-2*nm**-1 W*m**-3 uW*cm**-2*um**-1	R R R
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.20 Units_of_Spectral_Radiance

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: A measure of the power of radiation at a particular frequency or wavelength that passes through a unit area and a unit solid angle in a specified direction.

	Entity	Card	Value/Class	I
Hierarchy	Unit_Of_Measure . Units_of_Spectral_Radiance			
Subclass	none			
Attribute	specified_unit_id.Units_of_... type.Units_of_Spectral_Radi... unit_id.Units_of_Spectral_R...	1 1 1	W*m**-3*sr**-1 Spectral_Radiance W*m**-2*sr**-1*Hz**-1 W*m**-2*sr**-1*nm**-1 W*m**-2*sr**-1*um**-1 W*m**-3*sr**-1 uW*cm**-2*sr**-1*um**-1	R R R
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.21 Units_of_Storage

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Storage is an amount of computer storage.

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

22.22 Units_of_Temperature

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Temperature is a magnitude of temperature.

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

22.23 Units_of_Time

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Time is a magnitude of time.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Time			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.24 Units_of_Velocity

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Velocity is a magnitude of velocity.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Velocity			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.25 Units_of_Voltage

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Voltage is a magnitude of voltage.

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

22.26 Units_of_Volume

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Volume is a magnitude of volume.

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Volume			
Subclass	none			
Attribute	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
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

22.27 Units_of_Wavenumber

Root Class: Unit_Of_Measure
Role: Concrete
Class Description: Units_of_Wavenumber is the number of waves that occur per unit distance, i.e., inverse length

	Entity	Card	Value/Class	Ind
Hierarchy	Unit_Of_Measure . Units_of_Wavenumber			
Subclass	none			
Attribute	specified_unit_id.Units_of_... type.Units_of_Wavenumber unit_id.Units_of_Wavenumber	1 1 1	cm**-1 Wavenumber cm**-1 m**-1 nm**-1	R R R
Inherited Attribute	none			
Association	none			
Inherited Association	none			
Referenced from	none			

Figure 17: PDS Object Unification Using OAIS Information Object

23 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.

24 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.

SCLK_start_time in Radio_Occultation SCLK_start_time is the value of the spacecraft clock corresponding to the start_date_time given in the label.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

SCLK_start_time in Stellar_Occultation SCLK_start_time is the value of the spacecraft clock corresponding to the start_date_time given in the label.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

SCLK_stop_time in Radio_Occultation SCLK_stop_time is the value of the spacecraft clock corresponding to the stop_date_time given in the label.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

SCLK_stop_time in Stellar_Occultation SCLK_stop_time is the value of the spacecraft clock corresponding to the stop_date_time given in the label.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: 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

along_track_timing_offset in Radio_Occultation
along_track_timing_offset is a timing offset to the along track spacecraft position. It is the value that minimizes differences in radii of matching circular ring features observed on the ingress and egress sides of the occultation track. Optional in labels for radio occultation. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: false

Attribute Concept: Name

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Number

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

Nillable: false

Attribute Concept: Number

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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: ID

Conceptual Domain: Short_String

Steward: ops

Namespace Id: pds

Value: Address, Angle, Attribute, Bit, Checksum, Collection, Constant, Cosine, Count, DOI, Delimiter, Description, Deviation, Direction, Distance, 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 asssociated 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

Nillable: 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 asssociated 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 asssociated 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

Nillable: false

Attribute Concept: Count

Conceptual Domain: Integer

Steward: pds

Namespace Id: pds

axes in Array_1D The axes attribute provides a count of the axes.

Type: ASCII_Integer

Class Name: Array_1D

Minimum Value: 1

Maximum Value: 16

Nillable: false

Conceptual Domain: Integer

Steward: pds

Namespace Id: pds

Value: 1

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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 qube. The band number is equivalent to the instrument band number.

Type: ASCII_Integer

Class Name: Band_Bin

Minimum Value: 1

Maximum Value: 512

Nillable: 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

Nillable: false

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

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 qube. 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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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.

Type: ASCII_Short_String_Collapsed

Class Name: ASCII_Date_Time_DOY

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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.

Type: ASCII_Short_String_Collapsed

Class Name: ASCII_Date_Time_UTC

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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.

Type: ASCII_Short_String_Collapsed

Class Name: ASCII_Date_Time_YMD

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

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

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

Nillable: false

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

Nillable: false

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

Nillable: false

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.

Type: ASCII_Short_String_Collapsed

Class Name: ASCII_MD5_Checksum

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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

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

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

character_constraint in ASCII_Numeric_Base2 The character_constraint attribute limits the characters allowed.

Type: ASCII_Short_String_Collapsed

Class Name: ASCII_Numeric_Base2

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: ASCII

character_constraint in ASCII_Numeric_Base8 The character_constraint attribute limits the characters allowed.

Type: ASCII_Short_String_Collapsed

Class Name: ASCII_Numeric_Base8

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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.

Type: ASCII_Short_String_Collapsed

Class Name: ASCII_Text_Collapsed

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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.

Type: ASCII_Short_String_Collapsed

Class Name: ASCII_Text_Preserved

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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

Nillable: false

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

Nillable: false

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.

Type: ASCII_Short_String_Collapsed

Class Name: Character_Data_Type

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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

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

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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 Internal_Reference The comment attribute provides one or more remarks or thoughts relevant to the object.

Type: ASCII_Text_Preserved

Class Name: Internal_Reference

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: ID

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

Nillable: 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

Nillable: false

Attribute Concept: Text

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

Nillable: false

Attribute Concept: Text

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

Nillable: false

Attribute Concept: Text

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)

Nillable: false

Attribute Concept: 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

Nillable: 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 - *Deprecated* 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

Nillable: false

Attribute Concept: ID

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

Nillable: 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

Nillable: 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

Nillable: 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: 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

Nillable: 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

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, ComplexLSB16, ComplexLSB8, ComplexMSB16, ComplexMSB8, IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedBitString, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UTF8_String, UnsignedBitString, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8

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

Nillable: false

Attribute Concept: Type

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: SignedBitString, UnsignedBitString

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

Nillable: 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: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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 qube. 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

Nillable: false

Attribute Concept: Name

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

discipline_name in Discipline_Facets The discipline_name attribute describes the observing discipline (as opposed to a PDS Discipline Node Name, though the concepts and values are similar). Some of these values are, with respect to the PDS Nodes, inter-disciplinary and should be used when they are applicable in perference to the more restrictive values.

Type: ASCII_Short_String_Collapsed

Class Name: Discipline_Facets

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: Atmospheres, Fields, Flux Measurements, Imaging, Particles, Ring-Moon Systems, Small Bodies, Spectroscopy

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: DOI

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

domain in Science_Facets The radial "zone' or "shell' of the target for which the observations were collected or which are represented in the product(s). The value may depend on wavelength_range and size of the target.

