

PDS4 Data Dictionary - Abridged - V.0.2.0.0.d

PDS4 Data Design Working Group

Version 0.2.0.0.d - Mon Dec 13 20:27:43 PST 2010

Generated from the PDS4 Information Model Version 0.2.0.0.d

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1. Introduction

The Planetary Data System (PDS) PDS4 Data Dictionary defines the organization and components of PDS4 product labels. Components of a product label include classes and their attributes.

2. Audience

The PDS4 Data Dictionary is intended for use by programmers and data engineers who require formal definitions of the components and the organization of PDS4 products.

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

The PDS4 Data Dictionary defines the common and discipline level classes and attributes used to create PDS4 product labels. It also defines the meta-attributes (i.e. attributes about attributes) used to define attributes. This abridged version includes only one entry for each attribute where the unabridge version includes an entry for each use of an attribute in a class.

5. Related Documents

- a. Controlling Documents
 - PDS4 Information Model Specification - The PDS4 Information Model is used as the source for class, attribute, and data type definitions. The model is presented in document format as the PDS4 Information Model Specification.
 - ISO/IEC 11179:3 Registry Metamodel and Basic Attributes Specification, 2003. - The ISO/IEC 11179 specification provides the schema for the PDS4 data dictionary.
- b. Reference Documents
 - Planetary Science Data Dictionary - The online version of the PDS3 data dictionary was used as the source for a few data elements being carried over from the PDS3 data standards.

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.

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

- An *attribute* is a property or characteristic that provides a unit of information about a *class*.
- 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.
- A *conceptual object* is an object that is not tangible. For example, a mission is a *conceptual object*.
- A *data element* is a unit of data for which the definition, identification, representation and *permissible values* are specified by means of a set of attributes. For example, the concept of a *calibration_lamp_state_flag* is used in the PDS archive to indicate whether the lamp used for onboard camera calibration was turned on or off during the capture of an image. The *data element* aspect of this concept is the named attribute (or data element) *calibration_lamp_state_flag*.
- A *data object* is constructed from a *class*. It is a specific instance of a *class*. A *data object* can be one of three types, digital, conceptual, or physical.
- A *descriptive class* provides information that is useful for the interpretation of a *data object*.
- A *digital object* is an object consisting of digital information. For example, an image is a *digital object*.
- *Formal* as used in the definition of attributes that are names indicates that an established procedure was involved in creating the name.
- A *globally unique identifier* or GUID is a special type of identifier used to provide a reference number which is unique in any context. Note: We
- *Local* indicates a local scope where scope is an enclosing context where values and expressions are associated.
- *Logical* as used in the definition of logical identifier indicates that the identifier logically groups a set of objects.
- A *physical object* is an object that is tangible. For example, a spacecraft instrument is a *physical object*.
- A *resource* is the referent of any Uniform Resource Identifier. The concept of *resource* is primitive in the Web architecture and is used in the definition of its fundamental elements.
- A *structural class* provides information that defines the components and organization of a *digital object*.

PDS4 Attribute Definitions - Mon Dec 13 20:27:43 PST 2010

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- **Attributes under steward:pds**

- **abstract_desc**

steward: **pds**
name space id: **pds:**
version: **0.2.0.0.d**

- description: **The abstract desc attribute provides a summary of a text, scientific article, or document.**
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **acknowledgement_text**

steward: **pds**
name space id: **pds:**
version: **0.2.0.0.d**

- description: **The acknowledgement_text attribute is a character string which recognizes another's contribution, authority, or right.**
- data_type: **ASCII_Text_Preserved**

- minimum_characters: 1
- maximum_characters: 2147483647

- **actor_name**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The actor_name attribute names the person or organization performing an act.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **alternate_id**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The alternate id attribute is an additional identifier supplied by the data provider. This identifier has no role in any system function.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **alternate_telephone_number**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The telephone_number attribute provides a telephone number in international notation in compliance with the E.164 telephone number format recommendation.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: 1
- maximum_characters: 30
- permissible value
`+cc ddd ddd dddd`

- **alternate_title**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The alternate title attribute provides one or more alternate names for a product.**
- data_type: **UTF8_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **archive_status**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **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.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- permissible values
ACCUMULATING
ARCHIVED
IN LIEN_RESOLUTION
IN_PEER REVIEW
IN_QUEUE
LOCALLY_ARCHIVED
PRE_PEER REVIEW
SAVED
SUPERSEDED
SAFED
IN_QUEUE"ACCUMULATING
PRE_PEER REVIEW"ACCUMULATING
IN_PEER REVIEW"ACCUMULATING
IN LIEN_RESOLUTION"ACCUMULATING
LOCALLY_ARCHIVED"ACCUMULATING
ARCHIVED"ACCUMULATING

- **author_list**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The author list attribute lists the composers of a work.**
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **510**

- **axes**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The axes attribute provides a count of the axes.**
- data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **16**

- **axis_order**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The axis order attribute gives the axis index that varies fastest with respect to storage order.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible value
FIRST_INDEX_FASTEST

- **begin_date**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The begin_date attribute provides the lower bound of the time interval within which the defined item is in effect.**
- data_type: **ASCII_Date_YMD**
- minimum_characters: **1**
- maximum_characters: **10**

- **bits**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The bits attribute provides the number of bits**
- data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **32**

- **bit_mask**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The bit mask attribute provides a bit mask**
- data_type: **ASCII_Integer_Hex**

- **bytes**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The bytes attribute provides the number of bytes.**
- data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **character_constraint**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The character constraint attribute limits the characters allowed.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **character_encoding**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The character encoding attribute identifies the standard that maps a set of allowed characters to their machine readable code.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **citation_text**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The citation_text attribute is a character string containing a literature or other citation in sufficient detail that the material could be located in PDS or elsewhere.**
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **class_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The **class_name** attribute provides a common name for a class.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **comment**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The **comment** attribute is a character string expressing one or more remarks or thoughts relevant to the object.
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **confidence_level_note**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: 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.
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **copyright**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: 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.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **creation_date_time**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The **creation date time** attribute provides a date and time when the object was created.
- data_type: **ASCII_Date_Time**

- **data_element_concept**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The **data_element_concept** attribute is a classification of the data elements. The data element concept for axes is DEC_COUNT since all data elements ending in "s" imply count.
- data_type: **ASCII_Short_String_Collapsed**

- minimum_characters: **1**
- maximum_characters: **255**

- **data_set_desc**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **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).**
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **data_set_id**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The data set id provides a formal name used to refer to a data set.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **data_set_name**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **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**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **data_set_release_date**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **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.**
- data_type: **ASCII_Date_YMD**

- **data_set_terse_desc**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **A one line description of the data set**
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **5000**

- **data_type**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The data_type attribute provides the hardware representation used to store a value.
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
 - minimum_characters: 1
 - maximum_characters: 30
 - permissible values
 - ascii_complex
 - ascii_integer
 - ascii_real
 - binary_coded_decimal
 - bit_string
 - boolean
 - character
 - complex
 - date
 - ebcdic_character
 - float
 - ibm_complex
 - ibm_integer
 - ibm_real
 - ibm_unsigned_integer
 - ieee_complex
 - ieee_real
 - integer
 - lsb_bit_string
 - lsb_integer
 - lsb_unsigned_integer
 - mac_complex
 - mac_integer
 - mac_real
 - mac_unsigned_integer

- **date_time**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The date_time attribute provides the date and time of an event.
- data_type: **ASCII_Date_Time**

- **default_unit_id**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The default unit id attribute provides the unit id used when minimum and maximum values are provided as attribute constraints in the data dictionary.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **definition**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The definition attribute provides a statement, picture in words, or account that describes.
- data_type: **ASCII_Text_Preserved**
- minimum_characters: 1
- maximum_characters: 2147483647

- **description**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The description attribute is a character string that provides a statement, picture in words, or account that describes or is otherwise relevant to the object. Dublin Core: An account of the resource.
- data_type: [ASCII_Text_Preserved](#)
- minimum_characters: 1
- maximum_characters: 2147483647

- **designation**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The designation attribute provides a name.
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: 1
- maximum_characters: 255

- **directory_path_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The directory path name attribute provides a sequence of names that locates a directory in a hierarchy of directories.
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: 1
- maximum_characters: 255

- **discipline_desc**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The discipline_desc attribute provides a description for the science discipline
- data_type: [ASCII_Text_Preserved](#)
- minimum_characters: 1
- maximum_characters: 2147483647

- **discipline_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The discipline_name attribute identifies the major academic or scientific domain or specialty of interest to an individual or to a PDS Node.
- data_type: [ASCII_Short_String_Collapsed](#) - Enumerated
- minimum_characters: 1
- maximum_characters: 255
- permissible values
 - Engineering+
 - Geosciences
 - Imaging
 - Navigation_Ancillary_Information_Facility
 - Planetary_Atmospheres
 - Planetary_Plasma_Interactions
 - Planetary_Rings

Radio_Science
Small_Bodies
Engineering

- **document_title**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **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.**
- data_type: [UTF8_Short_String_Collapsed](#)
- minimum_characters: 1
- maximum_characters: 255

- **doi**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The doi attribute gives the Digital Object Identifier for an object, assigned by the appropriate DOI System Registration Agency.**
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: 1
- maximum_characters: 255

- **editor_list**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The editor list attribute lists the editors of a work.**
- data_type: [ASCII_Text_Preserved](#)
- minimum_characters: 1
- maximum_characters: 510

- **electronic_mail_address**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The eletronic mail address attribute provides a mulri-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.**
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: 1
- maximum_characters: 255

- **elements**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The elements attribute provides the count of the number of elements in an axis.**
- data_type: [ASCII_Integer](#)
- minimum_value: 1
- maximum_value: 2147483647

- **encoding_type**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The encoding type attribute indicates the storage algorithm.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **30**

- **end_date**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The end_date attribute provides the upper bound of the time interval within which the defined item is in effect.**
- data_type: **ASCII_Date_YMD**
- minimum_characters: **1**
- maximum_characters: **10**

- **enumerated_flag**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The enumerated_flag attribute indicates whether an object has a list of allowed values.**
- data_type: **ASCII_Boolean_TF - Enumerated**
- minimum_characters: **1**
- maximum_characters: **1**

- **error_constant**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The error_constant attribute provides a value that indicates the original value was in error.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **external_standard_id**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The external standard id attribute provides the formal name of a standard not under PDS governance.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **fields**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The fields attribute provides a count of the fields.**
- data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **field_bytes**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The field bytes attribute provides the maximum number of bytes allowed for a field.
- data_type: **ASCII_Integer**
- minimum_value: 1
- maximum_value: 2147483647

- **field_data_type**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The field data type indicates the machine representation in which a field value is digitally stored.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255
- permissible values
 - ASCII_Boolean_TF**
 - ASCII_Date_YMD**
 - ASCII_Integer**
 - ASCII_Real**
 - ASCII_AnyURI**
 - ASCII_Date_DOY**
 - ASCII_Date_Time_DOY**
 - ASCII_Date_Time_UTC**
 - ASCII_Date_Time_YMD**
 - ASCII_LID**
 - ASCII_LIDVID**
 - ASCII_MD5_Checksum**
 - ASCII_Short_String_Collapsed**
 - ASCII_Text_Preserved**
 - ASCII_Short_String_Preserved**
 - ASCII_Time**
 - ASCII_VID**
 - ASCII_DOI**
 - ASCII_Integer_Binary**
 - ASCII_Integer_Hex**
 - ASCII_NonNegative_Integer**

- **field_delimiter**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The field delimiter provides the character or characters that indicate the end of a character string.
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: 2
- maximum_characters: 255
- permissible values
 - 0x09**
 - 0x3B**
 - 0x7C**
 - 0x2C**

- **field_description**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The field description attribute provides a statement, picture in words, or account that describes a field.
- data_type: **ASCII_Text_Preserved**

- minimum_characters: 1
- maximum_characters: 2147483647

- **field_format**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field format attribute indicates how a field value is to be presented in printable characters. The allowed formats are Fortran and C printing formats.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **field_length**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field length attribute indicates the maximum number of characters allowed for a value in a field.**
- data_type: **ASCII_Integer**
- minimum_value: 1
- maximum_value: 2147483647

- **field_location**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field location attribute indicates the starting position for a field in a record.**
- data_type: **ASCII_Integer**
- minimum_value: 1
- maximum_value: 2147483647

- **field_max_logical**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field max logical attribute provides the maximum valid operating range for an instrument (with the same scaling factors and offsets applied to the data values).**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **field_min_logical**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field min logical attribute provides the minimum valid operating range for an instrument (with the same scaling factors and offsets applied to the data values).**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **field_name**

steward: **pds**

name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field name attribute provides a word or a combination of words by which a field is known.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **field_number**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field number attribute provides the location of a field in a series of fields.**
- data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **field_scaling_factor**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field scaling factor attribute provides a number which scales or multiplies with the value of the field.**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **field_unit**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field unit attribute indicates the unit of measurement associated with a field value.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values

mol
arcmin
arcsec
deg
hr
mrad
rad
deg/day
deg/s
rad/s
m2
hz
AU
Angstrom
cm
km
m
micrometer
mm
nm
g
kg
DN
pixel
none
airmass
Pa
bar

```
hPa
mbar
*W*m^-2*sr-1
counts/bin
kilobits/s
electron/DN
km/pixel
m/pixel
mm/pixel
pixel/deg
sr
byte
K
degC
day
microseconds
min
ms
s
yr
cm/s
km/s
m/s
V
mV
L
m3
```

- **field_value_offset**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The field value offset attribute provides a number that indicates a displacement from the value in the field.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **file_local_identifier**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The file local identifier attribute provides a formal name used to refer to a file description within the label. A file local identifier is unique within a label.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **file_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The file name attribute provides the name of a file.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **120**

- **file_size**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The file size attribute provides the size of the file.**
- data_type: **ASCII_Integer**
- minimum_value: **-2147483648**
- maximum_value: **2147483647**

- **file_specification_name**

steward: **pds**
 name space id: **pds:**
 version: **0.2.0.0.d**

- description: **The file specification name attribute provides the file_name prepended by the directory_path to the file.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **first_line**

steward: **pds**
 name space id: **pds:**
 version: **0.2.0.0.d**

- description: **The first_line attribute indicates the line within a source image that corresponds to the first line in a sub-image. Note: For the MPF IMP EDRs, the source image was the complete 256x256 image area within the CCD.**
- data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **first_line_sample**

steward: **pds**
 name space id: **pds:**
 version: **0.2.0.0.d**

- description: **The first_line_sample attribute indicates the sample within a source image that corresponds to the first sample in a sub-image. Note: For the MPF IMP EDRs, the source image was the complete 256x256 image area within the CCD.**
- data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **formation_rule**

steward: **pds**
 name space id: **pds:**
 version: **0.2.0.0.d**

- description: **The formation rule attribute provides a format for a value.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **format_type**

steward: **pds**
 name space id: **pds:**
 version: **0.2.0.0.d**

- description: **The format type attribute indicates the digital format used.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
HTML
TEXT

- **full_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The full_name attribute provides the complete name for a person and includes titles and suffixes.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **100**

- **home**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The home attribute indicates where an object resides. It provides sufficient information to be able to access the object.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **identifier**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The identifier attribute provides the formal name used to refer to a product. An identifier is unique within the PDS and is used to create the logical identifier. The formation rule depends on the type of product. For example the identifier for a Mission product is the value of mission_name.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**
- pattern: **[a-zA-Z]{1}([-_a-zA-Z0-9]*)**

- **institution_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The institution_name attribute provides the name of the associated institution.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **100**
- pattern: **[a-zA-Z]{1}([-_a-zA-Z0-9]*)**

- **instrument_host_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **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.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **120**

- **instrument_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The instrument name attribute provides a unique name for an instrument.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **100**

- **invalid_constant**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The invalid constant attribute provides a value that indicates the original value was invalid.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **20**

- **investigation_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The investigation name attribute provides a unique name for an investigation.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **is_enumerated_flag**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The is_enumerated_flag attribute indicates whether an attribute has an enumerated set of permissible values.**
- data_type: **ASCII_Boolean_TF** - Enumerated
- minimum_characters: **1**
- maximum_characters: **1**
- permissible values
 - T
 - F

- **is_primary_collection**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The is primary collection attribute indicates whether a collection is a primary collection.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **kernel_type**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The kernel type attribute identifies the type of SPICE kernel.**

- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **18**
- permissible values
 LSK
 SCLK
 PCK
 EK
 IK
 FK
 MK

- **language**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The language attribute indicates the natural language used for a designation and definition.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible value
 English

- **last_modification_date_time**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The last modification date time attribute gives the most recent date and time that a change was made.**
- data_type: **ASCII_Date_Time**

- **lidvid_reference**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The lidvid_reference attribute provides the unique identifier for the product that describes the object.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**
- pattern: **URN:NASA:PDS:{1}[a-zA-Z]{1}({^x20}[-/_a-zA-Z0-9])(:*){([0-9]*)(.?)([0-9]*)}**

- **lid_reference**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The lid reference attribute provides the logical_identifier for a product.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **line_display_direction**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The line_display_direction attribute gives the preferred direction for displaying image lines on a display device. The default value is down, meaning lines are displayed top to bottom. When used, "line_display_direction" must be accompanied by "sample_display_direction", which gives the order of sample display within each line. Image**

rotation attributes such as TWIST_ANGLE, CELESTIAL_NORTH_CLOCK_ANGLE, and BODY_POLE_CLOCK_ANGLE are defined assuming that the image is displayed in its preferred orientation.

- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: 1
- maximum_characters: 6
- permissible values
DOWN
LEFT
RIGHT
UP

- **local_identifier**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The local identifier attribute provides the name of a local object; it is unique within a label. The value of local_identifier should be the class name. If several instances of the same class exist, then a numeric suffix is appended to the class name.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **logical_identifier**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: A logical identifier identifies the set of all versions of an object. It is an object identifier without a version.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **maximum**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The maximum attribute indicates the highest value in an object.
- data_type: **ASCII_Real**
- minimum_value: -INF
- maximum_value: INF

- **maximum_characters**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The maximum_characters attribute sets an upper (inclusive) bound on the number of characters.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **maximum_record_length**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The maximum record length attribute sets an upper (inclusive) bound on the number of bytes in a record.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1

- maximum_characters: **255**

- **maximum_scaled_value**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: **The maximum_scaled_value attribute provides the maximum value after application of "scaling_factor" and "offset".**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **maximum_value**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: **The maximum_value attribute sets an upper (inclusive) bound on a value.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **max_record_bytes**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: **The max record bytes attribute provides the maximum number of bytes that may be contained in a record.**
- data_type: **ASCII_Integer**
- minimum_value: **-2147483648**
- maximum_value: **2147483647**

- **md5_checksum**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: **The md5_checksum attribute is the 32-character hexadecimal number computed for a file using the MD5 algorithm.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **32**
- maximum_characters: **32**
- pattern: **([a-f0-9]{32})**

- **mean**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: **The mean attribute (or arithmetic mean) of a list of numbers is the sum of all of the list divided by the number of items in the list.**
- data_type: **ASCII_Real**
- minimum_value: **0.0**
- maximum_value: **INF**

- **median**

steward: **pds**

name space id: **pds**:
version: **0.2.0.0.d**

- description: **The median attribute is the number separating the higher half of a list of numbers from the lower half.**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **minimum**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The minimum attribute indicates the lowest value in an object.**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **minimum_characters**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The minimum_characters attribute sets a lower (inclusive) bound on the number of characters.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **minimum_scaled_value**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The minimum_scaled_value attribute provides the minimum value after application of "scaling_factor" and "offset".**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **minimum_value**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The minimum_value attribute sets a lower (inclusive) bound on a value.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **missing_constant**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The missing constant attribute provides a value that indicates the original value was missing.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **20**

- **name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The name attribute provides a title for the object.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **61**

- **name_space_id**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The name_space_id attribute identifies the XML Schema namespace container for a logical grouping of data elements.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **node_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The node_name attribute provides the name of a PDS Node.
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **100**
- permissible values
 - Engineering
 - Geosciences
 - Imaging
 - Navigation_Ancillary_Information_Facility
 - Planetary_Atmospheres
 - Planetary_Plasma_Interactions
 - Planetary_Rings
 - Radio_Science
 - Small_Bodies
 - unk
 - HQ
 - National_Space_Science_Data_Center
 - PDS_Management

- **not_applicable_constant**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The not applicable constant attribute provides a value that indicates the original value was not applicable.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **20**

- **objectives_summary**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The objectives_summary attribute describes the scientific objectives of an investigation
- data_type: **ASCII_Text_Preserved**

- minimum_characters: 1
- maximum_characters: 2147483647

- **observing_system_component_type**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The Observing System Component Type** attribute indicates whether an observing system component is a 'source' or 'sensor'.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255
- permissible values
SENSOR
SOURCE

- **observing_system_name**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The observing system name** attribute provides a unique identifier for an observing system.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **offset**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The offset** attribute is the displacement from a starting position (in a file, record, etc.). The value of offset starts at zero.
- data_type: **ASCII_Integer**
- minimum_value: -2147483648
- maximum_value: 2147483647

- **pattern**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The pattern** attribute gives the formation rule for a value.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **postal_address_text**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The postal address text** attribute provides a mailing address.
- data_type: **ASCII_Text_Preserved**
- minimum_characters: 1
- maximum_characters: 2147483647

- **primary_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The primary_name attribute provides the name that anchors a list of additional names for an object.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **process_level_id**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The processing level id attribute indicates whether data are raw, reduced (partly processed, but not calibrated), calibrated, or derived (processed beyond calibration, often irreversibly)
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: 1
- maximum_characters: 255
- permissible values
 - RAW
 - RDC
 - CLB
 - DRV

- **producer_full_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The producer_full_name attribute provides the full_name of the individual mainly responsible for the production of a data set. See also This individual does not have to be registered with the PDS.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **product_class**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The product_class attribute identifies the generic class of the product. For example, any black and white image would have product_class=Product_Image_Grayscale.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 100

- **product_subclass**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: The product_subclass attribute provides the name of a subclass under a product_class. For example, User_Manual is a subclass of Product_Document.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **property_name**

steward: **pds**
name space id: **pds**:

version: **0.2.0.0.d**

- description: The property name attribute provides a word or a combination of words by which a property is known.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **property_value**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The property value attribute provides the value assigned to a property.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **publication_date**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The publication_date attribute provides the date when a published item, such as a document or a physical archival volume, was issued.
- data_type: **ASCII_Date_YMD**
- minimum_characters: 1
- maximum_characters: 10

- **records**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The records attribute provides a count of records.
- data_type: **ASCII_Integer**
- minimum_value: 1
- maximum_value: 2147483647

- **record_bytes**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The record bytes attribute provides a count of the bytes in a record.
- data_type: **ASCII_Integer**
- minimum_value: 0
- maximum_value: 2147483647

- **record_delimiter**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The record delimiter attribute provides the character or characters used to indicate the end of a record.
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: 1
- maximum_characters: 255
- permissible values
 - 0xOA
 - 0xOD
 - 0xOD_0xOA