Type: ASCII_Short_String_Collapsed

Class Name: Science_Facets

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: Atmosphere, Heliosphere, Interior, Interstellar, Ionosphere, Magnetosphere, Surface

dsn_station_number in Radio_Occultation dsn_station_number identifies the receiving DSN station. Required in labels for radio occultations; not used for stellar occultations. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Integer

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

dsn_station_number in Radio_Occultation_Support
dsn_station_number identifies the receiving DSN station. Required in labels for radio occultations; not used for stellar occultations. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Integer

Class Name: Radio_Occultation_Support

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: false

Attribute Concept: Time

Conceptual Domain: Time

Steward: img

Namespace Id: img

earth_received_start_time_utc in Radio_Occultation
earth_received_start_time_utc gives the UTC time corresponding to the earliest time for the data product at which telemetry or other photons were received on Earth. Optional for occultation data. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: false

Attribute Concept: Time

Conceptual Domain: Time

Steward: img

Namespace Id: img

earth_received_stop_time_utc in Radio_Occultation
earth_received_stop_time_utc gives the UTC time corresponding to the latest time for the data product at which telemetry or other photons were received on Earth. Optional for occultation data. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

facet1 in Group_Facet1 The facet1 attribute provides a subcategorization under the discipline_name. The values are restricted according to the value of discipline_name.

Type: ASCII_Short_String_Collapsed

Class Name: Group_Facet1

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: 2D (Spectroscopy), Color (Imaging), Color Movie (Imaging), Dust Study (Small Bodies), Dynamical Properties (Small Bodies), Electric (Fields), Electrons (Particles), Gas Study (Small Bodies), Grayscale (Imaging), Historical Reference (Small Bodies), Ions (Particles), Lightcurve (Small Bodies), Linear (Spectroscopy), Magnetic (Fields), Meteoritics (Small Bodies), Meteorology (Atmospheres), Movie (Imaging), Neutrals (Particles), Photometry (Flux Measurements), Physical Properties (Small Bodies), Polarimetry (Flux Measurements), Production Rates (Small Bodies), Ring Compositional Map (Ring-Moon Systems), Ring Occultation Profile (Ring-Moon Systems), Ring Thermal Map (Ring-Moon Systems), Satellite Astrometry (Ring-Moon Systems), Shape Model (Small Bodies), Spectral Cube (Spectroscopy), Spectral Image (Spectroscopy), Structure (Atmospheres), Tabulated (Spectroscopy), Taxonomy (Small Bodies)

facet2 in Group_Facet2 The facet2 attribute provides a subcategorization under the discipline_name. The values are restricted according to the value of discipline_name.

Type: ASCII_Short_String_Collapsed

Class Name: Group_Facet2

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: Background (Fields), Cosmic Ray (Particles), Energetic (Particles), Plasma (Particles), Solar Energetic (Particles), Waves (Fields)

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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: 0

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: 0

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

Nillable: 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

Nillable: 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

Nillable: 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 qube 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

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

Nillable: false

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

Nillable: false

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

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

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

frequency_band in Radio_Occultation frequency_band is the one or two letter identifier of the frequency band. Required in labels for radio occultations; not used for stellar occultations. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: C, D, E, F, G, H, K, Ka, Ku, Q, R, S, U, V, W, X, Y

frequency_band in Radio_Occultation_Support frequency_band is the one or two letter identifier of the frequency band. Required in labels for radio occultations; not used for stellar occultations. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: C, D, E, F, G, H, K, Ka, Ku, Q, R, S, U, V, W, X, Y

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

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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_1D 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_Discipline_Facets in Science_Facets The has_Discipline_Facets association is a relationship to Discipline_Facets.

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_Facet1 in Discipline_Facets The has_Group_Facet1 association is a relationship to Group_Facet1.

Type: Association

has_Group_Facet2 in Discipline_Facets The has_Group_Facet2 association is a relationship to Group_Facet2.

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_Science_Facet in Primary_Result_Summary The has_Science_Facet association is a relationship Science_Facet.

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 hsa_investigation_area association is a relationship to Investigation_Area.

Type: Association

has_investigation_area in Observation_Area The hsa_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_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

Nillable: false

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

Nillable: false

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: -32764, 255, 4, 65535, FF7FFFFF, FFFBFFFF

highest_detectable_opacity in Radio_Occultation highest_detectable_opacity indicates the sensitivity of a ring occultation data set to nearly opaque rings. It specifies the rough value for the largest normal ring opacity that can be detected in the data at the resolution provided, incorporating both statistical effects and calibration uncertainties. Strongly recommended in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Real

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

highest_detectable_opacity in Stellar_Occultation
highest_detectable_opacity indicates the sensitivity of a ring occultation data set to nearly opaque rings. It specifies the rough value for the largest normal ring opacity that can be detected in the data at the resolution provided, incorporating both statistical effects and calibration uncertainties. Strongly recommended in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Real

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: false

Attribute Concept: ID

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: 1.1.0.1

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

Nillable: 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]*)

Nillable: 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]*)

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Text

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

Nillable: false

Attribute Concept: Text

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)

Nillable: false

Attribute Concept: 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

Nillable: 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

Nillable: false

Attribute Concept: ID

Conceptual Domain: Short_String

Steward: ops

Namespace Id: pds

ldd_version_id in XML_Schema The ldd_version_id attribute provides the version of the Local Data Dictionary.

Type: ASCII_Short_String_Collapsed

Class Name: XML_Schema

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

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

Nillable: 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

Nillable: false

Attribute Concept: Reference

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Schematron Rule: The number of colons found in the lid_reference is valid.

Schematron Rule: The value of the attribute lid_reference must start with 'urn:nasa:pds:'

Schematron Rule: The value of the attribute lid_reference must not include a value that contains '::' followed by version id

Schematron Rule: The value of the attribute lid_reference must not include a value that contains '::' followed by version id

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

Nillable: 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

Nillable: false

Attribute Concept: Reference

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Schematron Rule: The number of colons found in the lidvid_reference is valid.

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

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

light_source_incidence_angle in Radio_Occultation

light_source_incidence_angle is an angle measured from the local surface normal vector to the direction of a photon arriving from the light source. For rings, the normal vector is that on the same side of the rings as the light source, so values always range between 0 and 90 in units of degrees. The value is always equal to 90 - %7C observed_ring_elevation %7C This will enable users to perform database searches based on the effective ring opening angle when they are not concerned about the the distinction between north-side and southside viewpoints. We have included the 'light source' prefix to the term so that this quantity is not confused with 'incidence angle', a term that is generally associated with sunlight rather than stars or radio transmitters. Required in the label if the value is constant for the observation. If the angle varies for the observation, the min and max attributes are required in the label. Optional as a field in the data table. Nillable, in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: -90

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

light_source_incidence_angle in Stellar_Occultation

light_source_incidence_angle is an angle measured from the local surface normal vector to the direction of a photon arriving from

the light source. For rings, the normal vector is that on the same side of the rings as the light source, so values always range between 0 and 90 in units of degrees. The value is always equal to 90 - %7C observed_ring_elevation %7C This will enable users to perform database searches based on the effective ring opening angle when they are not concerned about the the distinction between north-side and southside viewpoints. We have included the 'light source' prefix to the term so that this quantity is not confused with 'incidence angle', a term that is generally associated with sunlight rather than stars or radio transmitters. Required in the label if the value is constant for the observation. If the angle varies for the observation, the min and max attributes are required in the label. Optional as a field in the data table. Nillable, in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: -90

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

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

Conceptual Domain: Short_String

Steward: ops

Namespace Id: pds

local_identifier in Axis_Array The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.

Type: ASCII_Short_String_Collapsed

Class Name: Axis_Array

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Nillable: false

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

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

local_internal_reference in Array The local_internal_reference association is a relationship to the class Local_Internal_Reference.

Type: Association

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: 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

Nillable: false

Attribute Concept: 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

Nillable: false

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 attribute pds:product_class must match parent product class name.

Schematron Rule: The value of the attribute logical_identifier must only contain lower-case letters'

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 valid.

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

Nillable: false

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

Nillable: false

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: -32767, 1, 16#FF7FFFFC#, 16#FFFEFFFF#

lowest_detectable_opacity in Radio_Occultation

lowest_detectable_opacity indicates the sensitivity of a ring occultation data set to nearly opaque rings. It specifies the rough value for the smallest normal ring opacity that can be detected in the data at the resolution provided, incorporating both statistical effects and calibration uncertainties. Strongly recommended in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Real

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

lowest_detectable_opacity in Stellar_Occultation

lowest_detectable_opacity indicates the sensitivity of a ring occultation data set to nearly opaque rings. It specifies the rough value for the smallest normal ring opacity that can be detected in the data at the resolution provided, incorporating both statistical effects and calibration uncertainties. Strongly recommended in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Real

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: false

Attribute Concept: Number

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

Nillable: false

Attribute Concept: Number

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Length

Conceptual Domain: Integer

Steward: pds

Namespace Id: pds

maximum_light_source_incidence_angle in Radio_Occultation
maximum_light_source_incidence_angle specifes the largest value for observed_ring_elevation in the observation. Only used if the value is not constant over the observation. Values range from 0 to %2B90 in units of degrees. Not intended for use in the data file. Nillable, in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: 0

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

maximum_observed_event_time in Radio_Occultation_Support
maximum_observed_event_time indicates the value for latest time in the described data, and is given in observed_event_tdb format.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation_Support

Nillable: false

Steward: rings

Namespace Id: rings

maximum_observed_ring_azimuth in Radio_Occultation

maximum_observed_ring_azimuth specifes the largest value for observed_ring_azimuth in the data file. Values range from 0 to 360 in units of degrees. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

maximum_observed_ring_azimuth in Stellar_Occultation

maximum_observed_ring_azimuth specifes the largest value for observed_ring_azimuth in the data file. Values range from 0 to 360 in units of degrees. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

maximum_observed_ring_elevation in Radio_Occultation

maximum_observed_ring_elevation specifes the largest value for observed_ring_elevation in the data file. Only used if the value is not constant over the observation. Values range from -90 to %2B90 in units of degrees. Not intended for use in the data file. Nillable, in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: -90

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

maximum_observed_ring_elevation in Stellar_Occultation
maximum_observed_ring_elevation specifes the largest value for observed_ring_elevation in the data file. Only used if the value is not constant over the observation. Values range from -90 to %2B90 in units of degrees. Not intended for use in the data file. Nillable, in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: -90

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: false

Attribute Concept: Count

Conceptual Domain: Short_String

Steward: ops

Namespace Id: pds

maximum_radial_sampling_interval in Radio_Occultation maximum_radial_sampling_interval indicates the smallest radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the radial_resolution because a profile may be over-sampled. If the value of radial_sampling_interval varies, the minimum and maximum attributes are required in labels. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended to be used as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

maximum_radial_sampling_interval in Stellar_Occultation
maximum_radial_sampling_interval indicates the smallest radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the radial_resolution because a profile may be over-sampled. If the value of radial_sampling_interval varies, the minimum and maximum attributes are required in labels. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended to be used as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: false

Attribute Concept: Length

Conceptual Domain: Integer

Steward: pds

Namespace Id: pds

maximum_ring_longitude in Radio_Occultation

maximum_ring_longitude specifies one boundary for the ring longitude range in the data; normally the largest value. However, for ranges that cross the prime meridian, the maximum ring longitude will have a value less than the minimum ring longitude. Values range from 0 to 360 in units of degrees. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

maximum_ring_longitude in Stellar_Occultation

maximum_ring_longitude specifies one boundary for the ring longitude range in the data; normally the largest value. However, for ranges that cross the prime meridian, the maximum ring longitude will have a value less than the minimum ring longitude. Values range from 0 to 360 in units of degrees. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

maximum_ring_radius in Radio_Occultation maximum_ring_radius indicates the largest ring radius value in the data table. Units are km and are always positive. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

maximum_ring_radius in Stellar_Occultation maximum_ring_radius indicates the largest ring radius value in the data table. Units are km and are always positive. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

maximum_scaled_value in Object_Statistics The maximum_scaled_value attribute provides the maximum value after application of scaling_factor and value_offset (see their definitions; maximum_scaled_value is the maximum of Ov).

Type: ASCII_Real

Class Name: Object_Statistics

Nillable: false

Attribute Concept: Number

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

Nillable: false

Attribute Concept: Value

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

maximum_wavelength in Radio_Occultation maximum_wavelength is the largest wavelength used in the observation. Optional in labels. Used with minimum_wavelength when the observation is over a wavelength range. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

maximum_wavelength in Stellar_Occultation maximum_wavelength is the largest wavelength used in the observation. Optional in labels. Used with minimum_wavelength when the observation is over a wavelength range. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

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})

Nillable: 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: Number

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: Number

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: Number

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: Number

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

Nillable: 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

Nillable: false

Attribute Concept: ID

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

Nillable: false

Attribute Concept: Number

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

Nillable: false

Attribute Concept: Number

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

Nillable: 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

Nillable: 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: ASCII_AnyURI

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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: ASCII_Date_YMD

Minimum Characters: 1

Maximum Characters: 255

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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: ASCII_String

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_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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Count

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: 1

minimum_light_source_incidence_angle in Radio_Occultation minimum_light_source_incidence_angle specifes the smallest value for observed_ring_elevation in the observation. Only used if the value is not constant over the observation. Values range from 0 to %2B90 in units of degrees. Not intended for use in the data file. Nillable, in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: 0

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

minimum_observed_event_time in Radio_Occultation_Support
minimum_observed_event_time indicates the value for earliest time in the described data, and is given in observed_event_tdb format.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation_Support