- **reference_association_type**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The reference association type attribute provides the name of the association used in a reference.
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: 1
- maximum_characters: 255
- permissible values
 - has_misellaneous_collection
 - has_browse_collection
 - has_calibration_collection
 - has_data_collection
 - has_document_collection
 - has_geometry_collection
 - has_spice_collection
 - has_xml_schema_collection
 - has_member_collection
 - has_context_collection

- **reference_text**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The reference_text attribute provides a complete bibliographic citation for a published work.
- data_type: [ASCII_Text_Preserved](#)
- minimum_characters: 1
- maximum_characters: 2147483647

- **registered_by**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The registered by attribute provides the name of the person or organization that registered the object.
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: 1
- maximum_characters: 255

- **registration_authority_id**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The registration_authority_id attribute provides the name of the person or organization that registered the object.
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: 1
- maximum_characters: 255

- **repetitions**

steward: **pds**

name space id: **pds**:

version: **0.2.0.0.d**

- description: The repetitions attribute indicates the number of occurrences.
- data_type: [ASCII_Integer](#)
- minimum_value: 1

- maximum_value: **2147483647**

- **revision_id**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The revision_id attribute indicates the revision level of a document, as distinct from the version_id, which tracks revisions to the files and label that constitute the document product.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **role**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The role attribute indicates the role performed by this class.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
PRIMARY
ALTERNATE

- **sample_bit_mask**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The sample_bit_mask attribute identifies the active bits in a sample. Note: In the PDS, the domain of sample_bit_mask is dependent upon the currently-described value in the sample_bits attribute and only applies to integer values. For an 8-bit sample where all bits are active the sample_bit_mask would be 2#11111111#.**
- data_type: **ASCII_Integer_Hex**

- **sample_display_direction**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The sample_display_direction attribute is the preferred orientation of samples within a line for viewing on a display device. The default is right, meaning samples are viewed from left to right on the display. "sample_display_direction" must be used with "line_display_direction". Image rotation attributes such as TWIST_ANGLE, CELESTIAL_NORTH_CLOCK_ANGLE, and BODY_POLE_CLOCK_ANGLE are defined under the assumption that the image is displayed in its preferred orientation.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **6**
- permissible values
DOWN
LEFT
RIGHT
UP

- **saturated_constant**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The saturated constant attribute provides a value that indicates the original value was saturated.**

- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **scaling_factor**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The scaling factor attribute is the scaling factor to be applied to each stored value in order to recover the original observation value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
- data_type: **ASCII_Real**
- minimum_value: -INF
- maximum_value: INF

- **sequence_number**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The sequence number attribute provides a number that is used to order elements in an array.**
- data_type: **ASCII_Integer**
- minimum_value: -2147483648
- maximum_value: 2147483647

- **spacecraft_clock_start_count**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The spacecraft clock start count attribute provides the value of the spacecraft clock at the beginning of a time period of interest.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 30

- **spacecraft_clock_stop_count**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The spacecraft clock stop count attribute provides the value of the spacecraft clock at the end of a time period of interest.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 30

- **standard_deviation**

steward: **pds**
 name space id: **pds**:
 version: **0.2.0.0.d**

- description: **The standard deviation attribute gives the standard deviation of the values.**
- data_type: **ASCII_Real**
- minimum_value: 0.0
- maximum_value: INF

- **starting_point_identifier**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The starting point identifier attribute provides the local_identifier of the file to be accessed first.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **start_bit**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The start bit attribute provides the position of the first bit within an ordered sequence of bits.**
- data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **start_date**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The start_date attribute provides the date when an activity began.**
- data_type: **ASCII_Date_YMD**
- minimum_characters: **1**
- maximum_characters: **10**

- **start_date_time**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The start_date_time attribute provides the date and time at the beginning of a time interval of interest.**
- data_type: **ASCII_Date_Time**

- **steward_id**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The steward attribute indicates the person or organization who manages a set of registered attributes and classes.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **stop_date**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The stop_date attribute provides the date when an activity ended.**
- data_type: **ASCII_Date_YMD**
- minimum_characters: **1**
- maximum_characters: **10**

- **stop_date_time**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The stop_date_time attribute provides the date and time at the end of a time interval of interest.**
- data_type: **ASCII_Date_Time_YMD**

- **submitter_id**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The submitter_id attribute identifies the individual or organization that submitted the item.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **target_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The target name attribute provides a name by which the target is formally known.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **120**

- **telephone_number**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The telephone_number attribute provides a telephone number in international notation in compliance with the E.164 telephone number format recommendation.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **30**
- permissible value
+cc ddd ddd dddd

- **title**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The name given to the resource. Typically, a Title will be a name by which the resource is formally known. - Dublin Core**
- data_type: **UTF8_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **type**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The Type attribute provides a data provider's classification for the object.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **unit**

steward: **pds**
name space id: **pds:**
version: **0.2.0.0.d**

- description: **The unit attribute indicates unit of measurement.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **40**
- permissible values
 - mol
 - arcmin
 - arcsec
 - deg
 - hr
 - mrad
 - rad
 - deg/day
 - deg/s
 - rad/s
 - m2
 - hz
 - AU
 - Angstrom
 - cm
 - km
 - m
 - micrometer
 - mm
 - nm
 - g
 - kg
 - DN
 - pixel
 - none
 - airmass
 - Pa
 - bar
 - hPa
 - mbar
 - *W*m^-2*sr-1
 - counts/bin
 - kilobits/s
 - electron/DN
 - km/pixel
 - m/pixel
 - mm/pixel
 - pixel/deg
 - sr
 - byte
 - K
 - degC
 - day
 - microseconds
 - min
 - ms
 - s
 - yr
 - cm/s
 - km/s
 - m/s
 - V
 - mV
 - L
 - m3

- **unit_id**

steward: **pds**

name space id: **pds**:
version: **0.2.0.0.d**

- description: **The unit idl attribute is a character or character string which serves as an abbreviation for or symbol representing a unit of measure.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **unit_of_measure_name**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The unit_of_measure_name attribute indicates the units in which a value is given.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **unknown_constant**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The unknown constant attribute provides a value that indicates the original value was unknown.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **20**

- **url**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The URL attribute (Uniform Resource Locator) is a Uniform Resource Identifier (URI) that specifies where an identified resource is available and the mechanism for retrieving it.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **value**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The value attribute is an expression of a value meaning allowed in a specific value domain. A permissible value for axes is 2".**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **value_meaning**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The value_meaning attribute is the meaning or semantic content of a permissible value.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **value_offset**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The value offset attribute is the fixed value to be added to each real value stored in order to recover the original observation value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
- data_type: **ASCII_Integer**
- minimum_value: **-2147483648**
- maximum_value: **2147483647**

- **version_id**

steward: **pds**
name space id: **pds**:
version: **0.2.0.0.d**

- description: **The version id attribute gives the version.**
 - data_type: **ASCII_Short_String_Collapsed**
 - minimum_characters: **1**
 - maximum_characters: **255**
 - pattern: **([!_a-zA-Z0-9]*)**
-

- **Attributes under steward:img**

- **application_process_id**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **The application_process_id identifies the process, or source, which created the data.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **application_process_name**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **The application_process_name element provides the name associated with the source or process which created the data.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **256**
- permissible values
 - APXS
 - DESCENT IMAGER
 - HAZCAM LEFT FRONT
 - HAZCAM LEFT REAR
 - HAZCAM RIGHT FRONT
 - HAZCAM RIGHT REAR
 - MB
 - MI
 - MINITES
 - NAVCAM LEFT
 - NAVCAM RIGHT
 - PANCAM LEFT
 - PANCAM RIGHT
 - RAT

- **application_process_subtype_id**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **The application_process_subtype_id element identifies the source or subprocess that created the data.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **2**

- **a_axis_radius**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**
- unit_of_measure_name: **UnitOfMeasure_Length**
- default_unit_id: **m**

- **b_axis_radius**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**
- unit_of_measure_name: **UnitOfMeasure_Length**
- default_unit_id: **m**

- **center_latitude**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-90.0**
- maximum_value: **90.0**
- unit_of_measure_name: **UnitOfMeasure_Angle**
- default_unit_id: **deg**

- **center_longitude**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-180.0**
- maximum_value: **360.0**
- unit_of_measure_name: **UnitOfMeasure_Angle**
- default_unit_id: **deg**

- **coefficient_1**

steward: **img**

name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **coefficient_2**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **coefficient_3**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **comment**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **The comment element provides an optional remark or observation about the current class.**
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **coordinate_system_name**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review. xxx TBD E. Rye xxx**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
 - apxs_frame**
 - body_fixed_spherical_coords**
 - earth-sun_line_cartes_coords**
 - ecliptic_inertial_cart_coords**
 - ecliptic_inertl_sphercl_coords**
 - equatorial_inert_sphrcl_coords**
 - equatorial_inertial_cart_coord**
 - jupiter_minus_system_iii**
 - mast_frame**
 - mb_frame**
 - mean_inertial_hg_1950**
 - mi_frame**
 - neptune_west_longitude_system**
 - non-rotating_spin_coordinates**
 - planet_centered_cylindrical**

```
planetocentric
planetographic
pvo_inertial_spacecraft_coords
pvo_spinning_spacecraft_coords
rat_frame
rover_frame
saturn_minus_longitude_system
sc_centered_ecliptic_coords
uranus_minus_longitude_system
uranus_west_longitude_system
```

- **coordinate_system_type**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **25**
- permissible values
 - body-fixed_non-rotating**
 - body-fixed_rotating**
 - inertial**

- **cosine**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **c_axis_radius**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**
- unit_of_measure_name: **UnitOfMeasure_Length**
- default_unit_id: **m**

- **data_set_id**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **The data_set_id element is a unique alphanumeric identifier for a data set or a data product. The data_set_id value for a given data set or product is constructed according to flight project naming conventions. In most cases the data_set_id is an abbreviation of the data_set_name. Example value in the PDS data_set_name are constructed according to standards outlined in the Standards Reference.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **40**

- **earth_received_start_time**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: The earth_received_start_time element provides the beginning time at which telemetry was received during a time period of interest.
- data_type: ASCII_Date_Time

- **earth_received_stop_time**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: The earth_received_stop_time element provides the ending time for receiving telemetry during a time period of interest.
- data_type: ASCII_Date_Time

- **eastern_most_longitude**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This attribute is used in the image map projection. Under review.
- data_type: ASCII_Short_String_Collapsed
- minimum_characters: 1
- maximum_characters: 255

- **edit_mode_id**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This element indicates the amount of data read from an imaging instrument's vidicon. '1:1' indicates the full-resolution of the vidicon. Example values: (Voyager) 3:4, 1:2, 1:3, 1:5, and 1:1.
- data_type: ASCII_Short_String_Collapsed
- minimum_characters: 1
- maximum_characters: 100

- **expected_packets**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: xxx TBD E. Rye xxx
- data_type: ASCII_Integer
- minimum_value: 0
- maximum_value: 2147483647

- **exposure_duration**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This element provides the value of the time interval between the opening and closing of an instrument aperture (such as a camera shutter).
- data_type: ASCII_Real
- minimum_value: 0.0
- maximum_value: INF
- unit_of_measure_name: UnitOfMeasure_Time
- default_unit_id: s

- **filter_id**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **(Old filter_number)** This element provides the unique identifier of an instrument filter through which an image or measurement was acquired or which is associated with a given instrument mode.

- data_type: **ASCII_Short_String_Collapsed** - Enumerated

- minimum_characters: **1**

- maximum_characters: **255**

- permissible values

0
1
2
3
4
5
6
7
8
A
B
C1
C2
C3
D
HFM1
LFM1

- **filter_name**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: This element provides the commonly-used name of the instrument filter through which an image or measurement was acquired or which is associated with a given instrument mode.

- data_type: **ASCII_Short_String_Collapsed** - Enumerated

- minimum_characters: **1**

- maximum_characters: **100**

- permissible values

A
B
BLUE
BLUE-GREEN
C
CLEAR
D
E
F
GREEN
IR-7270
IR-7560
IR-8890
IR-9680
L1000_R480
L440_R440
L450_R670
L670_R670
L800_R750
L860_R-DIOPTER
L885_R947
L900_R600
L925_R935
L930_R530
L935_R990
L965_R965
LONGWAVE
METHANE-JST

METHANE-U
MINUS BLUE
MI_CLOSED
MI_OPEN
NEAR-INFRARED
NONE
ORANGE
PANCAM_L2_753NM
PANCAM_L8_440NM
PANCAM_LV_602NM
PANCAM_R8_880NM
RED
SHORTWAVE
SODIUM-D
SOLAR UV-22
T11
T15
T20
T7
T9
ULTRAVIOLET
VIOLET

- **first_standard_parallel**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-90.0**
- maximum_value: **90.0**
- unit_of_measure_name: **UnitOfMeasure_Angle**
- default_unit_id: **deg**

- **gain_mode_id**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This element identifies the gain state of an instrument. Gain is a constant value which is multiplied with an instrument's output signal to increase or decrease the level of that output.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **100**
- permissible values
 - 100K**
 - 10K**
 - 400K**
 - 40K**
 - HIGH**
 - LOW**

- **horizontal_framelet_offset**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **1.0**
- maximum_value: **INF**

- **image_id**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This attribute is used in the image map projection. Under review.
- data_type: ASCII_Short_String_Collapsed
- minimum_characters: 1
- maximum_characters: 100

- **line_first_pixel**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This attribute is used in the image map projection. Under review.
- data_type: ASCII_Integer
- minimum_value: 0
- maximum_value: 2147483647

- **line_last_pixel**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This attribute is used in the image map projection. Under review.
- data_type: ASCII_Integer
- minimum_value: 0
- maximum_value: 2147483647

- **line_projection_offset**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This attribute is used in the image map projection. Under review.
- data_type: ASCII_Real
- minimum_value: -INF
- maximum_value: INF
- unit_of_measure_name: UnitOfMeasure_Misc
- default_unit_id: pixel

- **local_identifier**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: The local identifier element provides a formal name used to refer to the current class. The local identifier must be unique within a label.
- data_type: ASCII_Short_String_Collapsed
- minimum_characters: 1
- maximum_characters: 255

- **map_projection_name**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: (Old map_projection_type). This element identifies the type of projection characteristic of a given map.
- data_type: ASCII_Short_String_Collapsed - Enumerated
- minimum_characters: 1

- maximum_characters: **255**
- permissible values
 - AITOFF**
 - ALBERS**
 - BONNE**
 - BRIESEMEISTER**
 - CYLINDRICAL_EQUAL_AREA**
 - EQUIDISTANT**
 - EQUIRECTANGULAR**
 - GNOMONIC**
 - HAMMER**
 - HENDU**
 - LAMBERT AZIMUTHAL EQUAL AREA**
 - LAMBERT CONFORMAL**
 - MERCATOR**
 - MOLLWEIDE**
 - OBlique CYLINDRICAL**
 - ORTHOGRAPHIC**
 - POLAR STEREOGRAPHIC**
 - SIMPLE CYLINDRICAL**
 - SINUSOIDAL**
 - STEREOGRAPHIC**
 - TRANSVERSE MERCATOR**
 - VAN DER GRINTEN**
 - WERNER**

- **map_projection_rotation**

steward: **img**
 name space id: **img:**
 version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **0.0**
- maximum_value: **180.0**
- unit_of_measure_name: **UnitOfMeasure_Angle**
- default_unit_id: **deg**

- **map_resolution**

steward: **img**
 name space id: **img:**
 version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **0.0**
- maximum_value: **INF**
- unit_of_measure_name: **UnitOfMeasure_Scale**
- default_unit_id: **pixel/deg**

- **map_scale**

steward: **img**
 name space id: **img:**
 version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**
- unit_of_measure_name: **UnitOfMeasure_Scale**
- default_unit_id: **km/pixel**

- **maximum_latitude**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This attribute is used in the image map projection. Under review.
- data_type: ASCII_Real
- minimum_value: -90.0
- maximum_value: 90.0
- unit_of_measure_name: UnitOfMeasure_Angle
- default_unit_id: deg

- **minimum_latitude**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: This attribute is used in the image map projection. Under review.
- data_type: ASCII_Real
- minimum_value: -90.0
- maximum_value: 90.0
- unit_of_measure_name: UnitOfMeasure_Angle
- default_unit_id: deg

- **packet_map_mask**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: xxx TBD E. Rye xxx
- data_type: ASCII_Integer_Hex

- **positive_azimuth_direction**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: The positive_azimuth_direction element provides the direction in which azimuth is measured in positive degrees for an observer on the surface of a body. The azimuth is measured with respect to the elevational reference plane. A value of CLOCKWISE indicates that azimuth increases positively clockwise, while a value of COUNTERCLOCKWISE indicates that azimuth increases positively counter-clockwise.
- data_type: ASCII_Short_String_Collapsed - Enumerated
- minimum_characters: 1
- maximum_characters: 255
- permissible values
 - clockwise
 - counterclockwise

- **positive_elevation_direction**

steward: img
name space id: img:
version: 0.2.0.0.d

- description: TBD_description
- data_type: ASCII_Short_String_Collapsed - Enumerated
- minimum_characters: 1
- maximum_characters: 10
- permissible values
 - down
 - nadir
 - up
 - zenith

- **positive_longitude_direction**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: This attribute is used in the image map projection. Under review.
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **4**
- permissible values
 - east**
 - west**

- **received_packets**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Integer**
- minimum_value: **0**
- maximum_value: **2147483647**

- **reference_coordinate_system_name**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: The reference_coordinate_system_name provides the full name of the reference coordinate system for the group in which the keyword occurs. All vectors and positions relating to 3-D space within the enclosing class are expressed using this reference coordinate system. In non-unique coordinate system (such as 'SITE' for rover missions), which have multiple instances using the same name, reference_coordinate_system_index is also required to completely identify the reference coordinate system.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **reference_latitude**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: This attribute is used in the image map projection. Under review.
- data_type: **ASCII_Real**
- minimum_value: **-90.0**
- maximum_value: **90.0**
- unit_of_measure_name: **UnitOfMeasure_Angle**
- default_unit_id: **deg**

- **reference_longitude**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: This attribute is used in the image map projection. Under review.
- data_type: **ASCII_Real**
- minimum_value: **-180.0**
- maximum_value: **360.0**
- unit_of_measure_name: **UnitOfMeasure_Angle**
- default_unit_id: **deg**

- **sample_first_pixel**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Integer**
- minimum_value: **0**
- maximum_value: **2147483647**

- **sample_last_pixel**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Integer**
- minimum_value: **0**
- maximum_value: **2147483647**

- **sample_projection_offset**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**
- unit_of_measure_name: **UnitOfMeasure_Misc**
- default_unit_id: **pixel**

- **scan_mode_id**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This element identifies one of several internal rates for data acquisition by an instrument.**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **100**
- permissible values
 - .055**
 - 4.0**
 - epf**
 - long**
 - short**

- **second_standard_parallel**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **-90.0**
- maximum_value: **90.0**
- unit_of_measure_name: **UnitOfMeasure_Angle**
- default_unit_id: **deg**

- **shutter_mode_id**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: This element identifies the state of an imaging instrument's shutter during image acquisition. Note: the instrument shutter mode affects the radiometric properties of the camera.
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **100**
- permissible values
 - BODARK**
 - BOTSIM**
 - BSIMAN**
 - NADARK**
 - NAONLY**
 - WADARK**
 - WAONLY**

- **spice_file_name**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **180**

- **telemetry_provider_id**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
 - ssw_mer_dp**
 - ttacs**

- **telemetry_source_name**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **100**

- **telemetry_source_type**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
 - data_product**

sfdu

- **vertical_framelet_offset**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Real**
- minimum_value: **1.0**
- maximum_value: **INF**

- **western_most_longitude**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **This attribute is used in the image map projection. Under review.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **x**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **y**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **z**

steward: **img**
name space id: **img**:
version: **0.2.0.0.d**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Real**
- minimum_value: **-INF**
- maximum_value: **INF**

- **Attributes under steward:rings**

- **incidence_angle**

steward: **rings**
name space id: **rings**:

version: 0.2.0.0.d

- description: The incidence_angle element provides a measure of the lighting condition at the intercept point. Incidence angle is the angle between the local vertical at the intercept point (surface) and a vector from the intercept point to the sun. The incidence_angle varies from 0 degrees when the intercept point coincides with the sub_solar point to 90 degrees when the intercept point is at the terminator (i.e., in the shadowed or dark portion of the target body). Thus, higher values of incidence_angle indicate the existence of a greater number of surface shadows. Note: In PDS labels for Magellan's altimetry and radiometry products, incidence_angle is defined as the value of the angle between the local vertical and the spacecraft direction, measured at the center of the radiometer footprint at rad_spacecraft_epoch_time.
 - data_type: [ASCII_Real](#)
 - minimum_value: 0.0
 - maximum_value: 180.0
 - unit_of_measure_name: UnitOfMeasure_Angle
 - default_unit_id: deg

- **maximum_ring_radius**

steward: rings

name space id: rings:

version: 0.2.0.0.d

- description: The maximum_ring_radius element indicates the maximum (outermost) radial location of an area within a planetary ring system. Radii are measured from the center of the planet along the nominal ring plane.
 - data_type: [ASCII_Real](#)
 - minimum_value: 0.0
 - maximum_value: INF
 - unit_of_measure_name: UnitOfMeasure_Length
 - default_unit_id: m

- **minimum_ring_radius**

steward: rings

name space id: rings:

version: 0.2.0.0.d

- description: The minimum_ring_radius element indicates the minimum (innermost) radial location of an area within a planetary ring system. Radii are measured from the center of the planet along the nominal ring plane.
 - data_type: [ASCII_Real](#)
 - minimum_value: 0.0
 - maximum_value: INF
 - unit_of_measure_name: UnitOfMeasure_Length
 - default_unit_id: m

- **node_id**

steward: rings

name space id: rings:

version: 0.2.0.0.d

- description: The node_id element provides the node id assigned to a science community node.
 - data_type: [ASCII_Short_String_Collapsed](#) - Enumerated
 - minimum_characters: 1
 - maximum_characters: 12
 - permissible value
RINGS

- **node_name**

steward: rings

name space id: rings:

version: 0.2.0.0.d

- description: The node_name element provides the officially recognized name of a PDS Node.
 - data_type: [ASCII_Short_String_Collapsed](#) - Enumerated
 - minimum_characters: 1
 - maximum_characters: 100
 - permissible value

Planetary_Rings

- **occultation_type**

steward: **rings**
name space id: **rings**:
version: **0.2.0.0.d**

- description: The occultation type element distinguishes between two types of occultation experiments, stellar 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. 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.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 10
- permissible value
STELLAR

- **planetary_occultation_flag**

steward: **rings**
name space id: **rings**:
version: **0.2.0.0.d**

- description: The planetary_occultation_flag element is a yes-or-no flag that indicates whether a ring occultation track also intersects the planet.
- data_type: **ASCII_Boolean_TF** - Enumerated
- minimum_characters: 1
- maximum_characters: 1
- permissible values
n
y

- **radial_resolution**

steward: **rings**
name space id: **rings**:
version: **0.2.0.0.d**

- description: The radial_resolution element 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, since many data products are over-sampled.
- data_type: **ASCII_Real**
- minimum_value: 0.0
- maximum_value: INF
- unit_of_measure_name: **UnitOfMeasure_Length**
- default_unit_id: **m**

- **ring_event_start_time**

steward: **rings**
name space id: **rings**:
version: **0.2.0.0.d**

- description: The ring_event_start_time element indicates the starting instant of a data product as measured at the ring plane. This element differs from the observation start time because it allows for light travel time.
- data_type: **ASCII_Date_Time**

- **ring_event_stop_time**

steward: **rings**
name space id: **rings**:
version: **0.2.0.0.d**

- description: The ring_event_stop_time element indicates the stopping instant of a data product as measured at the ring plane. This element differs from the observation stop time because it allows for light travel time.

- data_type: [ASCII_Date_Time](#)

- **ring_occultation_direction**

steward: **rings**

name space id: **rings:**

version: **0.2.0.0.d**

- description: **The ring_occultation_direction element indicates the radial direction of a ring occultation track.**
- data_type: [ASCII_Short_String_Collapsed](#) - Enumerated
- minimum_characters: **1**
- maximum_characters: **20**
- permissible values
 - both**
 - egress**
 - ingress**
 - multiple**

- **star_name**

steward: **rings**

name space id: **rings:**

version: **0.2.0.0.d**

- description: **The star_name element 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).**
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: **1**
- maximum_characters: **40**

- **Attributes under steward:ops**

- **affiliation_type**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: **The affiliation type data attribute describes the type of relationship an individual has with the PDS.**
- data_type: [ASCII_Short_String_Collapsed](#)
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
 - Manager**
 - Technical_Staff**
 - Data_Provider**
 - Affiliate**

- **comment**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: **The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.**
- data_type: [ASCII_Text_Preserved](#)
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **constant_value**

steward: **ops**

name space id: **ops**:
version: **0.2.0.0.d**

- description: **The constant value attribute provides the value to be used if an attribute is static.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **container_type**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: **The container type attribute indicates the method used to package the components.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
 - ZIP**
 - GZIP**
 - LZIP**
 - TAR**

- **data_type**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: **The data_type attribute provides the hardware representation used to store a value.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **30**
- permissible values
 - ASCII_Boolean_TF**
 - ASCII_Date_YMD**
 - ASCII_Integer**
 - ASCII_Real**
 - ASCII_AnyURI**
 - ASCII_Date_DOY**
 - ASCII_Date_Time_DOY**
 - ASCII_Date_Time_UTC**
 - ASCII_Date_Time_YMD**
 - ASCII_LID**
 - ASCII_LIDVID**
 - ASCII_MD5_Checksum**
 - ASCII_Short_String_Collapsed**
 - ASCII_Text_Preserved**
 - ASCII_Short_String_Preserved**
 - ASCII_Time**
 - ASCII_VID**
 - ASCII_DOI**
 - ASCII_Integer_Binary**
 - ASCII_Integer_Hex**
 - ASCII_NonNegative_Integer**

- **definition**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: **The definition attribute provides a statement, picture in words, or account that describes.**
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **description**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: The description attribute is a character string that provides a statement, picture in words, or account that describes or is otherwise relevant to the object. Dublin Core: An account of the resource.
- data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **full_name**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: The full_name attribute provides the complete name for a person performing the role of lexicographer.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **100**

- **last_modification_date_time**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: The last modification date time attribute gives the most recent date and time that a change was made.
- data_type: **ASCII_Date_Time**

- **local_attribute_id**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: The local_attribute_id provides the identifier of an attribute and indicates membership in a class.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **maximum_occurrences**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: The maximum occurrences attribute indicates the number of times something may occur and is also called the maximum cardinality.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **maximum_value**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: The maximum_value attribute sets an upper (inclusive) bound on a value.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **minimum_occurrences**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: The minimum occurrences attribute indicates the number of times something may occur and is also called the minimum cardinality.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **minimum_value**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: The minimum_value attribute sets a lower (inclusive) bound on a value.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **name**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: The name attribute provides a word or combination of words by which the object is known.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **61**

- **name_space_id**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: The name_space_id attribute identifies the XML Schema namespace container for a logical grouping of data elements.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **pattern**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: The pattern attribute gives the formation rule for a value.
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **pds4_merge_flag**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: The PDS4 merge flag attribute indicates that the local data dictionary should be merged with the PDS4 data

dictionary and accept the PDS as the data dictionary's registration authority. The merge process requires validation that the local data dictionary conforms to PDS data standards.

- data_type: **ASCII_Boolean_TF** - Enumerated
- minimum_characters: 1
- maximum_characters: 1
- permissible values
 - T
 - F

- **registration_authority_id**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: **The registration_authority_id attribute provides the name of the person or organization that registered the object.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **registration_date**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: **The registration_date attribute provides the date of registration within the PDS system.**
- data_type: **ASCII_Date_YMD**
- minimum_characters: 1
- maximum_characters: 10

- **sort_name**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: **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.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255
- pattern: [a-zA-Z]{1}([-_,a-zA-Z0-9]*)

- **steward_id**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: **The steward_id attribute gives the name of the person or organization managing a set of registered attributes and classes.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1
- maximum_characters: 255

- **unit_of_measure_type**

steward: **ops**
name space id: **ops**:
version: **0.2.0.0.d**

- description: **The unit of measure type element indicates the named grouping of units to be used for this attribute.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: 1

- maximum_characters: **255**
- permissible values
 - UnitOfMeasure_AmountOfSubstance**
 - UnitOfMeasure_Angle**
 - UnitOfMeasure_Angular_Velocity**
 - UnitOfMeasure_Area**
 - UnitOfMeasure_Frequency**
 - UnitOfMeasure_Length**
 - UnitOfMeasure_Mass**
 - UnitOfMeasure_Misc**
 - UnitOfMeasure_None**
 - UnitOfMeasure_OpticalPathLength**
 - UnitOfMeasure_Pressure**
 - UnitOfMeasure_Radiance**
 - UnitOfMeasure_Rates**
 - UnitOfMeasure_Scale**
 - UnitOfMeasure_Solid_Angle**
 - UnitOfMeasure_Storage**
 - UnitOfMeasure_Temperature**
 - UnitOfMeasure_Time**
 - UnitOfMeasure_Velocity**
 - UnitOfMeasure_Voltage**
 - UnitOfMeasure_Volume**

- **value**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: **The value attribute is an expression of a value meaning allowed in a specific value domain. A permissible value for axes is 2".**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **value_meaning**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: **The value_meaning attribute is the meaning or semantic content of a permissible value.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **version_id**

steward: **ops**

name space id: **ops:**

version: **0.2.0.0.d**

- description: **The version id attribute gives the version.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**
- pattern: **([-_a-zA-Z0-9]*")**

- **xml_schema_base_type**

steward: **ops**

name space id: **ops**

version: **0.2.0.0.d**

- description: **The xml schema base type attribute provides the data type needed for the XML schema implementation.**
- data_type: **ASCII_Short_String_Collapsed**

-
- minimum_characters: 1
 - maximum_characters: 255
-

PDS4 Class Definitions - Mon Dec 13 20:27:43 PST 2010

Generated from the PDS4 Information Model Version 0.2.0.0.d

- **Az_el_coordinate_system**

description: xxx TBD E. Rye xxx
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **coordinate_system_name** value: ..., apxs_frame, body_fixed_spherical_coords, earth-sun_line_cartes_coords, ecliptic_inertial_cart_coords, ecliptic_inertl_sphercl_coords, equatorial_inert_sphrcl_coords, equatorial_inertial_cart_coord, jupiter_minus_system_iii, mast_frame, mb_frame, mean_inertial_hg_1950, mi_frame, neptune_west_longitude_system, non-rotating_spin_coordinates, planet_centered_cylindrical, planetocentric, planetographic, pvo_inertial_spacecraft_coords, pvo_spinning_spacecraft_coords, rat_frame, rover_frame, saturn_minus_longitude_system, sc_centered_ecliptic_coords, uranus_minus_longitude_system, uranus_west_longitude_system
attribute: **positive_azimuth_direction** value: clockwise, counterclockwise
attribute: **positive_elevation_direction** value: down, nadir, up, zenith
attribute: **reference_coordinate_system_name** value: **value**

- **Origin_Offset_Vector Occurs 1 Times**

description: xxx TBD E. Rye xxx
role: **Concrete**
attribute: **x** value: **value**
attribute: **y** value: **value**
attribute: **z** value: **value**

- **End_Class**

- **Origin_RotationQuaternion Occurs 1 Times**

description: xxx TBD E. Rye xxx
role: **Concrete**
attribute: **cosine** value: **value**
attribute: **x** value: **value**
attribute: **y** value: **value**
attribute: **z** value: **value**

- **End_Class**

- **End_Class**

- **CAHVORE**

description: Built upon the CAHVOR model, but describes more general cameras including those with fisheye or otherwise wide field of view lenses.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional

- **Coordinate_System Occurs 1 Times**

description: xxx TBD E. Rye xxx
role: **Abstract**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **coordinate_system_name** value: ..., apxs_frame, body_fixed_spherical_coords, earth-sun_line_cartes_coords, ecliptic_inertial_cart_coords, ecliptic_inertl_sphercl_coords, equatorial_inert_sphrcl_coords, equatorial_inertial_cart_coord, jupiter_minus_system_iii, mast_frame, mb_frame, mean_inertial_hg_1950, mi_frame, neptune_west_longitude_system, non-rotating_spin_coordinates, planet_centered_cylindrical, planetocentric,

`planetographic, pvo_inertial_spacecraft_coords, pvo_spinning_spacecraft_coords, rat_frame, rover_frame,
saturn_minus_longitude_system, sc_centered_ecliptic_coords, uranus_minus_longitude_system,
uranus_west_longitude_system`

- `End_Class`

- **Axis_Vector Occurs 1 Times**

description: A vector defining the camera axis, which is normal to the image plane.

role: **Concrete**

attribute: `x` value: `value`

attribute: `y` value: `value`

attribute: `z` value: `value`

- `End_Class`

- **Center_Vector Occurs 1 Times**

description: `xxx TBD E. Rye xxx`

role: **Concrete**

attribute: `x` value: `value`

attribute: `y` value: `value`

attribute: `z` value: `value`

- `End_Class`

- **Horizontal_Vector Occurs 1 Times**

description: `xxx TBD E. Rye xxx`

role: **Concrete**

attribute: `x` value: `value`

attribute: `y` value: `value`

attribute: `z` value: `value`

- `End_Class`

- **Vertical_Vector Occurs 1 Times**

description: `xxx TBD E. Rye xxx`

role: **Concrete**

attribute: `x` value: `value`

attribute: `y` value: `value`

attribute: `z` value: `value`

- `End_Class`

- **Vector Occurs 1 Times**

description: Provides the coordinates of a point (x, y, z) in Cartesian space relative to the origin of a reference frame, thereby providing the magnitude and direction of a line from the origin to that point.

role: **Concrete**

attribute: `x` value: `value`

attribute: `y` value: `value`

attribute: `z` value: `value`

- `End_Class`

- **Coefficients_Array Occurs 1 Times**

description: An array providing the coefficients of a polynomial

role: **Concrete**

attribute: `local_identifier` value: `value`

attribute: `comment` value: `value` Optional

attribute: `coefficient_1` value: `value`

attribute: `coefficient_2` value: `value`

attribute: `coefficient_3` value: `value`

- `End_Class`

- **Coefficients_Array Occurs 1 Times**

description: An array providing the coefficients of a polynomial
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **coefficient_1** value: **value**
attribute: **coefficient_2** value: **value**
attribute: **coefficient_3** value: **value**

- End_Class
 - End_Class
-

- CAHVOR

description: Built upon the CAHV camera model, but also allows for cameras with radial lens distortion about the lens axis. (See Gennery, D. B. 1993)
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional

- Coordinate_System Occurs 1 Times

description: xxx TBD E. Rye xxx
role: **Abstract**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **coordinate_system_name** value: ..., apxs_frame, body_fixed_spherical_coords, earth-sun_line_cartes_coords, ecliptic_inertial_cart_coords, ecliptic_inertl_sphercl_coords, equatorial_inert_sphrcl_coords, equatorial_inertial_cart_coord, jupiter_minus_system_iii, mast_frame, mb_frame, mean_inertial_hg_1950, mi_frame, neptune_west_longitude_system, non-rotating_spin_coordinates, planet_centered_cylindrical, planetocentric, planetographic, pvo_inertial_spacecraft_coords, pvo_spinning_spacecraft_coords, rat_frame, rover_frame, saturn_minus_longitude_system, sc_centered_ecliptic_coords, uranus_minus_longitude_system, uranus_west_longitude_system

- End_Class

- Axis_Vector Occurs 1 Times

description: A vector defining the camera axis, which is normal to the image plane.
role: **Concrete**
attribute: **x** value: **value**
attribute: **y** value: **value**
attribute: **z** value: **value**

- End_Class

- Center_Vector Occurs 1 Times

description: xxx TBD E. Rye xxx
role: **Concrete**
attribute: **x** value: **value**
attribute: **y** value: **value**
attribute: **z** value: **value**

- End_Class

- Horizontal_Vector Occurs 1 Times

description: xxx TBD E. Rye xxx
role: **Concrete**
attribute: **x** value: **value**
attribute: **y** value: **value**
attribute: **z** value: **value**

- End_Class

- Vertical_Vector Occurs 1 Times

description: xxx TBD E. Rye xxx

role: **Concrete**

attribute: **x** value: *value*

attribute: **y** value: *value*

attribute: **z** value: *value*

- **End_Class**

- **Vector Occurs 1 Times**

description: Provides the coordinates of a point (x, y, z) in Cartesian space relative to the origin of a reference frame, thereby providing the magnitude and direction of a line from the origin to that point.

role: **Concrete**

attribute: **x** value: *value*

attribute: **y** value: *value*

attribute: **z** value: *value*

- **End_Class**

- **Coefficients_Array Occurs 1 Times**

description: An array providing the coefficients of a polynomial

role: **Concrete**

attribute: **local_identifier** value: *value*

attribute: **comment** value: *value* Optional

attribute: **coefficient_1** value: *value*

attribute: **coefficient_2** value: *value*

attribute: **coefficient_3** value: *value*

- **End_Class**

- **End_Class**
-

- **CAHV**

description: A camera model, designed at JPL, equivalent to the standard linear photogrammetric model for a pinhole camera. It is useful for very small field of view cameras and as a building block for more complex camera models. (Madison et. al., 2005)

role: **Concrete**

attribute: **local_identifier** value: *value*

attribute: **comment** value: *value* Optional

- **Coordinate_System Occurs 1 Times**

description: xxx TBD E. Rye xxx

role: **Abstract**

attribute: **local_identifier** value: *value*

attribute: **comment** value: *value* Optional

attribute: **coordinate_system_name** value: ..., apxs_frame, body_fixed_spherical_coords, earth-sun_line_cartes_coords, ecliptic_inertial_cart_coords, ecliptic_inertl_sphercl_coords, equatorial_inert_sphrcl_coords, equatorial_inertial_cart_coord, jupiter_minus_system_iii, mast_frame, mb_frame, mean_inertial_hg_1950, mi_frame, neptune_west_longitude_system, non-rotating_spin_coordinates, planet_centered_cylindrical, planetocentric, planetographic, pvo_inertial_spacecraft_coords, pvo_spinning_spacecraft_coords, rat_frame, rover_frame, saturn_minus_longitude_system, sc_centered_ecliptic_coords, uranus_minus_longitude_system, uranus_west_longitude_system

- **End_Class**

- **Axis_Vector Occurs 1 Times**

description: A vector defining the camera axis, which is normal to the image plane.

role: **Concrete**

attribute: **x** value: *value*

attribute: **y** value: *value*

attribute: **z** value: *value*

- **End_Class**

- **Center_Vector Occurs 1 Times**

description: **xxx TBD E. Rye xxx**
role: **Concrete**
attribute: **x** value: *value*
attribute: **y** value: *value*
attribute: **z** value: *value*

- **End_Class**

- **Horizontal_Vector Occurs 1 Times**

description: **xxx TBD E. Rye xxx**
role: **Concrete**
attribute: **x** value: *value*
attribute: **y** value: *value*
attribute: **z** value: *value*

- **End_Class**

- **Vertical_Vector Occurs 1 Times**

description: **xxx TBD E. Rye xxx**
role: **Concrete**
attribute: **x** value: *value*
attribute: **y** value: *value*
attribute: **z** value: *value*

- **End_Class**

- **End_Class**

- **Camera_Parameters**

description: **xxx TBD E. Rye xxx**
role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* Optional
attribute: **edit_mode_id** value: *value* Optional
attribute: **exposure_duration** value: *value* Optional
attribute: **filter_id** value: 0, 1, 2, 3, 4, 5, 6, 7, 8, A, B, C1, C2, C3, D, HFM1, LFM1 Optional
attribute: **filter_name** value: A, B, BLUE, BLUE-GREEN, C, CLEAR, D, E, F, GREEN, IR-7270, IR-7560, IR-8890, IR-9680, L1000_R480, L440_R440, L450_R670, L670_R670, L800_R750, L860_R-DIOPTER, L885_R947, L900_R600, L925_R935, L930_R530, L935_R990, L965_R965, LONGWAVE, METHANE-JST, METHANE-U, MINUS BLUE, MI_CLOSED, MI_OPEN, NEAR-INFRARED, NONE, ORANGE, PANCAM_L2_753NM, PANCAM_L8_440NM, PANCAM_LV_602NM, PANCAM_R8_880NM, RED, SHORTWAVE, SODIUM-D, SOLAR UV-22, T11, T15, T20, T7, T9, ULTRAVIOLET, VIOLET Optional
attribute: **gain_mode_id** value: 100K, 10K, 400K, 40K, HIGH, LOW Optional
attribute: **scan_mode_id** value: .055, 4.0, epf, long, short Optional
attribute: **shutter_mode_id** value: BODARK, BOTSIM, BSIMAN, NADARK, NAONLY, WADARK, WAONLY Optional

- **End_Class**
-

- **Coefficients_Array**

description: An array providing the coefficients of a polynomial
role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* Optional
attribute: **coefficient_1** value: *value*
attribute: **coefficient_2** value: *value*
attribute: **coefficient_3** value: *value*

- **End_Class**
-

- **Collection_Browse**

description: A Browse collection is a product that has a table of references to one or more browse products.
role: **Concrete**

- **Identification_Area_Collection** Occurs 1 Times

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.
role: **Concrete**
attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **is_primary_collection** value: *value*
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area** - Occurs 0 to 1 Times

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: *value* Optional
attribute: **instrument_name** value: *value* Optional
attribute: **instrument_host_name** value: *value* Optional
attribute: **full_name** value: *value* Optional
attribute: **investigation_name** value: *value* Optional
attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution** - Occurs 0 to * Times

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: *value*
attribute: **ivid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Collection** - Occurs 0 to 1 Times

description: The collection cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference** - Occurs 0 to * Times

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- **End_Class**

- **Observing_System** - Occurs 0 to * Times

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**
attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**
attribute: **observing_system_component_type** value: **SENSOR, SOURCE**

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- **End_Class**

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.
role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: **CHARACTER**

attribute: **fields** value: **2**

attribute: **record_bytes** value: **value**

attribute: **records** value: **value**

attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.

role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.

role: **Concrete**

attribute: **field_name** value: **LIDVID**

attribute: **field_number** value: **1**

attribute: **field_data_type** value: **ASCII_LIDVID**

attribute: **field_location** value: **1**

attribute: **field_length** value: **value**

attribute: **field_format** value: **URN:NASA:PDS:xxx::M.n** Optional

attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.

role: **Concrete**

attribute: **field_name** value: **file_specification_name**

attribute: **field_number** value: **2** Optional

attribute: **field_data_type** value: **ASCII_File_Specification_Name**

attribute: **field_location** value: **value**

attribute: **field_length** value: **value**

attribute: **field_format** value: **dir1/dir2/file_name.file_extension** Optional

attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Calibration**

description: A Calibration collection is a product that has a table of references to one or more calibrartion products.

role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.

role: Concrete

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **is_primary_collection** value: **value**

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: Concrete

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: Concrete

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.

role: Concrete

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: Concrete

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: Concrete

attribute: **local_identifier** value: **value** Optional

attribute: **description** value: **value** Optional

attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**
attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- **End_Class**

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.
role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**
attribute: **record_bytes** value: **value**
attribute: **records** value: **value**
attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.
role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.
role: **Concrete**
attribute: **field_name** value: **LIDVID**
attribute: **field_number** value: **1**
attribute: **field_data_type** value: **ASCII_LIDVID**
attribute: **field_location** value: **1**
attribute: **field_length** value: **value**
attribute: **field_format** value: **URN:NASA:PDS:xxxx::M.n** Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.
role: **Concrete**
attribute: **field_name** value: **file_specification_name**
attribute: **field_number** value: **2** Optional
attribute: **field_data_type** value: **ASCII_File_Specification_Name**
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: **dir1/dir2/file_name.file_extension** Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Context**

description: A Context collection is a product that has a table of references to one or more context products.
role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.
role: **Concrete**
attribute: **logical_identifier** value: **value**

attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **is_primary_collection** value: *value*
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: *value* Optional
attribute: **instrument_name** value: *value* Optional
attribute: **instrument_host_name** value: *value* Optional
attribute: **full_name** value: *value* Optional
attribute: **investigation_name** value: *value* Optional
attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: *value*
attribute: **lidvid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: *value* Optional
attribute: **description** value: *value* Optional
attribute: **title** value: *value*

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**
attribute: **observing_system_component_type** value: **SENSOR, SOURCE**

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- **End_Class**

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.

role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**
attribute: **record_bytes** value: **value**
attribute: **records** value: **value**
attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.
role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.

role: **Concrete**

attribute: **field_name** value: **LIDVID**
attribute: **field_number** value: **1**
attribute: **field_data_type** value: **ASCII_LIDVID**
attribute: **field_location** value: **1**
attribute: **field_length** value: **value**
attribute: **field_format** value: **URN:NASA:PDS:xxxx::M.n** Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.

role: **Concrete**

attribute: **field_name** value: **file_specification_name**
attribute: **field_number** value: **2** Optional
attribute: **field_data_type** value: **ASCII_File_Specification_Name**
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: **dir1/dir2/file_name.file_extension** Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Data**

description: A Data collection is a product that has a table of references to one or more standard digital products.
role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.

role: **Concrete**

attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional
attribute: **is_primary_collection** value: **value**
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Collection Occurs 1 Times**

description: The collection cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.
role: **Concrete**

attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**
attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- End_Class