Nillable: false

Steward: rings

Namespace Id: rings

minimum_observed_ring_azimuth in Radio_Occultation
minimum_observed_ring_azimuth specifes the smallest value for observed_ring_azimuth in the data file. Values range from 0 to 360 in units of degrees. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

minimum_observed_ring_azimuth in Stellar_Occultation

minimum_observed_ring_azimuth specifes the smallest value for observed_ring_azimuth in the data file. Values range from 0 to 360 in units of degrees. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

minimum_observed_ring_elevation in Radio_Occultation

minimum_observed_ring_elevation specifes the smallest value for observed_ring_elevation in the data file. Only used if the value is not constant over the observation. Values range from -90 to %2B90 in units of degrees. Not intended for use in the data file. Nillable, in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: -90

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

minimum_observed_ring_elevation in Stellar_Occultation

minimum_observed_ring_elevation specifes the smallest value for observed_ring_elevation in the data file. Only used if the value is not constant over the observation. Values range from -90 to %2B90 in units of degrees. Not intended for use in the data file. Nillable, in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: -90

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

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_radial_sampling_interval in Radio_Occultation

minimum_radial_sampling_interval indicates the smallest radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the radial_resolution because a profile may be over-sampled. If the value of radial_sampling_interval varies, the minimum and maximum attributes are required in labels. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended to be used as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

minimum_radial_sampling_interval in Stellar_Occultation

minimum_radial_sampling_interval indicates the smallest radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the radial_resolution because a profile may be over-sampled. If the value of radial_sampling_interval varies, the minimum and maximum attributes are required in labels. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended to be used as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

minimum_ring_longitude in Radio_Occultation

minimum_ring_longitude specifes one boundary for the ring longitude range in the data; normally the smallest value. However, for ranges that cross the prime meridian, the minimum ring longitude will have a value greater than the maximum ring longitude. Values range from 0 to 360 in units of degrees. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

minimum_ring_longitude in Stellar_Occultation

minimum_ring_longitude specifes one boundary for the ring longitude range in the data; normally the smallest value. However, for ranges that cross the prime meridian, the minimum ring longitude will have a value greater than the maximum ring longitude. Values range from 0 to 360 in units of degrees. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

minimum_ring_radius in Radio_Occultation minimum_ring_radius indicates the smallest ring radius value in the data table. Units are km and are always positive. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

minimum_ring_radius in Stellar_Occultation minimum_ring_radius indicates the smallest ring radius value in the data table. Units are km and are always positive. Required in label files for ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

minimum_scaled_value in Object_Statistics The minimum_scaled_value attribute provides the minimum value after application of scaling_factor 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: Number

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

minimum_wavelength in Radio_Occultation minimum_wavelength is the smallest wavelength used in the observation. Optional in labels. Used with maximum_wavelength when the observation is over a wavelength range. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

minimum_wavelength in Stellar_Occultation minimum_wavelength is the smallest wavelength used in the observation. Optional in labels. Used with maximum_wavelength when the observation is over a wavelength range. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: 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

Nillable: false

Attribute Concept: 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

Nillable: 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

Nillable: false

Attribute Concept: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

observed_event_start_tdb in Radio_Occultation

observed_event_start_tdb indicates the value for earliest time in the described data, and is given in observed_event_tdb format. Optional in labels; not intended for use as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

observed_event_start_tdb in Stellar_Occultation

observed_event_start_tdb indicates the value for earliest time in the described data, and is given in observed_event_tdb format. Optional in labels; not intended for use as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

observed_event_stop_tdb in Radio_Occultation

observed_event_stop_tdb indicates the value for latest time in the described data, and is given in observed_event_tdb format. Optional in labels; not intended for use as a table field. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

observed_event_stop_tdb in Stellar_Occultation

observed_event_stop_tdb indicates the value for latest time in the described data, and is given in observed_event_tdb format. Optional in labels; not intended for use as a table field. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

observed_ring_elevation in Radio_Occultation

observed_ring_elevation is an angle measured at a point in the ring plane, starting from the ring plane to the direction of a photon heading to the observer. This angle is positive on the side of the ring plane defined by positive angular momentum, and negative on the opposite side. Values range from -90 to %2B90 in units of degrees. This angle is constant for stellar occultations, but may vary significantly during radio occultations. Note: The direction of positive angular momentum points toward the IAU-defined north side of the ring plane for Jupiter, Saturn and Neptune, but IAU-defined south side of the ring plane for Uranus. Required in the label if the value is constant for the observation. If the angle varies for the observation, the min and max attributes are required in the label, and observed_ring_elevation is strongly recommended as a field in the data table. Nillable, in which case the nil_reason should be 'inapplicable'. The above definition of observed_ring_elevation is equivalent to the most common usage of the term 'ring open angle', B.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Radio_Occultation

Minimum Value: -90

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

observed_ring_elevation in Stellar_Occultation

observed_ring_elevation is an angle measured at a point in the ring plane, starting from the ring plane to the direction of a photon heading to the observer. This angle is positive on the side of the ring plane defined by positive angular momentum, and negative on the opposite side. Values range from -90 to %2B90 in units of

degrees. This angle is constant for stellar occultations, but may vary significantly during radio occultations. Note: The direction of positive angular momentum points toward the IAU-defined north side of the ring plane for Jupiter, Saturn and Neptune, but IAU-defined south side of the ring plane for Uranus. Required in the label if the value is constant for the observation. If the angle varies for the observation, the min and max attributes are required in the label, and observed_ring_elevation is strongly recommended as a field in the data table. Nillable, in which case the nil_reason should be 'inapplicable'. The above definition of observed_ring_elevation is equivalent to the most common usage of the term 'ring open angle', B.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: -90

Maximum Value: 90

Nillable: false

Steward: rings

Namespace Id: rings

observing_system_component in Observing_System The observing_system_component association is a relationship to Observing_System_Component.

Type: Association

occultation_type in Radio_Occultation occultation_type distinguishes between three types of occultation experiments: Stellar, Solar, and Radio. Stellar occultations involve observing a star as a targeted ring or body passes in front, as seen from either a spacecraft or Earth-based observatory. Solar occultations are similar to stellar occultations except that the Sun is used in place of a star. Radio occultations typically involve observing the continuous-wave radio transmissions from a

spacecraft as it passes behind the target as seen from a radio telescope on Earth or another spacecraft. Required in labels of occultation observations. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Radio, Solar, Stellar

occultation_type in Radio_Occultation_Support occultation_type distinguishes between three types of occultation experiments: Stellar, Solar, and Radio. Stellar occultations involve observing a star as a targeted ring or body passes in front, as seen from either a spacecraft or Earth-based observatory. Solar occultations are similar to stellar occultations except that the Sun is used in place of a star. Radio occultations typically involve observing the continuous-wave radio transmissions from a spacecraft as it passes behind the target as seen from a radio telescope on Earth or another spacecraft. Required in labels of occultation observations. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Radio, Solar, Stellar

occultation_type in Stellar_Occultation occultation_type distinguishes between three types of occultation experiments: Stellar, Solar, and Radio. Stellar occultations involve observing a star as a targeted ring or body passes in front, as seen from either a spacecraft or Earth-based observatory. Solar occultations are similar to stellar occultations except that the Sun is used in place of a star. Radio occultations typically involve observing the continuous-wave radio transmissions from a spacecraft as it passes behind the target as seen from a radio telescope on Earth or another spacecraft. Required in labels of occultation observations. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Radio, Solar, Stellar