- End_Class

- End_Class

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- End_Class

- End_Class

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- End_Class

- End_Class

attribute: **process_level_id** value: **CLB, DRV, RAW, RDC** Optional

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.

role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
 attribute: **comment** value: **value** Optional
 attribute: **encoding_type** value: **CHARACTER**
 attribute: **fields** value: **2**
 attribute: **record_bytes** value: **value**
 attribute: **records** value: **value**
 attribute: **reference_association_type** value: **has_member**
 - **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.
 role: **Concrete**

 - **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.
 role: **Concrete**

attribute: **field_name** value: **LIDVID**
 attribute: **field_number** value: **1**
 attribute: **field_data_type** value: **ASCII_LIDVID**
 attribute: **field_location** value: **1**
 attribute: **field_length** value: **value**
 attribute: **field_format** value: **URN:NASA:PDS:xxxx::M.n** Optional
 attribute: **field_description** value: **value** Optional
 - **End_Class**
 - **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.
 role: **Concrete**

attribute: **field_name** value: **file_specification_name**
 attribute: **field_number** value: **2** Optional
 attribute: **field_data_type** value: **ASCII_File_Specification_Name**
 attribute: **field_location** value: **value**
 attribute: **field_length** value: **value**
 attribute: **field_format** value: **dir1/dir2/file_name.file_extension** Optional
 attribute: **field_description** value: **value** Optional

 - **End_Class**
 - **End_Class**
 - **End_Class**
 - **End_Class**
-

• **Collection_Document**

description: A Document collection is a product that has a table of references to one or more document products.
 role: **Concrete**

• **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.
 role: **Concrete**

attribute: **logical_identifier** value: **value**
 attribute: **version_id** value: **value**
 attribute: **product_class** value: **value**
 attribute: **title** value: **value**
 attribute: **alternate_title** value: **value** Optional
 attribute: **alternate_id** value: **value** Optional

attribute: **is_primary_collection** value: **value**
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**
- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**
attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**
attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- End_Class

- End_Class

- End_Class

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- End_Class

- End_Class

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- End_Class

- End_Class

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.

role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- End_Class

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**
attribute: **record_bytes** value: **value**
attribute: **records** value: **value**
attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.
role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.
role: **Concrete**
attribute: **field_name** value: **LIDVID**
attribute: **field_number** value: **1**
attribute: **field_data_type** value: **ASCII_LIDVID**
attribute: **field_location** value: **1**
attribute: **field_length** value: **value**
attribute: **field_format** value: **URN:NASA:PDS:xxxx::M.n** Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.
role: **Concrete**
attribute: **field_name** value: **file_specification_name**
attribute: **field_number** value: **2** Optional
attribute: **field_data_type** value: **ASCII_File_Specification_Name**
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: **dir1/dir2/file_name.file_extension** Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Generic**

description: A Generic collection is a product that has a table of references to one or more generic products.
role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **is_primary_collection** value: **value**
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional

attribute: **description** value: **value** Optional

attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**
- **End_Class**
- **End_Class**
- **Collection_Reference_Entry - Occurs 0 to * Times**

description: **The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.**

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- **End_Class**
- **End_Class**
- **File_Area Occurs 1 Times**

description: **The file area allows the inclusion into a product label of descriptive information about associated files.**

role: **Concrete**

- **File - Occurs 1 to * Times**

description: **The File class consists of attributes involved in the role of describing a file in a data store.**

role: **Concrete**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**
- **End_Class**
- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: **The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.**

role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: **The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.**

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: **The Data Location class provides the location of a digital object.**

role: **Concrete**

attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**
- attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**
attribute: **record_bytes** value: **value**

attribute: **records** value: **value**
attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.
role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.

role: **Concrete**

attribute: **field_name** value: LIDVID
attribute: **field_number** value: 1
attribute: **field_data_type** value: ASCII_LIDVID
attribute: **field_location** value: 1
attribute: **field_length** value: **value**
attribute: **field_format** value: URN:NASA:PDS:xxxx::M.n Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.

role: **Concrete**

attribute: **field_name** value: file_specification_name
attribute: **field_number** value: 2 Optional
attribute: **field_data_type** value: ASCII_File_Specification_Name
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: dir1/dir2/file_name.file_extension Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Geometry**

description: A Geometry collection is a product that has a table of references to one or more geometry products.
role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.

role: **Concrete**

attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **is_primary_collection** value: **value**
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key

phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional

attribute: **description** value: **value** Optional

attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- End_Class
- End_Class
- End_Class

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- End_Class

- End_Class

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- End_Class

- End_Class

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.

role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- End_Class

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**

attribute: **record_bytes** value: **value**
attribute: **records** value: **value**
attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.
role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.
role: **Concrete**
attribute: **field_name** value: LIDVID
attribute: **field_number** value: 1
attribute: **field_data_type** value: ASCII_LIDVID
attribute: **field_location** value: 1
attribute: **field_length** value: **value**
attribute: **field_format** value: URN:NASA:PDS:xxxx::M.n Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.
role: **Concrete**
attribute: **field_name** value: file_specification_name
attribute: **field_number** value: 2 Optional
attribute: **field_data_type** value: ASCII_File_Specification_Name
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: dir1/dir2/file_name.file_extension Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Miscellaneous**

description: A Miscellaneous collection is a product that has a table of references to one or more products that are not otherwise classified.
role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **is_primary_collection** value: **value**
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: Concrete

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: Concrete

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.

role: Concrete

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: Concrete

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: Concrete

attribute: **local_identifier** value: **value** Optional

attribute: **description** value: **value** Optional

attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: Concrete

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: Concrete

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association**, **has_instrument**,
has_instrument_host

- **End_Class**
- **End_Class**
- **End_Class**

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_associated_collection**, **has_delivery_file_manifest**,
has_investigation_collection, **has_manifest_collection**, **has_node_collection**, **has_publication_collection**,
has_target_collection, **has_update_collection**

- **End_Class**
- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- **End_Class**
- **End_Class**

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.

role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: **CHARACTER**

attribute: **fields** value: **2**

attribute: **record_bytes** value: **value**

attribute: **records** value: **value**

attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.
role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.
role: **Concrete**
attribute: **field_name** value: LIDVID
attribute: **field_number** value: 1
attribute: **field_data_type** value: ASCII_LIDVID
attribute: **field_location** value: 1
attribute: **field_length** value: **value**
attribute: **field_format** value: URN:NASA:PDS:xxxx::M.n Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.
role: **Concrete**
attribute: **field_name** value: file_specification_name
attribute: **field_number** value: 2 Optional
attribute: **field_data_type** value: ASCII_File_Specification_Name
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: dir1/dir2/file_name.file_extension Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_Secondary**

description: A Secondary collection is a product that has a table of references to one or more generic products. The references are LIDs.
role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **is_primary_collection** value: **value**
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**

attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**
attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**
attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host

- **End_Class**

- End_Class
- End_Class

- Collection_Reference_Entry - Occurs 0 to * Times

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.

role: Concrete

attribute: lid_reference value: value Optional

attribute: lidvid_reference value: value Optional

attribute: reference_association_type value: has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection

- End_Class

- End_Class

- File_Area Occurs 1 Times

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: Concrete

- File - Occurs 1 to * Times

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: Concrete

attribute: local_identifier value: value

attribute: comment value: value Optional

attribute: creation_date_time value: value Optional

attribute: file_name value: value

attribute: file_size value: value Optional

attribute: max_record_bytes value: value Optional

attribute: md5_checksum value: value Optional

attribute: records value: value Optional

- End_Class

- End_Class

- Data_Area_Inventory_LID Occurs 1 Times

description: The Data_Area_Inventory_LID class requires one table character with two fields, one field of which is a LID.
role: Concrete

- Inventory_LID Occurs 1 Times - Base_Class:Table_Base

description: The Inventory_LID class is used to provide LID product references for a secondary collection.
role: Concrete

- Data_Location Occurs 1 Times

description: The Data Location class provides the location of a digital object.

role: Concrete

attribute: file_local_identifier value: value

attribute: offset value: value

- End_Class

attribute: local_identifier value: value

attribute: comment value: value Optional

attribute: encoding_type value: CHARACTER

attribute: fields value: 2

attribute: record_bytes value: value

attribute: records value: value

attribute: reference_association_type value: has_member

- Table_Record_Inventory_LID - Occurs 1 to * Times

description: The Table_Record_Inventory_LID class defines the record of an inventory for a secondary collection.

role: **Concrete**

- **Table_Field_LID Occurs 1 Times**

description: **The Table_Field_LID class defines a table field that provides the logical identifier for a product.**

role: **Concrete**

attribute: **field_name** value: LID

attribute: **field_number** value: 1 Optional

attribute: **field_data_type** value: ASCII_LID

attribute: **field_location** value: 1

attribute: **field_length** value: **value**

attribute: **field_format** value: URN:NASA:PDS:xxxx Optional

attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: **The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.**

role: **Concrete**

attribute: **field_name** value: file_specification_name

attribute: **field_number** value: 2 Optional

attribute: **field_data_type** value: ASCII_File_Specification_Name

attribute: **field_location** value: **value**

attribute: **field_length** value: **value**

attribute: **field_format** value: dir1/dir2/file_name.file_extension Optional

attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_SPICE**

description: **A SPICE collection is a product that has a table of references to one or more SPICE products.**

role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: **The collection identification area consists of attributes involved in the role of identifying and naming a collection.**

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **is_primary_collection** value: **value**

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: **The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.**

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**
attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**
attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host

- **End_Class**
- **End_Class**
- **End_Class**

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- **End_Class**

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.

role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: **CHARACTER**

attribute: **fields** value: **2**

attribute: **record_bytes** value: **value**

attribute: **records** value: **value**

attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.

role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.

role: **Concrete**

attribute: **field_name** value: LIDVID

attribute: **field_number** value: 1

attribute: **field_data_type** value: ASCII_LIDVID

attribute: **field_location** value: 1

attribute: **field_length** value: **value**

attribute: **field_format** value: URN:NASA:PDS:xxxx::M.n Optional

attribute: **field_description** value: **value** Optional

- **End_Class**

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.

role: **Concrete**

attribute: **field_name** value: file_specification_name

attribute: **field_number** value: 2 Optional

attribute: **field_data_type** value: ASCII_File_Specification_Name

attribute: **field_location** value: **value**

attribute: **field_length** value: **value**

attribute: **field_format** value: dir1/dir2/file_name.file_extension Optional

attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Collection_XML_Schema**

description: An XML_Schema collection is a product that has a table of references to one or more XML schema products.
role: **Concrete**

- **Identification_Area_Collection Occurs 1 Times**

description: The collection identification area consists of attributes involved in the role of identifying and naming a collection.

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **is_primary_collection** value: **value**

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- **Cross_Reference_Area_Collection - Occurs 0 to 1 Times**

description: The collection cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- End_Class

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**
attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**
attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host

- End_Class
- End_Class
- End_Class

- **Collection_Reference_Entry - Occurs 0 to * Times**

description: The Collection Reference Entry class provides a collection specific reference and type information about the reference. The reference is to a product.

role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_associated_collection, has_delivery_file_manifest, has_investigation_collection, has_manifest_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- **End_Class**
- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**
- **End_Class**

- **Data_Area_Inventory_LIDVID Occurs 1 Times**

description: The Data_Area_Inventory_LIDVID class requires one table character with two fields, one field of which is a LIDVID.
role: **Concrete**

- **Inventory_LIDVID Occurs 1 Times - Base_Class:Table_Base**

description: The Inventory_LIDVID class is used to provide LIDVID product references for a primary collection.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**
attribute: **record_bytes** value: **value**
attribute: **records** value: **value**
attribute: **reference_association_type** value: **has_member**

- **Table_Record_Inventory_LIDVID - Occurs 1 to * Times**

description: The Table_Record_Inventory_LIDVID class defines the record of an inventory for a primary collection.
role: **Concrete**

- **Table_Field_LIDVID Occurs 1 Times**

description: The Table Field LIDVID class defines a table field that provides the logical identifier and version identifier for a product.

role: **Concrete**
attribute: **field_name** value: LIDVID
attribute: **field_number** value: 1
attribute: **field_data_type** value: ASCII_LIDVID
attribute: **field_location** value: 1
attribute: **field_length** value: **value**
attribute: **field_format** value: URN:NASA:PDS:xxxx::M.n Optional
attribute: **field_description** value: **value** Optional

- End_Class

- **Table_Field_File_Specification_Name Occurs 1 Times**

description: The Table_Field_File_Specification_Name class defines a table field that provides a file name, file extension, and relative directory path to a product label.
role: **Concrete**
attribute: **field_name** value: file_specification_name
attribute: **field_number** value: 2 Optional
attribute: **field_data_type** value: ASCII_File_Specification_Name
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: dir1/dir2/file_name.file_extension Optional
attribute: **field_description** value: **value** Optional

- End_Class

- End_Class

- End_Class

- End_Class

- End_Class

- **Delivery_Manifest**

description: A delivery manifest is a system product that contains a table of references to one or more files.
role: **Concrete**

- **Identification_Area_Manifest Occurs 1 Times**

description: The manifest identification area consists of attributes involved in the role of identifying and naming a manifest.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**

attribute: **class_name** value: **value**

- attribute: **lidvid_reference** value: **value** Optional
 attribute: **name** value: **value**
 attribute: **primary_name** value: **value**
 attribute: **role** value: ALTERNATE, PRIMARY
- **End_Class**
- **End_Class**
- **End_Class**
- **Cross_Reference_Area_Manifest - Occurs 0 to 1 Times**

description: The manifest cross reference area provides references to associated registered products.
 role: Concrete

 - **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
 role: Concrete

 - attribute: **local_identifier** value: **value**
 - attribute: **description** value: **value** Optional
 - attribute: **doi** value: **value** Optional
 - attribute: **reference_text** value: **value**
 - attribute: **url** value: **value** Optional
 - **End_Class**
 - **Reference_Entry - Occurs 0 to * Times**

description: The Reference Entry class provides a reference and type information about the reference. The reference is to a product.
 role: Concrete

 - attribute: **lid_reference** value: **value** Optional
 - attribute: **lidvid_reference** value: **value** Optional
 - attribute: **reference_association_type** value: **has_association**
 - **End_Class**
 - **End_Class**
- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
 role: Concrete

 - **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
 role: Concrete

 - attribute: **local_identifier** value: **value**
 - attribute: **comment** value: **value** Optional
 - attribute: **creation_date_time** value: **value** Optional
 - attribute: **file_name** value: **value**
 - attribute: **file_size** value: **value** Optional
 - attribute: **max_record_bytes** value: **value** Optional
 - attribute: **md5_checksum** value: **value** Optional
 - attribute: **records** value: **value** Optional
 - **End_Class**
 - **End_Class**
- **Data_Area_Manifest Occurs 1 Times**

description: The Data_Area_Manifest class requires one table character that is compliant to a file generated from MD5 checksum software.
 role: Concrete

 - **Manifest Occurs 1 Times - Base_Class:Table_Base**

description: The manifest class defines a table for file references.
role: **Concrete**

- **Data_Location** Occurs 1 Times

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **value**
attribute: **record_bytes** value: **value**
attribute: **records** value: **value**

- **Table_Record_Character** - Occurs 1 to * Times

description: The Table Record Character class is a component of the table class and defines a record of the table. This extension defines a character record.
role: **Concrete**

- **Table_Character_Field** - Occurs 1 to * Times

description: The Table Character Field class is a component of the table record class and defines a field of the record. This extension defines a character field.
role: **Concrete**
attribute: **field_name** value: **value**
attribute: **field_number** value: **value** Optional
attribute: **field_data_type** value: **ASCII_AnyURI**, **ASCII_Boolean_TF**, **ASCII_DOI**, **ASCII_Date_DOY**, **ASCII_Date_Time_DOY**, **ASCII_Date_Time_UTC**, **ASCII_Date_Time_YMD**, **ASCII_Date_YMD**, **ASCII_Integer**, **ASCII_Integer_Binary**, **ASCII_Integer_Hex**, **ASCII_LID**, **ASCII_LIDVID**, **ASCII_MD5_Checksum**, **ASCII_NonNegative_Integer**, **ASCII_Real**, **ASCII_Short_String_Collapsed**, **ASCII_Short_String_Preserved**, **ASCII_Text_Preserved**, **ASCII_Time**, **ASCII_VID**
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: **value** Optional
attribute: **minimum_scaled_value** value: **value** Optional
attribute: **maximum_scaled_value** value: **value** Optional
attribute: **field_min_logical** value: **value** Optional
attribute: **field_max_logical** value: **value** Optional
attribute: **field_scaling_factor** value: **value** Optional
attribute: **field_value_offset** value: **value** Optional
attribute: **field_unit** value: **AU**, **Angstrom**, **DN**, **K**, **L**, **Pa**, **V**, **W*m-2*sr-1**, **airmass**, **arcmin**, **arcsec**, **bar**, **byte**, **cm**, **cm/s**, **counts/bin**, **day**, **deg**, **deg/day**, **deg/s**, **degC**, **electron/DN**, **g**, **hPa**, **hr**, **hr**, **hz**, **kg**, **kilobits/s**, **km**, **km/pixel**, **km/s**, **m**, **m2**, **m3**, **m/pixel**, **m/s**, **mV**, **mbar**, **micrometer**, **microseconds**, **min**, **mm**, **mm/pixel**, **mol**, **mrad**, **ms**, **nm**, **none**, **pixel**, **pixel/deg**, **rad**, **rad/s**, **s**, **sr**, **yr** Optional
attribute: **field_description** value: **value** Optional

- **Object_Statistics** - Occurs 0 to 1 Times

description: The Object Statistics class provides a set of values that provide metrics about the object.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **maximum** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **mean** value: **value** Optional
attribute: **median** value: **value** Optional
attribute: **minimum** value: **value** Optional
attribute: **sample_bit_mask** value: **value** Optional
attribute: **standard_deviation** value: **value** Optional

- End_Class
 - Special_Constants - Occurs 0 to 1 Times
 - description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.
 - role: Concrete
 - attribute: error_constant value: value Optional
 - attribute: invalid_constant value: value Optional
 - attribute: missing_constant value: value Optional
 - attribute: not_applicable_constant value: value Optional
 - attribute: saturated_constant value: value Optional
 - attribute: unknown_constant value: value Optional
 - End_Class
 - End_Class
 - End_Class
 - End_Class
 - End_Class
 - End_Class
-

- Detector

description: The Detector class provides a description of a physical object that collects data.
role: Concrete
attribute: description value: value Optional

- End_Class

- Header

description: The Header class describes a data object header.
role: Concrete

- Data_Location Occurs 1 Times

description: The Data Location class provides the location of a digital object.
role: Concrete
attribute: file_local_identifier value: value
attribute: offset value: value

- End_Class

attribute: local_identifier value: value
attribute: comment value: value Optional
attribute: description value: value Optional
attribute: bytes value: value
attribute: encoding_type value: BINARY
attribute: external_standard_id value: FITS, ODL, VICR
attribute: name value: value Optional

- End_Class

- Image_3D - Base_Class:Array_Base

description: The Image 3D class is an extension of array_base and defines a three dimensional image.
role: Concrete

- Data_Location Occurs 1 Times

description: The Data Location class provides the location of a digital object.
role: Concrete
attribute: file_local_identifier value: value
attribute: offset value: value

- **End_Class**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **axes** value: 3
attribute: **axis_order** value: FIRST_INDEX_FASTEST
attribute: **encoding_type** value: BINARY
 - **Array_Axis Occurs 3 Times**

description: The Array Axis class is used as a component of the array class and defines an axis of the array.
role: Concrete
attribute: **elements** value: **value**
attribute: **name** value: **value**
attribute: **sequence_number** value: **value**
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
 - **End_Class**
 - **Array_Element Occurs 1 Times**

description: The Array Element class is used as a component of the array class and defines an element of the array.
role: Concrete
attribute: **scaling_factor** value: **value** Optional
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
attribute: **value_offset** value: **value** Optional
attribute: **data_type** value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte
 - **End_Class**
 - **End_Class**
-

- **Image_Grayscale - Base_Class:Array_Base**

description: The Image Grayscale class is an extension of array_base and defines a two dimensional grayscale image.
role: Concrete
- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: Concrete
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**
- **End_Class**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **axes** value: 2
attribute: **axis_order** value: FIRST_INDEX_FASTEST
attribute: **encoding_type** value: BINARY
- **Array_Axis Occurs 2 Times**

description: The Array Axis class is used as a component of the array class and defines an axis of the array.
role: Concrete
attribute: **elements** value: **value**
attribute: **name** value: **value**
attribute: **sequence_number** value: **value**
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin,

day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

- End_Class

- Array_Element Occurs 1 Times

description: The Array Element class is used as a component of the array class and defines an element of the array.
role: Concrete

attribute: **scaling_factor** value: **value** Optional

attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

attribute: **value_offset** value: **value** Optional

attribute: **data_type** value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- End_Class

- Image_2D_Display - Occurs 0 to 1 Times

description: The Image_2D_Display class provides attributes to enable the display of a 2D image.

role: Concrete

attribute: **first_line** value: **value**

attribute: **first_line_sample** value: **value**

attribute: **line_display_direction** value: DOWN, LEFT, RIGHT, UP

attribute: **sample_display_direction** value: DOWN, LEFT, RIGHT, UP

- End_Class

- Object_Statistics - Occurs 0 to 1 Times

description: The Object Statistics class provides a set of values that provide metrics about the object.

role: Concrete

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **maximum** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **mean** value: **value** Optional

attribute: **median** value: **value** Optional

attribute: **minimum** value: **value** Optional

attribute: **sample_bit_mask** value: **value** Optional

attribute: **standard_deviation** value: **value** Optional

- End_Class

- Special_Constants - Occurs 0 to 1 Times

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.
role: Concrete

attribute: **error_constant** value: **value** Optional

attribute: **invalid_constant** value: **value** Optional

attribute: **missing_constant** value: **value** Optional

attribute: **not_applicable_constant** value: **value** Optional

attribute: **saturated_constant** value: **value** Optional

attribute: **unknown_constant** value: **value** Optional

- End_Class

- End_Class

- Image_Map_Projection

description: The IMAGE_MAP_PROJECTION object is one of two distinct objects that define the map projection used in creating

the digital images in a PDS data set. The name of the other associated object that completes the definition is DATA_SET_MAP_PROJECTION. The map projection information resides in these two objects, essentially to reduce data redundancy and at the same time allow the inclusion of elements needed to process the data at the image level. Basically, static information that is applicable to the complete data set reside in the DATA_SET_MAP_PROJECTION object, while dynamic information that is applicable to the individual images reside in the IMAGE_MAP_PROJECTION object.