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Direction

Conceptual Domain: Short_String

Steward: ops

Namespace Id: pds

orbit_number in Radio_Occultation orbit_number if present is the value assigned by the mission for the orbit number associated with the observation. Optional in labels of occultation observations and may be used multiple times. Nillable, the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

orbit_number in Radio_Occultation_Support orbit_number if present is the value assigned by the mission for the orbit number associated with the observation. Optional in labels of occultation observations and may be used multiple times. Nillable, the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

orbit_number in Stellar_Occultation orbit_number if present is the value assigned by the mission for the orbit number associated with the observation. Optional in labels of occultation observations and may be used multiple times. Nillable, the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

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

Nillable: false

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

Nillable: false

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

Nillable: false

Attribute Concept: ID

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: ID

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: 7-Bit ASCII Text, CDF 3.4 ISTP/IACG, 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Pattern

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: $10\dot{\S}+/\S+$

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

Nillable: 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

Nillable: 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

Nillable: 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((0̇+)?))?)(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((0̇+)?))?)(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

Nillable: 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((0̇+)?))?)(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

Nillable: 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[0-6̇])))(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((0̇+)?))?)(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[0̇-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((0̇+)?))?)(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

Nillable: 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((0̇+)?))?)(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

Nillable: 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)((ḃ[0-9]+)—)(Z—),
(([0-1][0-9])—(2[0-4]))(Z—), 24:00((:00((0̇+)—))—)(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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Flag

Conceptual Domain: Boolean

Steward: ops

Namespace Id: pds

planetary_occultation_flag in Radio_Occultation The planetary_occultation_flag is a yes-or-no flag that indicates whether a ring occultation track also intersects the planet. Required in labels of ring occultation observations. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 1

Nillable: false

Steward: rings

Namespace Id: rings

Value: N, Y

planetary_occultation_flag in Radio_Occultation_Support The planetary_occultation_flag is a yes-or-no flag that indicates whether a ring occultation track also intersects the planet. Required in labels of ring occultation observations. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 1

Nillable: false

Steward: rings

Namespace Id: rings

Value: N, Y

planetary_occultation_flag in Stellar_Occultation The planetary_occultation_flag is a yes-or-no flag that indicates whether a ring occultation track also intersects the planet. Required in labels of ring occultation observations. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'. Normally not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 1

Nillable: false

Steward: rings

Namespace Id: rings

Value: N, Y

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

Nillable: 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 in Primary_Result_Summary The processing_level 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

Nillable: false

Steward: pds

Namespace Id: pds

Value: Calibrated, Derived, Partially Processed, Raw, Telemetry

processing_level_id - *Deprecated* 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: ID

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

Nillable: 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

Nillable: 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: 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

Nillable: true

Attribute Concept: 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

Nillable: false

Attribute Concept: Time

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: ID

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

radial_resolution in Radio_Occultation radial_resolution indicates the nominal radial distance over which changes in ring properties can be detected within a data product. Note: this value may be larger than the radial_sampling_interval value, because a data product can be oversampled. Required in labels if the value is fixed, as it is for stellar occultations. If the value varies, the corresponding minimum and maximum attributes must be used instead. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended to be used as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

radial_resolution in Stellar_Occultation radial_resolution indicates the nominal radial distance over which changes in ring properties can be detected within a data product. Note: this value may be larger than the radial_sampling_interval value, because a data product can be over-sampled. Required in labels if the value is fixed, as it is for stellar occultations. If the value varies, the corresponding minimum and maximum attributes must be used instead. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended to be used as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

radial_sampling_interval in Radio_Occultation
radial_sampling_interval indicates the radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the radial_resolution because a profile may be over-sampled. Required in labels if the value is fixed. If the value varies, the corresponding minimum and and maximum attributes must be used instead. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended to be used as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

radial_sampling_interval in Stellar_Occultation
radial_sampling_interval indicates the radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the radial_resolution because a profile may be over-sampled. Required in labels if the value is fixed. If the value varies, the corresponding minimum and and maximum attributes must be used instead. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended to be used as a table field.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: 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

Nillable: 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: ASCII_Integer

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: ASCII_Integer

Class Name: Table_Base

Minimum Value: 1

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Text

Conceptual Domain: Text

Steward: pds

Namespace Id: pds

reference_time_utc in Radio_Occultation reference_time_utc provides a date and time in UTC format. Given in a label when time values in a table are given as elapsed seconds offset from a reference time. Specifically required in the label for radio occultation data, but is not used for stellar occultation data. Required in the label for radio occultation data, or anytime spacecraft_event_time is a table field. Not used for stellar occultations. Nillable, the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Class Name: Radio_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: true

Steward: rings

Namespace Id: rings

reference_time_utc in Radio_Occultation_Support
reference_time_utc provides a date and time in UTC format. Given in a label when time values in a table are given as elapsed seconds offset from a reference time. Specifically required in the label for radio occultation data, but is not used for stellar occultation data. Required in the label for radio occultation data, or anytime spacecraft_event_time is a table field. Not used for stellar occultations. Nillable, the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Class Name: Radio_Occultation_Support

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: true

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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,

document_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

Nillable: 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

Nillable: false

Attribute Concept: Text

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: Text

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: 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

Nillable: false

Attribute Concept: 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

Nillable: 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

ring_event_start_tdb in Radio_Occultation ring_event_start_tdb indicates the value for earliest time in the described data, and is given in ring_event_tdb format. Optional in labels; not intended for use as a table field. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

ring_event_start_tdb in Stellar_Occultation ring_event_start_tdb indicates the value for earliest time in the described data, and is given in ring_event_tdb format. Optional in labels; not intended for use as a table field. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

ring_event_start_time_utc in Radio_Occultation
ring_event_start_time_utc gives the UTC time corresponding to the earliest time given by ring_event_time or ring_event_tdb in the data table. ring_event_start_time_utc is required for all ring occultation data. ring_event_start_time_utc is required label attribute for all ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Class Name: Radio_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: true

Steward: rings

Namespace Id: rings

ring_event_start_time_utc in Stellar_Occultation

ring_event_start_time_utc gives the UTC time corresponding to the earliest time given by ring_event_time or ring_event_tdb in the data table. ring_event_start_time_utc is required for all ring occultation data. ring_event_start_time_utc is required label attribute for all ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Class Name: Stellar_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: true

Steward: rings

Namespace Id: rings

ring_event_stop_tdb in Radio_Occultation ring_event_stop_tdb indicates the value for latest time in the described data, and is given in ring_event_tdb format. Optional in labels; not intended for use as a table field. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

ring_event_stop_tdb in Stellar_Occultation ring_event_stop_tdb indicates the value for latest time in the described data, and is given in ring_event_tdb format. Optional in labels; not intended for use as a table field. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Time

Valid Units: day, hr, julian day, microseconds, min, ms, s, yr

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

ring_event_stop_time_utc in Radio_Occultation
ring_event_stop_time_utc gives the UTC time corresponding to the latest time given by ring_event_time or ring_event_tdb in the data table. ring_event_stop_time_utc is required for all ring occultation data. ring_event_stop_time_utc is required label attribute for all ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Class Name: Radio_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: true

Steward: rings

Namespace Id: rings

ring_event_stop_time_utc in Stellar_Occultation

ring_event_stop_time_utc gives the UTC time corresponding to the latest time given by ring_event_time or ring_event_tdb in the data table. ring_event_stop_time_utc is required for all ring occultation data. ring_event_stop_time_utc is required label attribute for all ring occultation data. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Class Name: Stellar_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: true

Steward: rings

Namespace Id: rings

ring_observation_id in Radio_Occultation The ring_observation_id uniquely identifies a single experiment or observation (image, occultation profile, spectrum, etc.) within a rings-related data set. This is the common id by which data are identified within the Rings Node catalog. It describes the smallest quantity of data that can be usefully cataloged or analyzed by itself. Note that a single observation may be associated with multiple data products (e.g. raw and calibrated versions of an image). Note also that a single data product may be associated with multiple observations (e.g. a single WFPC2 image file containing four different images). A ring observation id is constructed using numbers, upper case letters, forward slash, colon, period, dash, and underscore as follows: p/type/host/inst/time/... where p is a single-letter planet id (one of J, S, U, or N); type is IMG for images, OCC for occultation profile, etc.; host is the instrument host id, inst is the instrument id; time is the observation time as a date or instrument clock count; further information identifying the observation can then be appended as appropriate. Optional in labels. Nillable, in which case the nil_reason should be 'inapplicable'. Examples: J/IMG/VG2/ISS/20693.01/N J/IMG/VG2/ISS/20693.02/W S/IMG/HST/WFPC2/1995-08-10/U2TF020B/PC1 U/OCC/VG2/RSS/1986-01-24/S U/OCC/VG2/RSS/1986-01-24/X N/OCC/VG2/PPS/1989-08-25/SIGMA_SGR

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

ring_observation_id in Radio_Occultation_Support The ring_observation_id uniquely identifies a single experiment or observation (image, occultation profile, spectrum, etc.) within a rings-related data set. This is the common id by which data are identified within the Rings Node catalog. It describes the smallest quantity of data that can be usefully cataloged or analyzed by itself. Note that a single observation may be associated with multiple data products (e.g. raw and calibrated versions of an image). Note also that a single data product may be associated with multiple observations (e.g. a single WFPC2 image file containing four different images). A ring observation id is constructed using numbers, upper case letters, forward slash, colon, period, dash, and underscore as follows: p/type/host/inst/time/... where p is a single-letter planet id (one of J, S, U, or N); type is IMG for images, OCC for occultation profile, etc.; host is the instrument host id, inst is the instrument id; time is the observation time as a date or instrument clock count; further information identifying the observation can then be appended as appropriate. Optional in labels. Nillable, in which case the nil_reason should be 'inapplicable'. Examples: J/IMG/VG2/ISS/20693.01/N J/IMG/VG2/ISS/20693.02/W S/IMG/HST/WFPC2/1995-08-10/U2TF020B/PC1 U/OCC/VG2/RSS/1986-01-24/S U/OCC/VG2/RSS/1986-01-24/X N/OCC/VG2/PPS/1989-08-25/SIGMA_SGR

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

ring_observation_id in Rings_Supplement The ring_observation_id uniquely identifies a single experiment or observation (image, occultation profile, spectrum, etc.) within a rings-related data set. This is the common id by which data are identified within the Rings Node catalog. It describes the smallest quantity of data that can be usefully cataloged or analyzed by itself. Note that a single observation may be associated with multiple data products (e.g. raw and calibrated versions of an image). Note also that a single data product may be associated with multiple observations (e.g. a single WFPC2 image file containing four different images). A ring observation id is constructed using numbers, upper case letters, forward slash, colon, period, dash, and underscore as follows: p/type/host/inst/time/... where p is a single-letter planet id (one of J, S, U, or N); type is IMG for images, OCC for occultation profile, etc.; host is the instrument host id, inst is the instrument id; time is the observation time as a date or instrument clock count; further information identifying the observation can then be appended as appropriate. Optional in labels. Nillable, in which case the nil_reason should be 'inapplicable'. Examples: J/IMG/VG2/ISS/20693.01/N J/IMG/VG2/ISS/20693.02/W S/IMG/HST/WFPC2/1995-08-10/U2TF020B/PC1 U/OCC/VG2/RSS/1986-01-24/S U/OCC/VG2/RSS/1986-01-24/X N/OCC/VG2/PPS/1989-08-25/SIGMA_SGR

Type: ASCII_Short_String_Collapsed

Class Name: Rings_Supplement

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

ring_observation_id in Stellar_Occultation The ring_observation_id uniquely identifies a single experiment or observation (image, occultation profile, spectrum, etc.) within a rings-related data set. This is the common id by which data are identified within the Rings Node catalog. It describes the smallest quantity of data that can be usefully cataloged or analyzed by itself. Note that a single observation may be associated with multiple data products (e.g. raw and calibrated versions of an image). Note also that a single data product may be associated with multiple observations (e.g. a single WFPC2 image file containing four different images). A ring observation id is constructed using numbers, upper case letters, forward slash, colon, period, dash, and underscore as follows: p/type/host/inst/time/... where p is a single-letter planet id (one of J, S, U, or N); type is IMG for images, OCC for occultation profile, etc.; host is the instrument host id, inst is the instrument id; time is the observation time as a date or instrument clock count; further information identifying the observation can then be appended as appropriate. Optional in labels. Nillable, in which case the nil_reason should be 'inapplicable'. Examples: J/IMG/VG2/ISS/20693.01/N J/IMG/VG2/ISS/20693.02/W S/IMG/HST/WFPC2/1995-08-10/U2TF020B/PC1 U/OCC/VG2/RSS/1986-01-24/S U/OCC/VG2/RSS/1986-01-24/X N/OCC/VG2/PPS/1989-08-25/SIGMA_SGR