role: **Concrete**

attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* Optional
attribute: **data_set_id** value: *value* Optional
attribute: **a_axis_radius** value: *value*
attribute: **b_axis_radius** value: *value*
attribute: **c_axis_radius** value: *value*
attribute: **center_latitude** value: *value*
attribute: **center_longitude** value: *value*
attribute: **coordinate_system_name** value: ..., apxs_frame, body_fixed_spherical_coords, earth-sun_line_cartes_coords, ecliptic_inertial_cart_coords, ecliptic_inertl_sphercl_coords, equatorial_inert_sphrci_coords, equatorial_inertial_cart_coord, jupiter_minus_system_iii, mast_frame, mb_frame, mean_inertial_hg_1950, mi_frame, neptune_west_longitude_system, non-rotating_spin_coordinates, planet_centered_cylindrical, planetocentric, planetographic, pvo_inertial_spacecraft_coords, pvo_spinning_spacecraft_coords, rat_frame, rover_frame, saturn_minus_longitude_system, sc_centered_ecliptic_coords, uranus_minus_longitude_system, uranus_west_longitude_system
attribute: **coordinate_system_type** value: body-fixed_non-rotating, body-fixed_rotating, inertial
attribute: **eastern_most_longitude** value: *value*
attribute: **first_standard_parallel** value: *value* Optional
attribute: **horizontal_framelet_offset** value: *value* Optional
attribute: **image_id** value: *value* Optional
attribute: **line_first_pixel** value: *value*
attribute: **line_last_pixel** value: *value*
attribute: **line_projection_offset** value: *value*
attribute: **map_projection_name** value: AITOFF, ALBERS, BONNE, BRIESEMEISTER, CYLINDRICAL_EQUAL_AREA, EQUIDISTANT, EQUIRECTANGULAR, GNOMONIC, HAMMER, HENDU, LAMBERT AZIMUTHAL EQUAL AREA, LAMBERT CONFORMAL, MERCATOR, MOLLWEIDE, OBLIQUE CYLINDRICAL, ORTHOGRAPHIC, POLAR STEREOGRAPHIC, SIMPLE CYLINDRICAL, SINUSOIDAL, STEREOGRAPHIC, TRANSVERSE MERCATOR, VAN DER GRINTEN, WERNER
attribute: **map_projection_rotation** value: *value*
attribute: **map_resolution** value: *value*
attribute: **map_scale** value: *value*
attribute: **maximum_latitude** value: *value*
attribute: **minimum_latitude** value: *value*
attribute: **positive_longitude_direction** value: east, west
attribute: **reference_latitude** value: *value* Optional
attribute: **reference_longitude** value: *value* Optional
attribute: **sample_first_pixel** value: *value*
attribute: **sample_last_pixel** value: *value*
attribute: **sample_projection_offset** value: *value*
attribute: **second_standard_parallel** value: *value* Optional
attribute: **vertical_framelet_offset** value: *value* Optional
attribute: **western_most_longitude** value: *value*

- **End_Class**

- **Local_DD**

description: The Local_DD class defines a local data dictionary.
role: **Concrete**
attribute: **comment** value: *value*
attribute: **version_id** value: *value*
attribute: **registration_authority_id** value: *value*
attribute: **steward_id** value: *value*
attribute: **name_space_id** value: *value*
attribute: **full_name** value: *value*
attribute: **last_modification_date_time** value: *value*
attribute: **pds4_merge_flag** value: F, T

- **Local_Attribute - Occurs 1 to * Times**

description: The Local_Attribute class defines an attribute for a local data dictionary.
role: **Concrete**
attribute: **comment** value: *value*
attribute: **definition** value: *value*

attribute: **local_attribute_id** value: *value*
 attribute: **name** value: *value*
 attribute: **unit_of_measure_type** value: *UnitOfMeasure_AmountOfSubstance, UnitOfMeasure_Angle, UnitOfMeasure_Angular_Velocity, UnitOfMeasure_Area, UnitOfMeasure_Frequency, UnitOfMeasure_Length, UnitOfMeasure_Mass, UnitOfMeasure_Misc, UnitOfMeasure_None, UnitOfMeasure_OpticalPathLength, UnitOfMeasure_Pressure, UnitOfMeasure_Radiance, UnitOfMeasure_Rates, UnitOfMeasure_Scale, UnitOfMeasure_Solid_Angle, UnitOfMeasure_Storage, UnitOfMeasure_Temperature, UnitOfMeasure_Time, UnitOfMeasure_Velocity, UnitOfMeasure_Voltage, UnitOfMeasure_Volume*
 attribute: **data_type** value: *ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real, ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID*
 attribute: **minimum_value** value: *value*
 attribute: **maximum_value** value: *value*
 attribute: **pattern** value: *value*

- **Local_Value_Domain - Occurs 0 to * Times**

description: The Local_Value_Domain class defines a value and an optional definition for an attribute in a local data dictionary.
 role: **Concrete**
 attribute: **value** value: *value*
 attribute: **value_meaning** value: *value* Optional

- **End_Class**

- **End_Class**

- **Local_Class - Occurs 1 to * Times**

description: The Local_Class class defines a user class, a collection of attributes in a local data dictionary.
 role: **Concrete**
 attribute: **description** value: *value*
 attribute: **name** value: *value*

- **Local_Association - Occurs 1 to * Times**

description: The Local_Association class defines the membership between a class and an attribute in a local data dictionary.
 role: **Concrete**
 attribute: **constant_value** value: *value*
 attribute: **local_attribute_id** value: *value*
 attribute: **maximum_occurrences** value: *value*
 attribute: **minimum_occurrences** value: *value*

- **End_Class**

- **End_Class**

- **Package**

description: The Package class is an abstract class. It represents a Manifest Product and all related files logically grouped together for transfer. The Package class does not include the container in which the manifest and files are contained. This class has no subclasses and is not instantiated.
 role: **Concrete**

- **Identification_Area_Manifest Occurs 1 Times**

description: The manifest identification area consists of attributes involved in the role of identifying and naming a manifest.
 role: **Concrete**
 attribute: **logical_identifier** value: *value*
 attribute: **version_id** value: *value*
 attribute: **product_class** value: *value*
 attribute: **title** value: *value*
 attribute: **alternate_title** value: *value* Optional

attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Manifest - Occurs 0 to 1 Times**

description: The manifest cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Reference_Entry - Occurs 0 to * Times**

description: The Reference Entry class provides a reference and type information about the reference. The reference is to a product.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: has_association

- **End_Class**

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: Concrete

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Manifest Occurs 1 Times**

description: The Data_Area_Manifest class requires one table character that is compliant to a file generated from MD5 checksum software.

role: Concrete

- **Manifest Occurs 1 Times - Base_Class:Table_Base**

description: The manifest class defines a table for file references.

role: Concrete

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: Concrete

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: CHARACTER

attribute: **fields** value: **value**

attribute: **record_bytes** value: **value**

attribute: **records** value: **value**

- **Table_Record_Character - Occurs 1 to * Times**

description: The Table Record Character class is a component of the table class and defines a record of the table. This extension defines a character record.

role: Concrete

- **Table_Character_Field - Occurs 1 to * Times**

description: The Table Character Field class is a component of the table record class and defines a field of the record. This extension defines a character field.

role: Concrete

attribute: **field_name** value: **value**

attribute: **field_number** value: **value** Optional

attribute: **field_data_type** value: ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY,

ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD,

ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID,

ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real,

ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved,

ASCII_Time, ASCII_VID

attribute: **field_location** value: **value**

attribute: **field_length** value: **value**

attribute: **field_format** value: **value** Optional

attribute: **minimum_scaled_value** value: **value** Optional

attribute: **maximum_scaled_value** value: **value** Optional

attribute: **field_min_logical** value: **value** Optional

attribute: **field_max_logical** value: **value** Optional

attribute: **field_scaling_factor** value: **value** Optional

attribute: **field_value_offset** value: **value** Optional

attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr
Optional

attribute: **field_description** value: **value** Optional

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **maximum** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **mean** value: **value** Optional

attribute: **median** value: **value** Optional

attribute: **minimum** value: **value** Optional

attribute: **sample_bit_mask** value: **value** Optional

attribute: **standard_deviation** value: **value** Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.

role: **Concrete**

attribute: **error_constant** value: **value** Optional

attribute: **invalid_constant** value: **value** Optional

attribute: **missing_constant** value: **value** Optional

attribute: **not_applicable_constant** value: **value** Optional

attribute: **saturated_constant** value: **value** Optional

attribute: **unknown_constant** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Browse**

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

role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key

phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Misc - Occurs 0 to 1 Times**

description: The miscellaneous cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional

attribute: **description** value: **value** Optional

attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- End_Class
- End_Class
- End_Class

- **Reference_Entry - Occurs 0 to * Times**

description: The Reference Entry class provides a reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association**

- End_Class
- End_Class

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- End_Class
- End_Class

- **Data_Area_Encoded_Image - Occurs 0 to * Times**

description: The Encoded Image Data Area requires one encoded byte stream data object description called Encoded Image.

role: **Concrete**

- **Encoded_Image Occurs 1 Times**

description: The Encoded Image class, a subclass of Encoded Byte stream is used for ancillary images in standard formats, such as JPEG.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- End_Class

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: **BINARY**

attribute: **external_standard_id** value: **GIF, JPEG, TIFF**

- End_Class

- End_Class

- End_Class

- **Product_Bundle**

description: Product Bundle is a cluster product and has a table of references to one or more collections.
role: **Concrete**

- **Identification_Area_Bundle Occurs 1 Times**

description: The bundle identification area consists of attributes involved in the role of identifying and naming a bundle.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Bundle - Occurs 0 to 1 Times**

description: The bundle cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Reference_Entry - Occurs 0 to * Times**

description: The Reference Entry class provides a reference and type information about the reference. The

reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association**

- **End_Class**

- **End_Class**

- **Bundle_Member_Entry - Occurs 1 to * Times**

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

role: **Concrete**

attribute: **file_specification_name** value: **value**

attribute: **lid_reference** value: **value**

attribute: **reference_association_type** value: **has_browse_collection, has_calibration_collection, has_context_collection, has_data_collection, has_document_collection, has_geometry_collection, has_member_collection, has_miscellaneous_collection, has_spice_collection, has_xml_schema_collection**

- **End_Class**

- **End_Class**
-

- **Product_Citation**

description: **A Citation product provides reference information about a document.**

role: **Concrete**

- **Identification_Area Occurs 1 Times**

description: **The identification area consists of attributes involved in the role of identifying and naming an object.**

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: **The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.**

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: **The Name_Resolution class provides both primary and alternate names of an object.**

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: **ALTERNATE, PRIMARY**

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Context - Occurs 0 to 1 Times**

description: The context cross reference area provides references to associated registered products.
role: Concrete

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: Concrete

attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: Concrete

attribute: **lid_reference** value: *value* Optional
attribute: **lidvid_reference** value: *value* Optional
attribute: **reference_association_type** value: **has_association**, **has_instrument**, **has_instrument_host**, **has_investigation**, **has_node**, **has_personnel**, **has_publication**, **has_resource**, **has_target**

- **End_Class**

- **End_Class**

- **Citation Occurs 1 Times**

description: The Citation class provides text to be used for quoting an artifact as an authoritative source.

role: Concrete

attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **citation_text** value: *value*

- **End_Class**

- **End_Class**

- **Product_Data_Set**

description: The Data Set product describes a PDS Data Set.
role: Concrete

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: Concrete

attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_publication, has_resource, has_target

- **End_Class**

- **End_Class**

- **Data_Set Occurs 1 Times**

description: The Data Set class provides a description of a set of collection of observational products and associated ancillary collections and products.

role: **Concrete**

attribute: **data_set_id** value: **value**
attribute: **description** value: **value** Optional
attribute: **data_set_name** value: **value**
attribute: **data_set_release_date** value: **value**
attribute: **start_date_time** value: **value**
attribute: **stop_date_time** value: **value**
attribute: **producer_full_name** value: **value**
attribute: **citation_text** value: **value**
attribute: **data_set_terse_desc** value: **value**

attribute: **abstract_desc** value: *value*
attribute: **data_set_desc** value: *value*
attribute: **confidence_level_note** value: *value*
attribute: **archive_status** value: ACCUMULATING, 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, SAVED, SUPERSEDED Optional

- End_Class

- **Bundle_Member_Entry - Occurs 1 to * Times**

description: The Bundle Member Entry class provides a member reference to a collection.

role: **Concrete**

attribute: **file_specification_name** value: *value*

attribute: **lid_reference** value: *value*

attribute: **reference_association_type** value: has_browse_collection, has_calibration_collection, has_context_collection,
has_data_collection, has_document_collection, has_geometry_collection, has_member_collection,
has_miscellaneous_collection, has_spice_collection, has_xml_schema_collection

- End_Class

- End_Class
-

- **Product_Document**

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

role: **Concrete**

- **Identification_Area_Document Occurs 1 Times**

description: The document identification area consists of attributes involved in the role of identifying and naming a document product.

role: **Concrete**

attribute: **logical_identifier** value: *value*

attribute: **version_id** value: *value*

attribute: **product_class** value: *value*

attribute: **title** value: *value*

attribute: **alternate_title** value: *value* Optional

attribute: **alternate_id** value: *value* Optional

attribute: **last_modification_date_time** value: *value* Optional

attribute: **product_subclass** value: AAREADME, ERRATA, Programmers_Manual, SIS, Users_Manual

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: *value* Optional

attribute: **instrument_name** value: *value* Optional

attribute: **instrument_host_name** value: *value* Optional

attribute: **full_name** value: *value* Optional

attribute: **investigation_name** value: *value* Optional

attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: *value*

attribute: **lidvid_reference** value: *value* Optional

attribute: **name** value: *value*

attribute: **primary_name** value: *value*

attribute: **role** value: ALTERNATE, PRIMARY

- End_Class

- End_Class
- End_Class
- Cross_Reference_Area_Document - Occurs 0 to 1 Times

description: The document cross reference area provides references to associated registered products.
role: Concrete

 - Bibliographic_Reference - Occurs 0 to * Times

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: Concrete
attribute: local_identifier value: value
attribute: description value: value Optional
attribute: doi value: value Optional
attribute: reference_text value: value
attribute: url value: value Optional
 - End_Class
- Observing_System - Occurs 0 to * Times

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.
role: Concrete
attribute: local_identifier value: value Optional
attribute: description value: value Optional
attribute: title value: value

 - Observing_System_Component - Occurs 1 to 2 Times

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: Concrete
attribute: observing_system_component_type value: SENSOR, SOURCE
 - Observing_System_Reference_Entry - Occurs 1 to * Times

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.
role: Concrete
attribute: lid_reference value: value Optional
attribute: lidvid_reference value: value Optional
attribute: reference_association_type value: has_association, has_instrument, has_instrument_host

 - End_Class
 - End_Class
 - End_Class
 - Reference_Entry - Occurs 0 to * Times

description: The Reference Entry class provides a reference and type information about the reference. The reference is to a product.
role: Concrete
attribute: lid_reference value: value Optional
attribute: lidvid_reference value: value Optional
attribute: reference_association_type value: has_association

 - End_Class
 - End_Class
 - File_Area Occurs 1 Times

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Document_Format_Set - Occurs 1 to * Times**

description: The Document Format Set class is a set consisting of a document format and associated files.
role: **Concrete**

- **Document_File - Occurs 1 to * Times**

description: The Document File class describes a file which is a part of a document.

role: **Concrete**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **directory_path_name** value: **value** Optional
attribute: **encoding_type** value: **BINARY, CHARACTER**
attribute: **external_standard_id** value: **ENCAPSULATED_POSTSCRIPT, GIF, HTML, JPG, LaTEX, MICROSOFT_WORD, PDF, PDF-A, PNG, POSTSCRIPT, RICH_TEXT, TEXT, TIFF**
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**

- **Document_Format Occurs 1 Times**

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.

role: **Concrete**

attribute: **description** value: **value** Optional
attribute: **format_type** value: **HTML, PDF-A, TEXT**
attribute: **starting_point_identifier** value: **value** Optional

- **End_Class**

- **End_Class**

- **Document_Desc Occurs 1 Times**

description: The Document_Desc class describes a document.

role: **Concrete**

attribute: **description** value: **value** Optional
attribute: **acknowledgement_text** value: **value** Optional
attribute: **author_list** value: **value** Optional
attribute: **copyright** value: **value** Optional
attribute: **document_title** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **editor_list** value: **value** Optional
attribute: **publication_date** value: **value**
attribute: **revision_id** value: **value** Optional

- End_Class
 - End_Class
-

- Product_Element_Definition

description: The Product Element Definition provides an attribute definition in XML encoding.
role: Concrete

- Identification_Area Occurs 1 Times

description: The identification area consists of attributes involved in the role of identifying and naming an object.
role: Concrete
attribute: logical_identifier value: value
attribute: version_id value: value
attribute: product_class value: value
attribute: title value: value
attribute: alternate_title value: value Optional
attribute: alternate_id value: value Optional
attribute: last_modification_date_time value: value Optional
attribute: product_subclass value: value Optional

- Subject_Area - Occurs 0 to 1 Times

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: Concrete
attribute: target_name value: value Optional
attribute: instrument_name value: value Optional
attribute: instrument_host_name value: value Optional
attribute: full_name value: value Optional
attribute: investigation_name value: value Optional
attribute: observing_system_name value: value Optional

- Name_Resolution - Occurs 0 to * Times

description: The Name_Resolution class provides both primary and alternate names of an object.
role: Concrete
attribute: class_name value: value
attribute: lidvid_reference value: value Optional
attribute: name value: value
attribute: primary_name value: value
attribute: role value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- Cross_Reference_Area - Occurs 0 to 1 Times

description: The cross reference area provides references for associated products.
role: Concrete

- Bibliographic_Reference - Occurs 0 to * Times

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: Concrete
attribute: local_identifier value: value
attribute: description value: value Optional
attribute: doi value: value Optional
attribute: reference_text value: value
attribute: url value: value Optional

- End_Class

- **Reference_Entry_Generic - Occurs 0 to * Times**

description: The Reference Entry Generic class provides a reference and type information about the reference.
The reference is to a product.
role: **Abstract**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **value**

- **End_Class**

- **End_Class**

- **Element_Definition Occurs 1 Times**

description: The Element_Definition class defines an attribute in the data dictionary.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **title** value: **value**
attribute: **is_enumerated_flag** value: F, T
attribute: **class_name** value: **value**
attribute: **registration_authority_id** value: **value**
attribute: **steward_id** value: **value**
attribute: **name_space_id** value: **value**
attribute: **registered_by** value: **value**
attribute: **submitter_id** value: **value**
attribute: **data_element_concept** value: **value**

- **Terminological_Entry - Occurs 1 to * Times**

description: The terminological_entry class provides the name (designation) and definition of the attribute in a specified natural language.
role: **Concrete**
attribute: **designation** value: **value**
attribute: **definition** value: **value**
attribute: **language** value: English

- **End_Class**

- **Value_Domain - Occurs 0 to 1 Times**

description: The value_domain class defines the permissible values allowed. These may be enumerated or non-enumerated values.
role: **Concrete**
attribute: **default_unit_id** value: **value** Optional
attribute: **data_type** value: ..., ascii_complex, ascii_integer, ascii_real, binary_coded_decimal, bit_string, boolean, character, complex, date, ebcDIC_character, float, ibm_complex, ibm_integer, ibm_real, ibm_unsigned_integer, ieee_complex, ieee_real, integer, lsb_bit_string, lsb_integer, lsb_unsigned_integer, mac_complex, mac_integer, mac_real, mac_unsigned_integer
attribute: **formation_rule** value: **value** Optional
attribute: **minimum_characters** value: **value** Optional
attribute: **maximum_characters** value: **value** Optional
attribute: **minimum_value** value: **value** Optional
attribute: **maximum_value** value: **value** Optional
attribute: **pattern** value: **value** Optional
attribute: **unit_of_measure_name** value: **value** Optional

- **Permissible_Value - Occurs 0 to 1 Times**

description: The permissible_value class lists the permissible values allowed and optionally their meanings.
role: **Concrete**
attribute: **value** value: **value**
attribute: **value_meaning** value: **value** Optional
attribute: **begin_date** value: **value**
attribute: **end_date** value: **value**

- End_Class
 - End_Class
 - End_Class
 - End_Class
-

- Product_Generic

description: The Product Generic class defines a template for all data products.

role: **Concrete**

- Identification_Area_Product Occurs 1 Times

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: **Concrete**

attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- Subject_Area Occurs 1 Times

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- Name_Resolution - Occurs 0 to * Times

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- Cross_Reference_Area_Product Occurs 1 Times

description: The product cross reference area provides references to associated registered products.

role: **Concrete**

- Bibliographic_Reference - Occurs 0 to * Times

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- End_Class
- Observing_System - Occurs 1 to * Times

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.
 role: Concrete
 attribute: [local_identifier](#) value: [value](#) Optional
 attribute: [description](#) value: [value](#) Optional
 attribute: [title](#) value: [value](#)
- Observing_System_Component - Occurs 1 to 2 Times

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
 role: Concrete
 attribute: [observing_system_component_type](#) value: SENSOR, SOURCE
- Observing_System_Reference_Entry - Occurs 1 to * Times

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.
 role: Concrete
 attribute: [lid_reference](#) value: [value](#) Optional
 attribute: [lidvid_reference](#) value: [value](#) Optional
 attribute: [reference_association_type](#) value: has_association, has_instrument, has_instrument_host
- End_Class
- End_Class
- End_Class
- Product_Reference_Entry - Occurs 0 to * Times

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.
 role: Concrete
 attribute: [lid_reference](#) value: [value](#) Optional
 attribute: [lidvid_reference](#) value: [value](#) Optional
 attribute: [reference_association_type](#) value: curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail
- End_Class
- End_Class
- Observation_Area Occurs 1 Times

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.
 role: Concrete
- Mission_Area - Occurs 0 to * Times

description: The mission area allow the insertion of mission specific metadata.
 role: Concrete
- End_Class
- Node_Area - Occurs 0 to * Times

description: The node area allow the insertion of node specific metadata.
 role: Concrete
- End_Class

- attribute: **comment** value: **value** Optional
- attribute: **start_date_time** value: **value**
- attribute: **stop_date_time** value: **value**
- attribute: **spacecraft_clock_start_count** value: **value** Optional
- attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**

- attribute: **local_identifier** value: **value**
- attribute: **comment** value: **value** Optional
- attribute: **creation_date_time** value: **value** Optional
- attribute: **file_name** value: **value**
- attribute: **file_size** value: **value** Optional
- attribute: **max_record_bytes** value: **value** Optional
- attribute: **md5_checksum** value: **value** Optional
- attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.
role: **Concrete**

- **Tagged_Digital_Object - Occurs 0 to * Times**

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
role: **Abstract**

- **End_Class**

- **End_Class**

- **Data_Area_Generic Occurs 1 Times**

description: The Data Area Generic requires at least one digital object.
role: **Concrete**

- **Image_Grayscale - Occurs 0 to * Times - Base_Class:Array_Base**

description: The Image Grayscale class is an extension of array_base and defines a two dimensional grayscale image.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**

- attribute: **file_local_identifier** value: **value**
- attribute: **offset** value: **value**