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

ring_occultation_direction in Radio_Occultation
ring_occultation_direction indicates the radial direction of an occultation track. This refers to the observed occultation track overall,

not to the subset that might appear in a particular file. Permitted values are 'Ingress', 'Egress', 'Both', and 'Multiple'. The value 'multiple' is only used for some Hubble-based occultations where the occultation track is not monotonic over relatively short time scales. Required in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Both, Egress, Ingress, Multiple

ring_occultation_direction in Radio_Occultation_Support

ring_occultation_direction indicates the radial direction of an occultation track. This refers to the observed occultation track overall, not to the subset that might appear in a particular file. Permitted values are 'Ingress', 'Egress', 'Both', and 'Multiple'. The value 'multiple' is only used for some Hubble-based occultations where the occultation track is not monotonic over relatively short time scales. Required in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Both, Egress, Ingress, Multiple

ring_occultation_direction in Stellar_Occultation
ring_occultation_direction indicates the radial direction of an occultation track. This refers to the observed occultation track overall, not to the subset that might appear in a particular file. Permitted values are 'Ingress', 'Egress', 'Both', and 'Multiple'. The value 'multiple' is only used for some Hubble-based occultations where the occultation track is not monotonic over relatively short time scales. Required in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Both, Egress, Ingress, Multiple

ring_profile_direction in Radio_Occultation ring_profile_direction indicates the radial direction of a ring occultation within a particular data product. Possible values are 'Ingress', 'Egress', or 'Multiple'. The value 'Multiple' is only used for some Hubble-based occultations where the occultation track is not monotonic over relatively short time scales. Required in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Egress, Ingress, Multiple

ring_profile_direction in Radio_Occultation_Support

ring_profile_direction indicates the radial direction of a ring occultation within a particular data product. Possible values are 'Ingress', 'Egress', or 'Multiple'. The value 'Multiple' is only used for some Hubble-based occultations where the occultation track is not monotonic over relatively short time scales. Required in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Egress, Ingress, Multiple

ring_profile_direction in Stellar_Occultation ring_profile_direction indicates the radial direction of a ring occultation within a particular data product. Possible values are 'Ingress', 'Egress', or 'Multiple'. The value 'Multiple' is only used for some Hubble-based occultations where the occultation track is not monotonic over relatively short time scales. Required in labels of ring occultation observations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not intended as a value for a table field.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

Value: Egress, Ingress, Multiple

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

Nillable: 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: Number

Conceptual Domain: Real

Steward: pds

Namespace Id: pds

sampling_parameter_interval in Radio_Occultation_Support
sampling_parameter_interval specifies the spacing of points at which data are sampled and at which a value for an instrument or dataset parameter is available. Used in labels for radio occultation supplemental files. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Class Name: Radio_Occultation_Support

Nillable: true

Steward: rings

Namespace Id: rings

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_name in Radio_Occultation_Support
sampling_parameter_name provides the name of the parameter which determines the sampling interval for uniformly sampled data. Used in labels for radio occultation supplemental files. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: false

Attribute Concept: Unit

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

sampling_parameter_unit in Radio_Occultation_Support sampling_parameter_unit provides the units of the parameter which determines the sampling interval for uniformly sampled data. Used in labels for radio occultation supplemental files. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: false

Attribute Concept: Number

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Text

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Text

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

Nillable: 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

Nillable: 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

Nillable: 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

source_pds3_id in Radio_Occultation source_pds3_id is the PDS3 product identifier for the source product. If the source product has been archived under PDS4, use the Internal_Reference class in the Investigation_Area. source_pds3_id is required in occultation labels and may be used multiple times. The acceptable nil_reasons are 'inapplicable' and 'unknown'.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

source_pds3_id in Rings_Supplement source_pds3_id is the PDS3 product identifier for the source product. If the source product has been archived under PDS4, use the Internal_Reference class in the Investigation_Area. source_pds3_id is required in occultation labels and may be used multiple times. The acceptable nil_reasons are 'inapplicable' and 'unknown'.

Type: ASCII_Short_String_Collapsed

Class Name: Rings_Supplement

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

source_pds3_id in Stellar_Occultation source_pds3_id is the PDS3 product identifier for the source product. If the source product has been archived under PDS4, use the Internal_Reference class in the Investigation_Area. source_pds3_id is required in occultation labels and may be used multiple times. The acceptable nil_reasons are 'inapplicable' and 'unknown'.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: true

Steward: rings

Namespace Id: rings

spacecraft_event_start_time_utc in Radio_Occultation spacecraft_event_start_time_utc gives the UTC time corresponding to the earliest time given by spacecraft_event_time in the data table. However, while spacecraft_event_time is given as seconds offset from a reference time, spacecraft_event_start_time_utc is given as a UTC date time. spacecraft_event_start_time_utc is required in the label for radio occultation data, but is not used for stellar occultation data. Required in the label for radio occultation data. Not used for stellar occultations. Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Class Name: Radio_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: true

Steward: rings

Namespace Id: rings

spacecraft_event_stop_time_utc in Radio_Occultation
spacecraft_event_stop_time_utc gives the UTC time corresponding to the latest time given by spacecraft_event_time in the data table. However, while spacecraft_event_time is given as seconds offset from a reference time, spacecraft_event_stop_time_utc is given as a UTC date time. spacecraft_event_stop_time_utc is required in the label for radio occultation data, but is not used for stellar occultation data. Required in the label for radio occultation data. Not used for stellar occultations.Nillable if the observation is not an occultation in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Date_Time_UTC

Class Name: Radio_Occultation

Format:
YYYY-MM-DDTHH:MM:SS.SSSZ/YYYY-DOYTHH:MM:SS.SSSZ

Nillable: true

Steward: rings

Namespace Id: rings

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: ID

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: sr

specified_unit_id in Units_of_Spectral_Irradiance 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_Spectral_Irradiance

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: W*m**-3

specified_unit_id in Units_of_Spectral_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_Spectral_Radiance

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: W*m**-3*sr**-1

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

Nillable: 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

Nillable: 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

Nillable: 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

specified_unit_id in Units_of_Wavenumber 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_Wavenumber

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: cm**-1

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

spice_filename in Radio_Occultation_Support spice_filename gives the file name(s) of SPICE files used in the analysis. Only used if the SPICE files can not be identified using a LID or LIDVID. Otherwise the association is made in the Reference_Class using the Internal_Reference class. Optional in labels for radio occultation. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Short_String_Collapsed

Class Name: Radio_Occultation_Support

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: false

Attribute Concept: Number

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

Nillable: false

Attribute Concept: Number

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: Number

Conceptual Domain: Real

Steward: pds

Namespace Id: pds

star_name in Stellar_Occultation star_name provides the identifying name of star, including the catalog name if necessary. Examples include 'sigma Sgr' and 'SAO 123456' (for star number 123456 in the Smithsonian Astrophysical Observatory catalog). Use 'Sun' for solar occultations. Required in labels for stellar and solar occultations. Nillable if the observation is not a ring occultation in which case the nil_reason should be 'inapplicable'. Not used for radio occultations.