- **End_Class**

- attribute: **local_identifier** value: **value**
- attribute: **comment** value: **value** Optional
- attribute: **axes** value: **2**
- attribute: **axis_order** value: **FIRST_INDEX_FASTEST**
- attribute: **encoding_type** value: **BINARY**

- **Array_Axis Occurs 2 Times**

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

role: **Concrete**

attribute: **elements** value: *value*

attribute: **name** value: *value*

attribute: **sequence_number** value: *value*

attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

- **End_Class**

- **Array_Element Occurs 1 Times**

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

role: **Concrete**

attribute: **scaling_factor** value: *value* Optional

attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

attribute: **value_offset** value: *value* Optional

attribute: **data_type** value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- **End_Class**

- **Image_2D_Display - Occurs 0 to 1 Times**

description: The Image_2D_Display class provides attributes to enable the display of a 2D image.

role: **Concrete**

attribute: **first_line** value: *value*

attribute: **first_line_sample** value: *value*

attribute: **line_display_direction** value: DOWN, LEFT, RIGHT, UP

attribute: **sample_display_direction** value: DOWN, LEFT, RIGHT, UP

- **End_Class**

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.

role: **Concrete**

attribute: **local_identifier** value: *value*

attribute: **description** value: *value* Optional

attribute: **maximum** value: *value* Optional

attribute: **md5_checksum** value: *value* Optional

attribute: **mean** value: *value* Optional

attribute: **median** value: *value* Optional

attribute: **minimum** value: *value* Optional

attribute: **sample_bit_mask** value: *value* Optional

attribute: **standard_deviation** value: *value* Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.

role: **Concrete**

attribute: **error_constant** value: *value* Optional

attribute: **invalid_constant** value: *value* Optional

attribute: **missing_constant** value: *value* Optional

- attribute: **not_applicable_constant** value: **value** Optional
- attribute: **saturated_constant** value: **value** Optional
- attribute: **unknown_constant** value: **value** Optional

- **End_Class**
- **End_Class**

- **SPICE_Kernel_Binary - Occurs 0 to * Times**

description: The SPICE Kernel class describes a SPICE file.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**

- attribute: **file_local_identifier** value: **value**
- attribute: **offset** value: **value**

- **End_Class**
- attribute: **local_identifier** value: **value**
- attribute: **comment** value: **value** Optional

- attribute: **encoding_type** value: **BINARY**
- attribute: **external_standard_id** value: **SPICE**
- attribute: **kernel_type** value: **CK, DBK, DSK, EK, PCK, SPK**

- **End_Class**

- **SPICE_Kernel_Text - Occurs 0 to * Times**

description: The SPICE Kernel class describes a SPICE file.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**

- attribute: **file_local_identifier** value: **value**
- attribute: **offset** value: **value**

- **End_Class**

- attribute: **local_identifier** value: **value**
- attribute: **comment** value: **value** Optional
- attribute: **encoding_type** value: **CHARACTER**
- attribute: **external_standard_id** value: **value**
- attribute: **kernel_type** value: **EK, FK, IK, LSK, MK, PCK, SCLK**

- **End_Class**

- **Spectrum_3D - Occurs 0 to * Times - Base_Class:Array_Base**

description: The Spectrum 3D class is an extension of array_base and defines a three dimensional spectrum.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**

- attribute: **file_local_identifier** value: **value**
- attribute: **offset** value: **value**

- **End_Class**

- attribute: **local_identifier** value: **value**
- attribute: **comment** value: **value** Optional
- attribute: **axes** value: **3**
- attribute: **axis_order** value: **FIRST_INDEX_FASTEST**
- attribute: **encoding_type** value: **BINARY**

- **Array_Axis Occurs 3 Times**

description: The Array Axis class is used as a component of the array class and defines an axis of the array.
role: Concrete
attribute: **elements** value: *value*
attribute: **name** value: *value*
attribute: **sequence_number** value: *value*
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

- End_Class

- **Array_Element Occurs 1 Times**

description: The Array Element class is used as a component of the array class and defines an element of the array.
role: Concrete
attribute: **scaling_factor** value: *value* Optional
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
attribute: **value_offset** value: *value* Optional
attribute: **data_type** value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- End_Class

- End_Class

- **Stream_Delimited - Occurs 0 to * Times**

description: The Stream Delimited class defines a simple spreadsheet.
role: Concrete

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: Concrete
attribute: **file_local_identifier** value: *value*
attribute: **offset** value: *value*

- End_Class

attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* Optional
attribute: **encoding_type** value: CHARACTER
attribute: **external_standard_id** value: CSV
attribute: **field_delimiter** value: 0x09, 0x2C, 0x3B, 0x7C
attribute: **fields** value: *value*
attribute: **maximum_record_length** value: *value*
attribute: **record_delimiter** value: 0xOA, 0xOD, 0xOD_0xOA
attribute: **records** value: *value*

- **Stream_Delimited_Record - Occurs 1 to * Times**

description: The Stream Delimited Record class is a component of the stream delimited (spreadsheet) class and defines a record of the spreadsheet.
role: Concrete

- **Stream_Delimited_Grouped_Sequence - Occurs 1 to * Times**

description: The Stream Delimited Grouped Sequence class is a component of the grouped stream delimited (spreadsheet) class. It defines a set of fields.
role: Concrete
attribute: **repetitions** value: *value* Optional

- **Stream_Delimited_Field_Sequence - Occurs 1 to * Times**

description: The Stream Delimited Field Sequence class is a component of the grouped

stream delimited (spreadsheet) class. It defines a set of fields or a nested set of fields.
role: **Concrete**

- **Stream_Delimited_Field - Occurs 0 to * Times**

description: The Stream Delimited Field class is a component of the stream delimited (spreadsheet) record class and defines a field of the record.

role: **Concrete**

attribute: **field_name** value: **value**

attribute: **field_number** value: **value** Optional

attribute: **field_data_type** value: ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real, ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID

attribute: **field_format** value: **value** Optional

attribute: **minimum_scaled_value** value: **value** Optional

attribute: **maximum_scaled_value** value: **value** Optional

attribute: **field_min_logical** value: **value** Optional

attribute: **field_max_logical** value: **value** Optional

attribute: **field_scaling_factor** value: **value** Optional

attribute: **field_value_offset** value: **value** Optional

attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr

attribute: **field_description** value: **value** Optional

attribute: **field_bytes** value: **value**

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **maximum** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **mean** value: **value** Optional

attribute: **median** value: **value** Optional

attribute: **minimum** value: **value** Optional

attribute: **sample_bit_mask** value: **value** Optional

attribute: **standard_deviation** value: **value** Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.

role: **Concrete**

attribute: **error_constant** value: **value** Optional

attribute: **invalid_constant** value: **value** Optional

attribute: **missing_constant** value: **value** Optional

attribute: **not_applicable_constant** value: **value** Optional

attribute: **saturated_constant** value: **value** Optional

attribute: **unknown_constant** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Table_Binary - Occurs 0 to * Times - Base_Class:Table_Base**

description: The Table Binary class is an extension of table base and defines a simple binary table.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: **BINARY**

attribute: **fields** value: **value**

attribute: **record_bytes** value: **value**

attribute: **records** value: **value**

- **Table_Record_Binary - Occurs 1 to * Times**

description: The Table Record Binary class is a component of the table class and defines a record of the table. This extension defines a binary record.

role: **Concrete**

- **Table_Binary_Field - Occurs 1 to * Times**

description: The Table Binary Field class is a component of the table record class and defines a field of the record. This extension defines a binary field.

role: **Concrete**

attribute: **field_name** value: **value**

attribute: **field_number** value: **value** Optional

attribute: **field_data_type** value: Bit, ComplexB16, ComplexB8, IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedMSB2, UnsignedMSB4

attribute: **field_location** value: **value**

attribute: **field_length** value: **value**

attribute: **field_format** value: **value** Optional

attribute: **minimum_scaled_value** value: **value** Optional

attribute: **maximum_scaled_value** value: **value** Optional

attribute: **field_min_logical** value: **value** Optional

attribute: **field_max_logical** value: **value** Optional

attribute: **field_scaling_factor** value: **value** Optional

attribute: **field_value_offset** value: **value** Optional

attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr
Optional

attribute: **field_description** value: **value** Optional

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **maximum** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **mean** value: **value** Optional

attribute: **median** value: **value** Optional

attribute: **minimum** value: **value** Optional

attribute: **sample_bit_mask** value: **value** Optional

attribute: **standard_deviation** value: **value** Optional

- End_Class

- Special_Constants - Occurs 0 to 1 Times

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.

role: **Concrete**

attribute: **error_constant** value: **value** Optional
 attribute: **invalid_constant** value: **value** Optional
 attribute: **missing_constant** value: **value** Optional
 attribute: **not_applicable_constant** value: **value** Optional
 attribute: **saturated_constant** value: **value** Optional
 attribute: **unknown_constant** value: **value** Optional

- End_Class

- End_Class

- End_Class

- End_Class

- Table_Character - Occurs 0 to * Times - Base_Class:Table_Base

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

role: **Concrete**

- Data_Location Occurs 1 Times

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**
 attribute: **offset** value: **value**

- End_Class

attribute: **local_identifier** value: **value**
 attribute: **comment** value: **value** Optional
 attribute: **encoding_type** value: CHARACTER
 attribute: **fields** value: **value**
 attribute: **record_bytes** value: **value**
 attribute: **records** value: **value**

- Table_Record_Character - Occurs 1 to * Times

description: The Table Record Character class is a component of the table class and defines a record of the table. This extension defines a character record.

role: **Concrete**

- Table_Character_Field - Occurs 1 to * Times

description: The Table Character Field class is a component of the table record class and defines a field of the record. This extension defines a character field.

role: **Concrete**

attribute: **field_name** value: **value**
 attribute: **field_number** value: **value** Optional
 attribute: **field_data_type** value: ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real, ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID
 attribute: **field_location** value: **value**
 attribute: **field_length** value: **value**
 attribute: **field_format** value: **value** Optional
 attribute: **minimum_scaled_value** value: **value** Optional
 attribute: **maximum_scaled_value** value: **value** Optional
 attribute: **field_min_logical** value: **value** Optional
 attribute: **field_max_logical** value: **value** Optional
 attribute: **field_scaling_factor** value: **value** Optional
 attribute: **field_value_offset** value: **value** Optional
 attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec,

bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr
Optional

attribute: **field_description** value: **value** Optional

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **maximum** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **mean** value: **value** Optional

attribute: **median** value: **value** Optional

attribute: **minimum** value: **value** Optional

attribute: **sample_bit_mask** value: **value** Optional

attribute: **standard_deviation** value: **value** Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.

role: **Concrete**

attribute: **error_constant** value: **value** Optional

attribute: **invalid_constant** value: **value** Optional

attribute: **missing_constant** value: **value** Optional

attribute: **not_applicable_constant** value: **value** Optional

attribute: **saturated_constant** value: **value** Optional

attribute: **unknown_constant** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Image_3D**

description: The Product Image 3D class defines a product consisting of at least one 3D image and other associated data objects and metadata.

role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key

phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional

attribute: **description** value: **value** Optional

attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- End_Class
- End_Class
- End_Class

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- End_Class

- End_Class

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- End_Class

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.

role: **Concrete**

- End_Class

attribute: **comment** value: **value** Optional
attribute: **start_date_time** value: **value**
attribute: **stop_date_time** value: **value**
attribute: **spacecraft_clock_start_count** value: **value** Optional
attribute: **spacecraft_clock_stop_count** value: **value** Optional

- End_Class

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- End_Class

- End_Class

- Data_Area_Image_3D Occurs 1 Times

description: The Image 3D Data Area requires at least one 3D Image digital object.
role: Concrete

- Image_3D Occurs 1 Times - Base_Class:Array_Base

description: The Image 3D class is an extension of array_base and defines a three dimensional image.
role: Concrete

- Data_Location Occurs 1 Times

description: The Data Location class provides the location of a digital object.
role: Concrete
attribute: file_local_identifier value: value
attribute: offset value: value

- End_Class

attribute: local_identifier value: value
attribute: comment value: value Optional
attribute: axes value: 3
attribute: axis_order value: FIRST_INDEX_FASTEST
attribute: encoding_type value: BINARY

- Array_Axis Occurs 3 Times

description: The Array Axis class is used as a component of the array class and defines an axis of the array.
role: Concrete
attribute: elements value: value
attribute: name value: value
attribute: sequence_number value: value
attribute: unit value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

- End_Class

- Array_Element Occurs 1 Times

description: The Array Element class is used as a component of the array class and defines an element of the array.
role: Concrete
attribute: scaling_factor value: value Optional
attribute: unit value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
attribute: value_offset value: value Optional
attribute: data_type value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- End_Class

- End_Class

- End_Class

- Data_Area_Alternate - Occurs 0 to * Times

description: The Data Area Alternate allows the inclusion of any Data Object Description.
role: Concrete

- Tagged_Digital_Object - Occurs 0 to * Times

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
role: Abstract

- End_Class
 - End_Class
 - End_Class
-

- Product_Image_Grayscale

description: The Product Image Grayscale class defines a product consisting of at least one grayscale image and other associated data objects and metadata.

role: Concrete

- Identification_Area_Product Occurs 1 Times

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: Concrete

attribute: logical_identifier value: value

attribute: version_id value: value

attribute: product_class value: value

attribute: title value: value

attribute: alternate_title value: value Optional

attribute: alternate_id value: value Optional

attribute: last_modification_date_time value: value Optional

attribute: product_subclass value: value Optional

- Subject_Area Occurs 1 Times

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: Concrete

attribute: target_name value: value Optional

attribute: instrument_name value: value Optional

attribute: instrument_host_name value: value Optional

attribute: full_name value: value Optional

attribute: investigation_name value: value Optional

attribute: observing_system_name value: value Optional

- Name_Resolution - Occurs 0 to * Times

description: The Name_Resolution class provides both primary and alternate names of an object.

role: Concrete

attribute: class_name value: value

attribute: lidvid_reference value: value Optional

attribute: name value: value

attribute: primary_name value: value

attribute: role value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- Cross_Reference_Area_Product Occurs 1 Times

description: The product cross reference area provides references to associated registered products.

role: Concrete

- Bibliographic_Reference - Occurs 0 to * Times

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: Concrete

attribute: local_identifier value: value

attribute: description value: value Optional

attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**
- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: **SENSOR, SOURCE**

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- **End_Class**

- **End_Class**

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.
role: **Concrete**

- **End_Class**

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.
role: **Concrete**

- **End_Class**
attribute: **comment** value: **value** Optional
attribute: **start_date_time** value: **value**
attribute: **stop_date_time** value: **value**
attribute: **spacecraft_clock_start_count** value: **value** Optional
attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Image_Grayscale Occurs 1 Times**

description: The Image Grayscale Data Area requires at least one image grayscale digital object.
role: **Concrete**

- **Image_Grayscale Occurs 1 Times - Base_Class:Array_Base**

description: The Image Grayscale class is an extension of array_base and defines a two dimensional grayscale image.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **axes** value: **2**
attribute: **axis_order** value: **FIRST_INDEX_FASTEST**
attribute: **encoding_type** value: **BINARY**

- **Array_Axis Occurs 2 Times**

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

role: **Concrete**

attribute: **elements** value: **value**
attribute: **name** value: **value**
attribute: **sequence_number** value: **value**
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm,

cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

- End_Class

- Array_Element Occurs 1 Times

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

role: Concrete

attribute: scaling_factor value: value Optional

attribute: unit value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

attribute: value_offset value: value Optional

attribute: data_type value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- End_Class

- Image_2D_Display - Occurs 0 to 1 Times

description: The Image_2D_Display class provides attributes to enable the display of a 2D image.

role: Concrete

attribute: first_line value: value

attribute: first_line_sample value: value

attribute: line_display_direction value: DOWN, LEFT, RIGHT, UP

attribute: sample_display_direction value: DOWN, LEFT, RIGHT, UP

- End_Class

- Object_Statistics - Occurs 0 to 1 Times

description: The Object Statistics class provides a set of values that provide metrics about the object.

role: Concrete

attribute: local_identifier value: value

attribute: description value: value Optional

attribute: maximum value: value Optional

attribute: md5_checksum value: value Optional

attribute: mean value: value Optional

attribute: median value: value Optional

attribute: minimum value: value Optional

attribute: sample_bit_mask value: value Optional

attribute: standard_deviation value: value Optional

- End_Class

- Special_Constants - Occurs 0 to 1 Times

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.

role: Concrete

attribute: error_constant value: value Optional

attribute: invalid_constant value: value Optional

attribute: missing_constant value: value Optional

attribute: not_applicable_constant value: value Optional

attribute: saturated_constant value: value Optional

attribute: unknown_constant value: value Optional

- End_Class

- End_Class

- End_Class

- Data_Area_Alternate - Occurs 0 to * Times

description: The Data Area Alternate allows the inclusion of any Data Object Description.
role: **Concrete**

- **Tagged_Digital_Object - Occurs 0 to * Times**

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
role: **Abstract**

- **End_Class**
 - **End_Class**
 - **End_Class**
-

- **Product_Instrument**

description: An Instrument product describes an instrument.
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **livid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- End_Class

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: *value* Optional
attribute: **lidvid_reference** value: *value* Optional
attribute: **reference_association_type** value: **has_association**, **has_instrument**, **has_instrument_host**, **has_investigation**, **has_node**, **has_personnel**, **has_publication**, **has_resource**, **has_target**

- End_Class

- End_Class

- **Instrument Occurs 1 Times**

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

role: **Concrete**

attribute: **description** value: *value* Optional

- End_Class

- End_Class

- **Product_Instrument_Host**

description: An Instrument Host product describes an instrument host.

role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: **Concrete**

attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: *value* Optional
attribute: **instrument_name** value: *value* Optional
attribute: **instrument_host_name** value: *value* Optional
attribute: **full_name** value: *value* Optional
attribute: **investigation_name** value: *value* Optional
attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: *value*
attribute: **lidvid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- End_Class

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: *value* Optional
attribute: **lidvid_reference** value: *value* Optional
attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_publication, has_resource, has_target

- End_Class

- End_Class

- **Instrument_Host Occurs 1 Times**

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

role: **Concrete**

attribute: **description** value: *value* Optional

- End_Class

- End_Class
-

- **Product_Investigation**

description: The Investigation product describes an investigation.
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.
role: **Concrete**

attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: *value* Optional
attribute: **instrument_name** value: *value* Optional
attribute: **instrument_host_name** value: *value* Optional
attribute: **full_name** value: *value* Optional
attribute: **investigation_name** value: *value* Optional
attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: *value*
attribute: **lidvid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: *value* Optional
attribute: **lidvid_reference** value: *value* Optional
attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_publication, has_resource, has_target

- **End_Class**

- **End_Class**

- **Investigation Occurs 1 Times**

description: The Investigation class is the abstract parent class for all activities involved in the collection of data.
role: **Concrete**
attribute: **description** value: *value*
attribute: **objectives_summary** value: *value*
attribute: **start_date** value: *value*
attribute: **stop_date** value: *value*

- End_Class
 - End_Class
-

- **Product_Mission**

description: An Mission product describes a mission.
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.
role: **Concrete**
attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: *value* Optional
attribute: **instrument_name** value: *value* Optional
attribute: **instrument_host_name** value: *value* Optional
attribute: **full_name** value: *value* Optional
attribute: **investigation_name** value: *value* Optional
attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: *value*
attribute: **lidvid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**
attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

- **End_Class**

- **End_Class**

- **Mission Occurs 1 Times**

description: The Mission class describes an activity involved in the collection of data.

role: **Concrete**

attribute: **description** value: **value**
attribute: **objectives_summary** value: **value**
attribute: **start_date** value: **value**
attribute: **stop_date** value: **value**

- **End_Class**

- **End_Class**

- **Product_Movie**

description: The Product Movie class defines a product consisting of at least one movie and other associated data objects and metadata.

role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: **Concrete**

attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: *value*
attribute: **lidvid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: *value* Optional

attribute: **description** value: *value* Optional

attribute: **title** value: *value*

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: *value* Optional

attribute: **lidvid_reference** value: *value* Optional

attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about

the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- End_Class

- End_Class

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- End_Class

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.

role: **Concrete**

- End_Class

attribute: **comment** value: **value** Optional

attribute: **start_date_time** value: **value**

attribute: **stop_date_time** value: **value**

attribute: **spacecraft_clock_start_count** value: **value** Optional

attribute: **spacecraft_clock_stop_count** value: **value** Optional

- End_Class

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- End_Class

- End_Class

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.

role: **Concrete**

- **Tagged_Digital_Object - Occurs 0 to * Times**

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

role: **Abstract**

- **End_Class**
- **End_Class**

- **Data_Area_Movie Occurs 1 Times**

description: The Movie Data Area requires at least one movie digital object.
role: **Concrete**

- **Movie Occurs 1 Times - Base_Class:Array_Base**

description: The Movie class is an extension of array_base and defines a move as a set of two dimensional images in a time series.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: *value*

attribute: **offset** value: *value*

- **End_Class**

attribute: **local_identifier** value: *value*

attribute: **comment** value: *value* Optional

attribute: **axes** value: 3

attribute: **axis_order** value: FIRST_INDEX_FASTEST

attribute: **encoding_type** value: BINARY

- **Array_Axis Occurs 3 Times**

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

role: **Concrete**

attribute: **elements** value: *value*

attribute: **name** value: *value*

attribute: **sequence_number** value: *value*

attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

- **End_Class**

- **Array_Element Occurs 1 Times**

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

role: **Concrete**

attribute: **scaling_factor** value: *value* Optional

attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

attribute: **value_offset** value: *value* Optional

attribute: **data_type** value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Node**

description: A node product describes a node.

role: **Concrete**

- **Identification_Area Occurs 1 Times**

description: The identification area consists of attributes involved in the role of identifying and naming an object.