Type: ASCII_Short_String_Collapsed

Class Name: Stellar_Occultation

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: rings

Namespace Id: rings

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

Nillable: false

Attribute Concept: 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)

Nillable: true

Attribute Concept: 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: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: true

Attribute Concept: 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)

Nillable: true

Attribute Concept: 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

Nillable: true

Attribute Concept: Time

Conceptual Domain: Time

Steward: pds

Namespace Id: pds

sub_stellar_clock_angle in Stellar_Occultation sub_stellar_clock_angle is an angle measured at a point in the ring plane, from the direction toward a star to the local radial direction. This angle is projected into the ring plane and measured in the clockwise (retrograde) direction. Equivalently, this is the prograde angle from the local radial direction to the direction toward the star. For stellar occultation data, this angle is equal to (180 - OBSERVED_RING_AZIMUTH) mod 360. It is available only for backward compatibility with previously published Cassini VIMS occultation data analysis; observed_ring_azimuth is the preferred quantity for archiving. sub_stellar_clock_angle is an optional data table field for Cassini VIMS occultation data; not recommended for other occultation data. In a label, the min and max variation attributes are optional for Cassini VIMS occultation data; not recommended for other occultation data.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

sub_stellar_ring_azimuth in Stellar_Occultation
sub_stellar_ring_azimuth is an angle measured at a point in the ring plane, starting from the direction of a photon arriving from a star, and ending at the direction of a local radial vector. This angle is projected into the ring plane and measured in the prograde direction. Values range from 0 to 360 in units of degrees. For stellar occultation data, this angle is equal to (observed_ring_azimuth %2B 180) mod 360. It is available only for backward compatibility with previously published Cassini UVIS occultation data analysis; observed_ring_azimuth

is the preferred quantity for archiving. sub_stellar_ring_azimuth is an optional data table field for Cassini UVIS occultation data; not recommended for other occultation data. In a label, the min and max variation attributes are optional for Cassini UVIS occultation data; not recommended for other occultation data.

Type: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Class Name: Stellar_Occultation

Minimum Value: 0

Maximum Value: 360

Nillable: false

Steward: rings

Namespace Id: rings

subfacet1 in Group_Facet1 The subfacet1 attribute provides a subcategorization under the facet1 value. The allowed values are restricted according to the value of facet1.

Type: ASCII_Short_String_Collapsed

Class Name: Group_Facet1

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

subfacet2 in Group_Facet2 The subfacet2 attribute provides a subcategorization under the facet2 value. The allowed values are restricted according to the value of facet2.

Type: ASCII_Short_String_Collapsed

Class Name: Group_Facet2

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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.

Type: ASCII_Short_String_Collapsed

Class Name: Telemetry_Parameters

Minimum Characters: 1

Maximum Characters: 4

Nillable: 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.

Type: ASCII_Short_String_Collapsed

Class Name: Telemetry_Parameters

Minimum Characters: 1

Maximum Characters: 20

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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: ASCII_Real

Unit of Measure Type: Units_of_Angle

Valid Units: arcmin, arcsec, deg, hr, mrad, rad

Specified Unit Id: deg

Class Name: Telescope

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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, Robotic Arm, 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 classifies the instrument host. When more than one value is correct, the value with the finest granularity should be selected. That is, choose "rover" rather than "spacecraft" when both would be correct since rover more narrowly defines the type of instrument host.

Type: ASCII_Short_String_Collapsed

Class Name: Instrument_Host

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Attribute Concept: Type

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: Earth Based - *Deprecated*, Earth-based, Lander, 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

Nillable: 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

Nillable: 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

Nillable: 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 - *Deprecated* 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

Nillable: 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, 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

Nillable: 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

Nillable: 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

Nillable: 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

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 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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_Spectral_Irradiance The type attribute provides a classification for the resource.

Type: ASCII_Short_String_Collapsed

Class Name: Units_of_Spectral_Irradiance

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: Spectral_Irradiance

type in Units_of_Spectral_Radiance The type attribute provides a classification for the resource.

Type: ASCII_Short_String_Collapsed

Class Name: Units_of_Spectral_Radiance

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: Spectral_Radiance

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Type

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: Volume

type in Units_of_Wavenumber The type attribute provides a classification for the resource.

Type: ASCII_Short_String_Collapsed

Class Name: Units_of_Wavenumber

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: Wavenumber

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

Nillable: 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 - *Deprecated* 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: ID

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: sr

unit_id in Units_of_Spectral_Irradiance 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_Spectral_Irradiance

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: SFU, W*m**-2*Hz**-1, W*m**-2*nm**-1, W*m**-3, uW*cm**-2*um**-1

unit_id in Units_of_Spectral_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_Spectral_Radiance

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: W*m**-2*sr**-1*Hz**-1, W*m**-2*sr**-1*nm**-1, W*m**-2*sr**-1*um**-1, W*m**-3*sr**-1, uW*cm**-2*sr**-1*um**-1

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: ID

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: L, m**3

unit_id in Units_of_Wavenumber 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_Wavenumber

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

Value: cm**-1, m**-1, nm**-1

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

Nillable: 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_Spectral_Irradiance, Units_of_Spectral_Radiance, Units_of_Storage, Units_of_Temperature, Units_of_Time, Units_of_Velocity, Units_of_Voltage, Units_of_Volume, Units_of_Wavenumber

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

Nillable: 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_Spectral_Irradiance, Units_of_Spectral_Radiance, Units_of_Storage, Units_of_Temperature, Units_of_Time, Units_of_Velocity, Units_of_Voltage, Units_of_Volume, Units_of_Wavenumber

unknown_constant in Special_Constants The unknown_constant attribute 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

Nillable: 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

Nillable: false

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: ASCII_AnyURI

Class Name: Resource

Nillable: false

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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Minimum

Conceptual Domain: Short_String

Steward: pds

Namespace Id: pds

Value: -32752, 1, 3, 5, FF7FFFFA, FFEFFFFF

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

Nillable: 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

Nillable: 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)

Nillable: false

Attribute Concept: 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

Nillable: 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

Nillable: 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)

Nillable: false

Attribute Concept: 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

Nillable: false

Attribute Concept: Text

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

Nillable: false

Attribute Concept: Text

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: false

Attribute Concept: Offset

Conceptual Domain: Real

Steward: pds

Namespace Id: pds

vector in Geometry The vector assocation 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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]+)

Nillable: 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

Nillable: 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]+)

Nillable: 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

Nillable: false

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

wavelength in Radio_Occultation wavelength of the observation. Optional in labels. If the observation is over a wavelength range, use the corresponding minimum and maximum attributes instead. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Radio_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

wavelength in Stellar_Occultation wavelength of the observation. Optional in labels. If the observation is over a wavelength range, use the corresponding minimum and maximum attributes instead. Nillable in which case the nil_reason should be 'inapplicable'.

Type: ASCII_Real

Unit of Measure Type: Units_of_Length

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

Class Name: Stellar_Occultation

Nillable: false

Steward: rings

Namespace Id: rings

wavelength_range in Science_Facets The wavelength range within which the data collection occurred or which otherwise characterizes the observation(s). Boundaries are vague, and there is overlap.

Type: ASCII_Short_String_Collapsed

Class Name: Science_Facets

Minimum Characters: 1

Maximum Characters: 255

Nillable: false

Steward: pds

Namespace Id: pds

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

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

Nillable: false

Attribute Concept: Number

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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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

Nillable: 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: Number

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

Nillable: false

Attribute Concept: Number

Conceptual Domain: Real

Steward: pds

Namespace Id: pds

25 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 metadata.

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 "¡" and "¿". For example '¡date¿' 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 ¡date unit="year"¿2009¡/date¿

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 ¡tag¿, contains 'content', and ends with ¡/tag¿. For example, "¡date¿2009¡/date¿" 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