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Context - Occurs 0 to 1 Times**

description: The context cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association**, **has_instrument**, **has_instrument_host**, **has_investigation**, **has_node**, **has_personnel**, **has_publication**, **has_resource**, **has_target**

- **End_Class**
- **End_Class**

- **Node Occurs 1 Times**

description: **The Node class provides a description of a conceptual object that provides local governance within the federated Planetary Data System.**

role: **Concrete**

attribute: **description** value: **value** Optional

attribute: **node_name** value: **Engineering**, **Geosciences**, **Imaging**, **Navigation_Ancillary_Information_Facility**, **Planetary_Atmospheres**, **Planetary_Plasma_Interactions**, **Planetary_Rings**, **Radio_Science**, **Small_Bodies**

attribute: **institution_name** value: **value**

- **End_Class**

- **End_Class**
-

- **Product_PDS_Affiliate**

description: **A PDS Affiliate product describes a person in the role of an affiliate of the PDS.**

role: **Concrete**

- **Identification_Area Occurs 1 Times**

description: **The identification area consists of attributes involved in the role of identifying and naming an object.**

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: **The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.**

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: **The Name_Resolution class provides both primary and alternate names of an object.**

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: **ALTERNATE**, **PRIMARY**

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Context Occurs 1 Times**

description: **The context cross reference area provides references to associated registered products.**

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: *value* Optional
attribute: **lidvid_reference** value: *value* Optional
attribute: **reference_association_type** value: **has_association**, **has_instrument**, **has_instrument_host**, **has_investigation**, **has_node**, **has_personnel**, **has_publication**, **has_resource**, **has_target**

- **End_Class**

- **End_Class**

- **PDS_Affiliate Occurs 1 Times**

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.

role: **Concrete**

attribute: **description** value: *value* Optional
attribute: **node_name** value: Engineering, Geosciences, HQ, Imaging, National_Space_Science_Data_Center, Navigation_Ancillary_Information_Facility, PDS_Management, Planetary_Atmospheres, Planetary_Plasma_Interactions, Planetary_Rings, Radio_Science, Small_Bodies, unk
attribute: **affiliation_type** value: Affiliate, Data_Provider, Manager, Technical_Staff
attribute: **alternate_telephone_number** value: +cc ddd ddd dddd
attribute: **electronic_mail_address** value: *value* Optional
attribute: **institution_name** value: *value*
attribute: **postal_address_text** value: *value*
attribute: **registration_date** value: *value*
attribute: **sort_name** value: *value*
attribute: **telephone_number** value: +cc ddd ddd dddd

- **End_Class**

- **End_Class**

- **Product_PDS_Guest**

description: A PDS Guest product describes a person in the role of guest user of the PDS.

role: **Concrete**

- **Identification_Area Occurs 1 Times**

description: The identification area consists of attributes involved in the role of identifying and naming an object.

role: **Concrete**

attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional

attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_publication, has_resource, has_target

- **End_Class**

- **End_Class**

- **PDS_Guest Occurs 1 Times**

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.
role: **Concrete**

attribute: **description** value: *value* Optional
attribute: **affiliation_type** value: **Affiliate, Data_Provider, Manager, Technical_Staff**
attribute: **registration_date** value: *value*
attribute: **sort_name** value: *value*

- **End_Class**
 - **End_Class**
-

- **Product_Resource**

description: A resource product describes a web resource.
role: **Concrete**

- **Identification_Area Occurs 1 Times**

description: The identification area consists of attributes involved in the role of identifying and naming an object.
role: **Concrete**
attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: *value* Optional
attribute: **instrument_name** value: *value* Optional
attribute: **instrument_host_name** value: *value* Optional
attribute: **full_name** value: *value* Optional
attribute: **investigation_name** value: *value* Optional
attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: *value*
attribute: **lidvid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional

attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: **The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.**

role: **Concrete**

attribute: **lid_reference** value: *value* Optional

attribute: **lidvid_reference** value: *value* Optional

attribute: **reference_association_type** value: *has_association, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_publication, has_resource, has_target*

- **End_Class**

- **End_Class**

- **Resource Occurs 1 Times**

description: **The Resouce class provides a description of a web resource. This class is a generic class and is used for resources not otherwise defined in the model.**

role: **Concrete**

attribute: **description** value: *value*

attribute: **url** value: *value*

- **End_Class**

- **End_Class**
-

- **Product_Spectrum_3D**

description: **The Product Spectrum 3D class defines a product consisting of at least one 3D spectrum and other associated data objects and metadata..**

role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: **The product identification area consists of attributes involved in the role of identifying and naming a data product.**

role: **Concrete**

attribute: **logical_identifier** value: *value*

attribute: **version_id** value: *value*

attribute: **product_class** value: *value*

attribute: **title** value: *value*

attribute: **alternate_title** value: *value* Optional

attribute: **alternate_id** value: *value* Optional

attribute: **last_modification_date_time** value: *value* Optional

attribute: **product_subclass** value: *value* Optional

- **Subject_Area Occurs 1 Times**

description: **The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.**

role: **Concrete**

attribute: **target_name** value: *value* Optional

attribute: **instrument_name** value: *value* Optional

attribute: **instrument_host_name** value: *value* Optional

attribute: **full_name** value: *value* Optional

attribute: **investigation_name** value: *value* Optional

attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: **The Name_Resolution class provides both primary and alternate names of an object.**

role: **Concrete**

- attribute: **class_name** value: *value*
- attribute: **lidvid_reference** value: *value* Optional
- attribute: **name** value: *value*
- attribute: **primary_name** value: *value*
- attribute: **role** value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.
role: Concrete

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: Concrete

- attribute: **local_identifier** value: *value*
- attribute: **description** value: *value* Optional
- attribute: **doi** value: *value* Optional
- attribute: **reference_text** value: *value*
- attribute: **url** value: *value* Optional

- End_Class

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: Concrete

- attribute: **local_identifier** value: *value* Optional
- attribute: **description** value: *value* Optional
- attribute: **title** value: *value*

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: Concrete

- attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: Concrete

- attribute: **lid_reference** value: *value* Optional
- attribute: **lidvid_reference** value: *value* Optional
- attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host

- End_Class
- End_Class
- End_Class

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: Concrete

- attribute: **lid_reference** value: *value* Optional
- attribute: **lidvid_reference** value: *value* Optional
- attribute: **reference_association_type** value: curated_by_node, has_association, has_browse, has_calibration,

`has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node,
has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice,
has_target, has_thumbnail`

- `End_Class`
- `End_Class`

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.
role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.
role: **Concrete**

- `End_Class`

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.
role: **Concrete**

- `End_Class`

attribute: `comment` value: `value` Optional
attribute: `start_date_time` value: `value`
attribute: `stop_date_time` value: `value`
attribute: `spacecraft_clock_start_count` value: `value` Optional
attribute: `spacecraft_clock_stop_count` value: `value` Optional

- `End_Class`

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**
attribute: `local_identifier` value: `value`
attribute: `comment` value: `value` Optional
attribute: `creation_date_time` value: `value` Optional
attribute: `file_name` value: `value`
attribute: `file_size` value: `value` Optional
attribute: `max_record_bytes` value: `value` Optional
attribute: `md5_checksum` value: `value` Optional
attribute: `records` value: `value` Optional

- `End_Class`

- `End_Class`

- **Data_Area_Spectrum_3D Occurs 1 Times**

description: The Spectrum 3D Data Area requires at least one 3D Spectrum digital object.
role: **Concrete**

- **Spectrum_3D Occurs 1 Times - Base_Class:Array_Base**

description: The Spectrum 3D class is an extension of array_base and defines a three dimensional spectrum.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **axes** value: 3
attribute: **axis_order** value: FIRST_INDEX_FASTEST
attribute: **encoding_type** value: BINARY

- **Array_Axis Occurs 3 Times**

description: The Array Axis class is used as a component of the array class and defines an axis of the array.
role: **Concrete**
attribute: **elements** value: **value**
attribute: **name** value: **value**
attribute: **sequence_number** value: **value**
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

- **End_Class**

- **Array_Element Occurs 1 Times**

description: The Array Element class is used as a component of the array class and defines an element of the array.
role: **Concrete**
attribute: **scaling_factor** value: **value** Optional
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
attribute: **value_offset** value: **value** Optional
attribute: **data_type** value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- **End_Class**
- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.
role: **Concrete**

- **Tagged_Digital_Object - Occurs 0 to * Times**

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
role: **Abstract**

- **End_Class**
- **End_Class**

- **Product_SPICE_Kernel_Binary**

description: The Product SPICE Kernel Text class defines a binary SPICE product.
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data

product.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: **The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.**
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: **The Name_Resolution class provides both primary and alternate names of an object.**
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **ivid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Product Occurs 1 Times**

description: **The product cross reference area provides references to associated registered products.**
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: **The Bibliographic Reference class provides references to documents that are not registered with the PDS.**
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: **The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.**

role: **Concrete**
attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail

- **End_Class**

- **End_Class**

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- **End_Class**

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.

role: **Concrete**

- **End_Class**

attribute: **comment** value: **value** Optional

attribute: **start_date_time** value: **value**

attribute: **stop_date_time** value: **value**

attribute: **spacecraft_clock_start_count** value: **value** Optional

attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_SPICE_Kernel_Binary Occurs 1 Times**

description: The SPICE Kernel Binary Data Area requires at least one SPICE Kernel Binary digital object.

role: **Concrete**

- **SPICE_Kernel_Binary Occurs 1 Times**

description: The SPICE Kernel class describes a SPICE file.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: **BINARY**

attribute: **external_standard_id** value: **SPICE**

attribute: **kernel_type** value: **CK, DBK, DSK, EK, PCK, SPK**

- **End_Class**

- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.

role: **Concrete**

- **Tagged_Digital_Object - Occurs 0 to * Times**

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

role: **Abstract**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_SPICE_Kernel_Text**

description: The Product SPICE Kernel Text class defines a text SPICE product.

role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: *value* Optional
attribute: **instrument_name** value: *value* Optional
attribute: **instrument_host_name** value: *value* Optional
attribute: **full_name** value: *value* Optional
attribute: **investigation_name** value: *value* Optional
attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: *value*
attribute: **lidvid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **description** value: *value* Optional
attribute: **doi** value: *value* Optional
attribute: **reference_text** value: *value*
attribute: **url** value: *value* Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**
attribute: **local_identifier** value: *value* Optional
attribute: **description** value: *value* Optional
attribute: **title** value: *value*

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- **End_Class**

- **End_Class**

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- **End_Class**

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.

role: **Concrete**

- **End_Class**

attribute: **comment** value: **value** Optional

attribute: **start_date_time** value: **value**

attribute: **stop_date_time** value: **value**

attribute: **spacecraft_clock_start_count** value: **value** Optional

attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

- attribute: **comment** value: **value** Optional
- attribute: **creation_date_time** value: **value** Optional
- attribute: **file_name** value: **value**
- attribute: **file_size** value: **value** Optional
- attribute: **max_record_bytes** value: **value** Optional
- attribute: **md5_checksum** value: **value** Optional
- attribute: **records** value: **value** Optional

- **End_Class**
- **End_Class**

- **Data_Area_SPICE_Kernel_Text Occurs 1 Times**

description: The SPICE Kernel Text Data Area requires at least one SPICE Kernel Text digital object.
role: **Concrete**

- **SPICE_Kernel_Text Occurs 1 Times**

description: The SPICE Kernel class describes a SPICE file.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **external_standard_id** value: **value**
attribute: **kernel_type** value: **EK, FK, IK, LSK, MK, PCK, SCLK**

- **End_Class**
- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.
role: **Concrete**

- **Tagged_Digital_Object - Occurs 0 to * Times**

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
role: **Abstract**

- **End_Class**
 - **End_Class**
 - **End_Class**
-

- **Product_Stream_Delimited**

description: The Product Stream Delimited class defines a product consisting of at least one Stream Delimited file (Spreadsheet) and other associated data objects and metadata.
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**

attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **livid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.
role: **Concrete**

attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**
attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- **End_Class**

- **End_Class**

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- **End_Class**

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.

role: **Concrete**

- **End_Class**

attribute: **comment** value: **value** Optional

attribute: **start_date_time** value: **value**

attribute: **stop_date_time** value: **value**

attribute: **spacecraft_clock_start_count** value: **value** Optional

attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.

role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

- attribute: **file_name** value: **value**
- attribute: **file_size** value: **value** Optional
- attribute: **max_record_bytes** value: **value** Optional
- attribute: **md5_checksum** value: **value** Optional
- attribute: **records** value: **value** Optional

- **End_Class**
- **End_Class**

- **Data_Area_Stream_Delimited Occurs 1 Times**

description: The Stream Delimited Data Area requires at least one stream delimited digital object.
role: **Concrete**

- **Stream_Delimited Occurs 1 Times**

description: The Stream Delimited class defines a simple spreadsheet.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**

- attribute: **file_local_identifier** value: **value**
- attribute: **offset** value: **value**

- **End_Class**

- attribute: **local_identifier** value: **value**
- attribute: **comment** value: **value** Optional
- attribute: **encoding_type** value: CHARACTER
- attribute: **external_standard_id** value: CSV
- attribute: **field_delimiter** value: 0x09, 0x2C, 0x3B, 0x7C
- attribute: **fields** value: **value**
- attribute: **maximum_record_length** value: **value**
- attribute: **record_delimiter** value: 0xOA, 0xOD, 0xOD_0xOA
- attribute: **records** value: **value**

- **Stream_Delimited_Record - Occurs 1 to * Times**

description: The Stream Delimited Record class is a component of the stream delimited (spreadsheet) class and defines a record of the spreadsheet.
role: **Concrete**

- **Stream_Delimited_Grouped_Sequence - Occurs 1 to * Times**

description: The Stream Delimited Grouped Sequence class is a component of the grouped stream delimited (spreadsheet) class. It defines a set of fields.
role: **Concrete**

- attribute: **repetitions** value: **value** Optional

- **Stream_Delimited_Field_Sequence - Occurs 1 to * Times**

description: The Stream Delimited Field Sequence class is a component of the grouped stream delimited (spreadsheet) class. It defines a set of fields or a nested set of fields.
role: **Concrete**

- **Stream_Delimited_Field - Occurs 0 to * Times**

description: The Stream Delimited Field class is a component of the stream delimited (spreadsheet) record class and defines a field of the record.
role: **Concrete**

- attribute: **field_name** value: **value**
- attribute: **field_number** value: **value** Optional
- attribute: **field_data_type** value: ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real, ASCII_Short_String_Collapsed,

ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID
attribute: **field_format** value: **value** Optional
attribute: **minimum_scaled_value** value: **value** Optional
attribute: **maximum_scaled_value** value: **value** Optional
attribute: **field_min_logical** value: **value** Optional
attribute: **field_max_logical** value: **value** Optional
attribute: **field_scaling_factor** value: **value** Optional
attribute: **field_value_offset** value: **value** Optional
attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
attribute: **field_description** value: **value** Optional
attribute: **field_bytes** value: **value**

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **maximum** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **mean** value: **value** Optional
attribute: **median** value: **value** Optional
attribute: **minimum** value: **value** Optional
attribute: **sample_bit_mask** value: **value** Optional
attribute: **standard_deviation** value: **value** Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.
role: **Concrete**
attribute: **error_constant** value: **value** Optional
attribute: **invalid_constant** value: **value** Optional
attribute: **missing_constant** value: **value** Optional
attribute: **not_applicable_constant** value: **value** Optional
attribute: **saturated_constant** value: **value** Optional
attribute: **unknown_constant** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.
role: **Concrete**

- **Tagged_Digital_Object - Occurs 0 to * Times**

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
role: **Abstract**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Table_Binary**

description: The Product Table Binary class defines a product consisting of at least one Binary table and other associated data objects and metadata.

role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **livid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional

attribute: **description** value: **value** Optional

attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: **SENSOR, SOURCE**

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- **End_Class**

- **End_Class**

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- **End_Class**

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.

role: **Concrete**

- **End_Class**

attribute: **comment** value: **value** Optional

attribute: **start_date_time** value: **value**

attribute: **stop_date_time** value: **value**

- attribute: **spacecraft_clock_start_count** value: **value** Optional
- attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**

- attribute: **local_identifier** value: **value**
- attribute: **comment** value: **value** Optional
- attribute: **creation_date_time** value: **value** Optional
- attribute: **file_name** value: **value**
- attribute: **file_size** value: **value** Optional
- attribute: **max_record_bytes** value: **value** Optional
- attribute: **md5_checksum** value: **value** Optional
- attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Table_Binary Occurs 1 Times**

description: The Table Binary Data Area requires at least one table binary digital object.
role: **Concrete**

- **Table_Binary Occurs 1 Times - Base_Class:Table_Base**

description: The Table Binary class is an extension of table base and defines a simple binary table.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**

- attribute: **file_local_identifier** value: **value**
- attribute: **offset** value: **value**

- **End_Class**

- attribute: **local_identifier** value: **value**
- attribute: **comment** value: **value** Optional
- attribute: **encoding_type** value: **BINARY**
- attribute: **fields** value: **value**
- attribute: **record_bytes** value: **value**
- attribute: **records** value: **value**

- **Table_Record_Binary - Occurs 1 to * Times**

description: The Table Record Binary class is a component of the table class and defines a record of the table. This extension defines a binary record.
role: **Concrete**

- **Table_Binary_Field - Occurs 1 to * Times**

description: The Table Binary Field class is a component of the table record class and defines a field of the record. This extension defines a binary field.

role: **Concrete**

- attribute: **field_name** value: **value**
- attribute: **field_number** value: **value** Optional
- attribute: **field_data_type** value: Bit, ComplexB16, ComplexB8, IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedMSB2, UnsignedMSB4
- attribute: **field_location** value: **value**
- attribute: **field_length** value: **value**

attribute: **field_format** value: **value** Optional
 attribute: **minimum_scaled_value** value: **value** Optional
 attribute: **maximum_scaled_value** value: **value** Optional
 attribute: **field_min_logical** value: **value** Optional
 attribute: **field_max_logical** value: **value** Optional
 attribute: **field_scaling_factor** value: **value** Optional
 attribute: **field_value_offset** value: **value** Optional
 attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr
 Optional
 attribute: **field_description** value: **value** Optional

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.
 role: **Concrete**
 attribute: **local_identifier** value: **value**
 attribute: **description** value: **value** Optional
 attribute: **maximum** value: **value** Optional
 attribute: **md5_checksum** value: **value** Optional
 attribute: **mean** value: **value** Optional
 attribute: **median** value: **value** Optional
 attribute: **minimum** value: **value** Optional
 attribute: **sample_bit_mask** value: **value** Optional
 attribute: **standard_deviation** value: **value** Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.
 role: **Concrete**
 attribute: **error_constant** value: **value** Optional
 attribute: **invalid_constant** value: **value** Optional
 attribute: **missing_constant** value: **value** Optional
 attribute: **not_applicable_constant** value: **value** Optional
 attribute: **saturated_constant** value: **value** Optional
 attribute: **unknown_constant** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.
 role: **Concrete**

- **Tagged_Digital_Object - Occurs 0 to * Times**

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
 role: **Abstract**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Table_Binary_Grouped**

description: The Product Table Binary Grouped class defines a product consisting of at least one Binary table with groups of repeating fields and other associated data objects and metadata.
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into

components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional

attribute: **description** value: **value** Optional

attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: **SENSOR, SOURCE**

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- **End_Class**

- **End_Class**

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- **End_Class**

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.

role: **Concrete**

- **End_Class**

attribute: **comment** value: **value** Optional

attribute: **start_date_time** value: **value**

attribute: **stop_date_time** value: **value**

attribute: **spacecraft_clock_start_count** value: **value** Optional

attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Table_Binary_Grouped Occurs 1 Times**

description: The Table Binary Grouped Data Area requires at least one table binary grouped digital object.
role: **Concrete**

- **Table_Binary_Grouped Occurs 1 Times - Base_Class:Table_Base**

description: The Table Binary Grouped class is an extension of table base and defines a simple binary table that allows repeating groups of fields.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: **BINARY**

attribute: **fields** value: **value**

attribute: **record_bytes** value: **value**

attribute: **records** value: **value**

- **Table_Record_Binary_Grouped - Occurs 1 to * Times**

description: The Table Record Binary Grouped class is a component of the table class and defines a record of the table. This extension defines a binary record with grouped fields.
role: **Concrete**

- **Table_Binary_Grouped_Sequence - Occurs 1 to * Times**

description: The Table Binary Grouped Sequence class is a component of the grouped table class. It defines a set of fields.

role: **Concrete**

attribute: **repetitions** value: **value** Optional

- **Table_Binary_Field_Sequence - Occurs 1 to * Times**

description: The Table Binary Field Sequence class is a component of the grouped table class. It defines a set of fields or a nested set of fields.

role: **Concrete**

- **Table_Binary_Grouped_Bit_Field - Occurs 0 to * Times**

description: The Table Binary Grouped Bit Field class is a component of the table record class and defines a field of the record. This extension defines a binary grouped bit field.

role: Concrete

attribute: **field_name** value: **value**
attribute: **field_number** value: **value** Optional
attribute: **field_data_type** value: **Bit**
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: **value** Optional
attribute: **minimum_scaled_value** value: **value** Optional
attribute: **maximum_scaled_value** value: **value** Optional
attribute: **field_min_logical** value: **value** Optional
attribute: **field_max_logical** value: **value** Optional
attribute: **field_scaling_factor** value: **value** Optional
attribute: **field_value_offset** value: **value** Optional
attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
attribute: **field_description** value: **value** Optional
attribute: **bit_mask** value: **value** Optional
attribute: **bits** value: **value**
attribute: **start_bit** value: **value**

- **End_Class**

- **Table_Binary_Grouped_Field - Occurs 0 to * Times**

description: The Table Binary Grouped Field class is a component of the table record class and defines a field of the record. This extension defines a binary grouped field.

role: Concrete

attribute: **field_name** value: **value**
attribute: **field_number** value: **value** Optional
attribute: **field_data_type** value: Bit, ComplexB16, ComplexB8, IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedMSB2, UnsignedMSB4
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: **value** Optional
attribute: **minimum_scaled_value** value: **value** Optional
attribute: **maximum_scaled_value** value: **value** Optional
attribute: **field_min_logical** value: **value** Optional
attribute: **field_max_logical** value: **value** Optional
attribute: **field_scaling_factor** value: **value** Optional
attribute: **field_value_offset** value: **value** Optional
attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.
role: Concrete

- **Tagged_Digital_Object - Occurs 0 to * Times**

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
role: Abstract

- End_Class
 - End_Class
 - End_Class
-

- **Product_Table_Character**

description: The Product Table Character class defines a product consisting of at least one character table and other associated data objects and metadata.
role: Concrete

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: Concrete

attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **product_class** value: *value*
attribute: **title** value: *value*
attribute: **alternate_title** value: *value* Optional
attribute: **alternate_id** value: *value* Optional
attribute: **last_modification_date_time** value: *value* Optional
attribute: **product_subclass** value: *value* Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: Concrete

attribute: **target_name** value: *value* Optional
attribute: **instrument_name** value: *value* Optional
attribute: **instrument_host_name** value: *value* Optional
attribute: **full_name** value: *value* Optional
attribute: **investigation_name** value: *value* Optional
attribute: **observing_system_name** value: *value* Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: Concrete

attribute: **class_name** value: *value*
attribute: **lidvid_reference** value: *value* Optional
attribute: **name** value: *value*
attribute: **primary_name** value: *value*
attribute: **role** value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.
role: Concrete

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: Concrete

attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: **SENSOR, SOURCE**

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- **End_Class**

- **End_Class**

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- **End_Class**

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.
role: **Concrete**

- **End_Class**

attribute: **comment** value: **value** Optional
attribute: **start_date_time** value: **value**
attribute: **stop_date_time** value: **value**
attribute: **spacecraft_clock_start_count** value: **value** Optional
attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Table_Character Occurs 1 Times**

description: The Table Character Data Area requires at least one table character digital object.
role: **Concrete**

- **Table_Character Occurs 1 Times - Base_Class:Table_Base**

description: The Table Character class is an extension of table base and defines a simple character table.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **value**
attribute: **record_bytes** value: **value**
attribute: **records** value: **value**

- **Table_Record_Character - Occurs 1 to * Times**

description: The Table Record Character class is a component of the table class and defines a record of the table. This extension defines a character record.
role: **Concrete**

- **Table_Character_Field - Occurs 1 to * Times**

description: The Table Character Field class is a component of the table record class and defines a field of the record. This extension defines a character field.

role: Concrete

attribute: **field_name** value: *value*

attribute: **field_number** value: *value* Optional

attribute: **field_data_type** value: ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real, ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID

attribute: **field_location** value: *value*

attribute: **field_length** value: *value*

attribute: **field_format** value: *value* Optional

attribute: **minimum_scaled_value** value: *value* Optional

attribute: **maximum_scaled_value** value: *value* Optional

attribute: **field_min_logical** value: *value* Optional

attribute: **field_max_logical** value: *value* Optional

attribute: **field_scaling_factor** value: *value* Optional

attribute: **field_value_offset** value: *value* Optional

attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr

Optional

attribute: **field_description** value: *value* Optional

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.

role: Concrete

attribute: **local_identifier** value: *value*

attribute: **description** value: *value* Optional

attribute: **maximum** value: *value* Optional

attribute: **md5_checksum** value: *value* Optional

attribute: **mean** value: *value* Optional

attribute: **median** value: *value* Optional

attribute: **minimum** value: *value* Optional

attribute: **sample_bit_mask** value: *value* Optional

attribute: **standard_deviation** value: *value* Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.

role: Concrete

attribute: **error_constant** value: *value* Optional

attribute: **invalid_constant** value: *value* Optional

attribute: **missing_constant** value: *value* Optional

attribute: **not_applicable_constant** value: *value* Optional

attribute: **saturated_constant** value: *value* Optional

attribute: **unknown_constant** value: *value* Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.

role: Concrete

- **Tagged_Digital_Object - Occurs 0 to * Times**

description: The Tagged Digital Object class is an abstract class for the digital class hierarchy. A tagged object is an information object.
role: Abstract

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Table_Character_Grouped**

description: The Product Table Character Grouped class defines a product consisting of at least one Character table with groups of repeating fields and other associated data objects and metadata.
role: Concrete

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.
role: Concrete

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: Concrete

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: Concrete

attribute: **class_name** value: **value**

attribute: **ivid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Product Occurs 1 Times**

description: The product cross reference area provides references to associated registered products.
role: Concrete

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: Concrete

attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 1 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: **SENSOR, SOURCE**

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Reference_Entry - Occurs 0 to * Times**

description: The Product Reference Entry class provides a product specific reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **curated_by_node, has_association, has_browse, has_calibration, has_document, has_geometry, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_primary_collection, has_primary_product, has_publication, has_resource, has_spice, has_target, has_thumbnail**

- **End_Class**

- **End_Class**

- **Observation_Area Occurs 1 Times**

description: The observation area consists of attributes in the role of providing information about the circumstances under which the data were collected.

role: **Concrete**

- **Mission_Area - Occurs 0 to * Times**

description: The mission area allow the insertion of mission specific metadata.

role: **Concrete**

- **End_Class**

- **Node_Area - Occurs 0 to * Times**

description: The node area allow the insertion of node specific metadata.
role: **Concrete**

- **End_Class**

attribute: **comment** value: **value** Optional
attribute: **start_date_time** value: **value**
attribute: **stop_date_time** value: **value**
attribute: **spacecraft_clock_start_count** value: **value** Optional
attribute: **spacecraft_clock_stop_count** value: **value** Optional

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Table_Character_Grouped Occurs 1 Times**

description: The Table Character Grouped Data Area requires at least one table character grouped digital object.
role: **Concrete**

- **Table_Character_Grouped Occurs 1 Times - Base_Class:Table_Base**

description: The Table Character Grouped class is an extension of table base and defines a simple character table that allows repeating groups of fields.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **value**
attribute: **record_bytes** value: **value**
attribute: **records** value: **value**

- **Table_Record_Character_Grouped - Occurs 1 to * Times**

description: The Table Record Character Grouped class is a component of the table class and defines a record of the table. This extension defines a character record with grouped fields.
role: **Concrete**

- **Table_Character_Grouped_Sequence - Occurs 1 to * Times**

description: The Table Character Grouped Sequence class is a component of the grouped table class. It defines a set of fields.

role: Concrete

attribute: **repetitions** value: **value** Optional

- **Table_Character_Sequence - Occurs 1 to * Times**

description: The Table Character Field Sequence class is a component of the grouped table class. It defines a set of fields or a nested set of fields.

role: Concrete

- **Table_Character_Grouped_Field - Occurs 0 to * Times**

description: The Table Character Grouped Field class is a component of the table record class and defines a field of the record. This extension defines a character grouped field.

role: Concrete

attribute: **field_name** value: **value**

attribute: **field_number** value: **value** Optional

attribute: **field_data_type** value: ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real, ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID

attribute: **field_location** value: **value**

attribute: **field_length** value: **value**

attribute: **field_format** value: **value** Optional

attribute: **minimum_scaled_value** value: **value** Optional

attribute: **maximum_scaled_value** value: **value** Optional

attribute: **field_min_logical** value: **value** Optional

attribute: **field_max_logical** value: **value** Optional

attribute: **field_scaling_factor** value: **value** Optional

attribute: **field_value_offset** value: **value** Optional

attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr

attribute: **field_description** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Data_Area_Alternate - Occurs 0 to * Times**

description: The Data Area Alternate allows the inclusion of any Data Object Description.

role: Concrete

- **Tagged_Digital_Object - Occurs 0 to * Times**

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

role: Abstract

- **End_Class**

- **End_Class**

- **End_Class**

-
- **Product_Target**

description: A target product describes a target.

role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

- attribute: **lidvid_reference** value: **value** Optional
- attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**
- **End_Class**
- **End_Class**

- **Target Occurs 1 Times**

description: **The Target class provides a description of a physical object that is the object of data collection.**
role: **Concrete**
attribute: **description** value: **value** Optional

- **End_Class**
- **End_Class**

- **Product_Text_File**

description: **The Product Text File consists of a single text file with ASCII character encoding.**
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: **The product identification area consists of attributes involved in the role of identifying and naming a data product.**
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: **The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.**
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: **The Name_Resolution class provides both primary and alternate names of an object.**
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: **ALTERNATE, PRIMARY**

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Misc - Occurs 0 to 1 Times**

description: **The miscellaneous cross reference area provides references to associated registered products.**
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: **SENSOR, SOURCE**

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association, has_instrument, has_instrument_host**

- **End_Class**

- **End_Class**

- **End_Class**

- **Reference_Entry - Occurs 0 to * Times**

description: The Reference Entry class provides a reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association**

- **End_Class**

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**
- **End_Class**
- **Data_Area_Text_File - Occurs 0 to * Times**

description: The Text File Data Area allows one stream text data object.
role: **Concrete**

- **Stream_Text Occurs 1 Times**

description: The Stream text class defines a text file.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**
- attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **external_standard_id** value: **value**

- **End_Class**
 - **End_Class**
 - **End_Class**
-

- **Product_Thumbnail**

description: The Product Thumbnail class defines a product consisting of one encoded byte stream digital object.
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**
attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area Occurs 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area_Misc - Occurs 0 to 1 Times**

description: The miscellaneous cross reference area provides references to associated registered products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**
attribute: **local_identifier** value: **value** Optional
attribute: **description** value: **value** Optional
attribute: **title** value: **value**

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.
role: **Concrete**
attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.
role: **Concrete**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host

- **End_Class**
- **End_Class**
- **End_Class**

- **Reference_Entry - Occurs 0 to * Times**

description: The Reference Entry class provides a reference and type information about the reference. The reference is to a product.
role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: **has_association**

- **End_Class**

- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

- **Data_Area_Encoded_Image - Occurs 0 to * Times**

description: The Encoded Image Data Area requires one encoded byte stream data object description called Encoded Image.
role: **Concrete**

- **Encoded_Image Occurs 1 Times**

description: The Encoded Image class, a subclass of Encoded Byte stream is used for ancillary images in standard formats, such as JPEG.

role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **encoding_type** value: **BINARY**

attribute: **external_standard_id** value: **GIF, JPEG, TIFF**

- **End_Class**

- **End_Class**

- **End_Class**

- **Product_Update**

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

- **Identification_Area Occurs 1 Times**

description: The identification area consists of attributes involved in the role of identifying and naming an object.

role: **Concrete**

attribute: **logical_identifier** value: **value**

attribute: **version_id** value: **value**

attribute: **product_class** value: **value**

attribute: **title** value: **value**

attribute: **alternate_title** value: **value** Optional

attribute: **alternate_id** value: **value** Optional

attribute: **last_modification_date_time** value: **value** Optional

attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.

role: **Concrete**

attribute: **target_name** value: **value** Optional

attribute: **instrument_name** value: **value** Optional

attribute: **instrument_host_name** value: **value** Optional

attribute: **full_name** value: **value** Optional

attribute: **investigation_name** value: **value** Optional

attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: **value**

attribute: **lidvid_reference** value: **value** Optional

attribute: **name** value: **value**

attribute: **primary_name** value: **value**

attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**

- **End_Class**

- **End_Class**

- **Cross_Reference_Area_Context Occurs 1 Times**

description: The context cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **description** value: **value** Optional

attribute: **doi** value: **value** Optional

attribute: **reference_text** value: **value**

attribute: **url** value: **value** Optional

- **End_Class**

- **Context_Reference_Entry - Occurs 0 to * Times**

description: The Context Reference Entry class implements associations between context products. For example, an instrument is associated with an instrument_host which in turn is associated with an investigation.

role: **Concrete**

attribute: **lid_reference** value: **value** Optional

attribute: **lidvid_reference** value: **value** Optional

attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host, has_investigation, has_node, has_personnel, has_publication, has_resource, has_target

- End_Class
- End_Class

- Update Occurs 1 Times

description: The Update class consists of update information.
 role: Concrete
 attribute: local_identifier value: value
 attribute: description value: value Optional

- Update_Entry - Occurs 0 to * Times

description: The Update Entry class provides the date and description of an update.
 role: Concrete
 attribute: description value: value
 attribute: actor_name value: value
 attribute: date_time value: value

- Reference_Entry_Generic - Occurs 0 to 1 Times

description: The Reference Entry Generic class provides a reference and type information about the reference. The reference is to a product.
 role: Abstract
 attribute: lid_reference value: value Optional
 attribute: lidvid_reference value: value Optional
 attribute: reference_association_type value: value

- End_Class
 - End_Class
 - End_Class
 - End_Class
-

- Product_XML_Schema

description: The Product XML Schema consists of a single text file in XML Schema encoding.
 role: Concrete

- Identification_Area_Product Occurs 1 Times

description: The product identification area consists of attributes involved in the role of identifying and naming a data product.
 role: Concrete
 attribute: logical_identifier value: value
 attribute: version_id value: value
 attribute: product_class value: value
 attribute: title value: value
 attribute: alternate_title value: value Optional
 attribute: alternate_id value: value Optional
 attribute: last_modification_date_time value: value Optional
 attribute: product_subclass value: value Optional

- Subject_Area Occurs 1 Times

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
 role: Concrete
 attribute: target_name value: value Optional
 attribute: instrument_name value: value Optional
 attribute: instrument_host_name value: value Optional
 attribute: full_name value: value Optional
 attribute: investigation_name value: value Optional
 attribute: observing_system_name value: value Optional

- Name_Resolution - Occurs 0 to * Times

description: The Name_Resolution class provides both primary and alternate names of an object.

role: **Concrete**

attribute: **class_name** value: *value*

attribute: **lidvid_reference** value: *value* Optional

attribute: **name** value: *value*

attribute: **primary_name** value: *value*

attribute: **role** value: ALTERNATE, PRIMARY

- End_Class
- End_Class
- End_Class

- **Cross_Reference_Area_Misc - Occurs 0 to 1 Times**

description: The miscellaneous cross reference area provides references to associated registered products.

role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.

role: **Concrete**

attribute: **local_identifier** value: *value*

attribute: **description** value: *value* Optional

attribute: **doi** value: *value* Optional

attribute: **reference_text** value: *value*

attribute: **url** value: *value* Optional

- End_Class

- **Observing_System - Occurs 0 to * Times**

description: The Observing_System class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. The subsystems are grouped into components, for example a sensor or a source.

role: **Concrete**

attribute: **local_identifier** value: *value* Optional

attribute: **description** value: *value* Optional

attribute: **title** value: *value*

- **Observing_System_Component - Occurs 1 to 2 Times**

description: The Observing System Component class references one or more subsystems that function as a sensor. A subsystem can be an instrument_host, instrument, or any other similar product.

role: **Concrete**

attribute: **observing_system_component_type** value: SENSOR, SOURCE

- **Observing_System_Reference_Entry - Occurs 1 to * Times**

description: The Observing System Reference Entry class provides a product specific reference and type information about the reference. The references are to components of the observing system.

role: **Concrete**

attribute: **lid_reference** value: *value* Optional

attribute: **lidvid_reference** value: *value* Optional

attribute: **reference_association_type** value: has_association, has_instrument, has_instrument_host

- End_Class
- End_Class
- End_Class

- **Reference_Entry - Occurs 0 to * Times**

description: The Reference Entry class provides a reference and type information about the reference. The reference is to a product.

role: **Concrete**

attribute: **lid_reference** value: *value* Optional

attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **has_association**

- **End_Class**
- **End_Class**
- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **creation_date_time** value: **value** Optional
attribute: **file_name** value: **value**
attribute: **file_size** value: **value** Optional
attribute: **max_record_bytes** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **records** value: **value** Optional

- **End_Class**
- **End_Class**
- **Data_Area_XML_Schema - Occurs 0 to * Times**

description: The XML Schema Data Area requires one stream text data object description named XML Schema.
role: **Concrete**

- **XML_Schema Occurs 1 Times**

description: The XML Schema class defines a text stream file containing XML Schema.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**
 - **End_Class**
 - **End_Class**
-

- **Product_Zipped**

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.
role: **Concrete**

- **Identification_Area Occurs 1 Times**

description: The identification area consists of attributes involved in the role of identifying and naming an object.
role: **Concrete**
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **product_class** value: **value**

attribute: **title** value: **value**
attribute: **alternate_title** value: **value** Optional
attribute: **alternate_id** value: **value** Optional
attribute: **last_modification_date_time** value: **value** Optional
attribute: **product_subclass** value: **value** Optional

- **Subject_Area - Occurs 0 to 1 Times**

description: The Subject Area provides one or more topics associated with the identifiable using keywords, key phrases, or classification codes.
role: **Concrete**
attribute: **target_name** value: **value** Optional
attribute: **instrument_name** value: **value** Optional
attribute: **instrument_host_name** value: **value** Optional
attribute: **full_name** value: **value** Optional
attribute: **investigation_name** value: **value** Optional
attribute: **observing_system_name** value: **value** Optional

- **Name_Resolution - Occurs 0 to * Times**

description: The Name_Resolution class provides both primary and alternate names of an object.
role: **Concrete**
attribute: **class_name** value: **value**
attribute: **lidvid_reference** value: **value** Optional
attribute: **name** value: **value**
attribute: **primary_name** value: **value**
attribute: **role** value: ALTERNATE, PRIMARY

- **End_Class**
- **End_Class**
- **End_Class**

- **Cross_Reference_Area - Occurs 0 to 1 Times**

description: The cross reference area provides references for associated products.
role: **Concrete**

- **Bibliographic_Reference - Occurs 0 to * Times**

description: The Bibliographic Reference class provides references to documents that are not registered with the PDS.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **doi** value: **value** Optional
attribute: **reference_text** value: **value**
attribute: **url** value: **value** Optional

- **End_Class**

- **Reference_Entry_Generic - Occurs 0 to * Times**

description: The Reference Entry Generic class provides a reference and type information about the reference.
The reference is to a product.
role: **Abstract**
attribute: **lid_reference** value: **value** Optional
attribute: **lidvid_reference** value: **value** Optional
attribute: **reference_association_type** value: **value**

- **End_Class**
- **End_Class**

- **File_Area Occurs 1 Times**

description: The file area allows the inclusion into a product label of descriptive information about associated files.
role: **Concrete**

- **File - Occurs 1 to * Times**

description: The File class consists of attributes involved in the role of describing a file in a data store.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **creation_date_time** value: **value** Optional

attribute: **file_name** value: **value**

attribute: **file_size** value: **value** Optional

attribute: **max_record_bytes** value: **value** Optional

attribute: **md5_checksum** value: **value** Optional

attribute: **records** value: **value** Optional

- **End_Class**

- **End_Class**

attribute: **container_type** value: **GZIP, LZIP, TAR, ZIP**

- **Zipped_Member_Entry - Occurs 0 to * Times**

description: The Zipped Member Entry class provides a member reference to a product.

role: **Concrete**

attribute: **file_specification_name** value: **value**

attribute: **lidvid_reference** value: **value**

attribute: **md5_checksum** value: **value**

attribute: **reference_association_type** value: **contained_product, manifest_product**

- **End_Class**

- **End_Class**

- **Property_Map**

description: The Property Map class defines a table consisting of a set of data elements and their values. The data elements in this table are considered to be locally defined and not subject to standards except for nomenclature rules.

role: **Concrete**

attribute: **name_space_id** value: **value** Optional

- **Property_Map_Entry - Occurs 1 to * Times**

description: The property map entry consists of one property map.

role: **Concrete**

attribute: **property_name** value: **value**

attribute: **property_value** value: **value**

- **End_Class**

- **End_Class**

- **Rings_Prod_Info**

description: This class identifies the set of elements pertinent to Rings products.

role: **Concrete**

attribute: **node_name** value: **Planetary_Rings**

attribute: **incidence_angle** value: **value**

attribute: **maximum_ring_radius** value: **value**

attribute: **minimum_ring_radius** value: **value**

attribute: **node_id** value: **RINGS**

attribute: **occultation_type** value: **STELLAR**

attribute: **planetary_occultation_flag** value: **n, y**

attribute: **radial_resolution** value: **value**

attribute: **ring_event_start_time** value: **value**

attribute: **ring_event_stop_time** value: **value**

attribute: **ring_occultation_direction** value: **both, egress, ingress, multiple**

attribute: **star_name** value: **value**

- **End_Class**

- **Spectrum_2D - Base_Class:Array_Base**

description: The Spectrum 2D class is an extension of array_base and defines a two dimensional spectrum.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **axes** value: **2**

attribute: **axis_order** value: FIRST_INDEX_FASTEST

attribute: **encoding_type** value: BINARY

- **Array_Axis Occurs 2 Times**

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

role: **Concrete**

attribute: **elements** value: **value**

attribute: **name** value: **value**

attribute: **sequence_number** value: **value**

attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr

- **End_Class**

- **Array_Element Occurs 1 Times**

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

role: **Concrete**

attribute: **scaling_factor** value: **value** Optional

attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr

attribute: **value_offset** value: **value** Optional

attribute: **data_type** value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- **End_Class**

- **End_Class**

- **Spectrum_3D - Base_Class:Array_Base**

description: The Spectrum 3D class is an extension of array_base and defines a three dimensional spectrum.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.

role: **Concrete**

attribute: **file_local_identifier** value: **value**

attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **axes** value: **3**

attribute: **axis_order** value: FIRST_INDEX_FASTEST
attribute: **encoding_type** value: BINARY

- **Array_Axis Occurs 3 Times**

description: The Array Axis class is used as a component of the array class and defines an axis of the array.
role: Concrete
attribute: **elements** value: *value*
attribute: **name** value: *value*
attribute: **sequence_number** value: *value*
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

- **End_Class**

- **Array_Element Occurs 1 Times**

description: The Array Element class is used as a component of the array class and defines an element of the array.
role: Concrete
attribute: **scaling_factor** value: *value* Optional
attribute: **unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional
attribute: **value_offset** value: *value* Optional
attribute: **data_type** value: IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte

- **End_Class**

- **End_Class**

- **SPICE_Kernel_Binary**

description: The SPICE Kernel class describes a SPICE file.
role: Concrete

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: Concrete
attribute: **file_local_identifier** value: *value*
attribute: **offset** value: *value*

- **End_Class**

attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* Optional
attribute: **encoding_type** value: BINARY
attribute: **external_standard_id** value: SPICE
attribute: **kernel_type** value: CK, DBK, DSK, EK, PCK, SPK

- **End_Class**

- **SPICE_Kernel_Text**

description: The SPICE Kernel class describes a SPICE file.
role: Concrete

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: Concrete
attribute: **file_local_identifier** value: *value*
attribute: **offset** value: *value*

- **End_Class**
attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **external_standard_id** value: **value**
attribute: **kernel_type** value: **EK, FK, IK, LSK, MK, PCK, SCLK**
 - **End_Class**
-

- **Stream_Delimited**

description: The Stream Delimited class defines a simple spreadsheet.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **external_standard_id** value: **CSV**
attribute: **field_delimiter** value: **0x09, 0x2C, 0x3B, 0x7C**
attribute: **fields** value: **value**
attribute: **maximum_record_length** value: **value**
attribute: **record_delimiter** value: **0xOA, 0xOD, 0xOD_0xOA**
attribute: **records** value: **value**

- **Stream_Delimited_Record - Occurs 1 to * Times**

description: The Stream Delimited Record class is a component of the stream delimited (spreadsheet) class and defines a record of the spreadsheet.
role: **Concrete**

- **Stream_Delimited_Grouped_Sequence - Occurs 1 to * Times**

description: The Stream Delimited Grouped Sequence class is a component of the grouped stream delimited (spreadsheet) class. It defines a set of fields.
role: **Concrete**
attribute: **repetitions** value: **value** Optional

- **Stream_Delimited_Field_Sequence - Occurs 1 to * Times**

description: The Stream Delimited Field Sequence class is a component of the grouped stream delimited (spreadsheet) class. It defines a set of fields or a nested set of fields.
role: **Concrete**

- **Stream_Delimited_Field - Occurs 0 to * Times**

description: The Stream Delimited Field class is a component of the stream delimited (spreadsheet) record class and defines a field of the record.
role: **Concrete**
attribute: **field_name** value: **value**
attribute: **field_number** value: **value** Optional
attribute: **field_data_type** value: **ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real, ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID**
attribute: **field_format** value: **value** Optional
attribute: **minimum_scaled_value** value: **value** Optional
attribute: **maximum_scaled_value** value: **value** Optional

attribute: **field_min_logical** value: **value** Optional
 attribute: **field_max_logical** value: **value** Optional
 attribute: **field_scaling_factor** value: **value** Optional
 attribute: **field_value_offset** value: **value** Optional
 attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr
 attribute: **field_description** value: **value** Optional
 attribute: **field_bytes** value: **value**

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.
 role: **Concrete**

attribute: **local_identifier** value: **value**
 attribute: **description** value: **value** Optional
 attribute: **maximum** value: **value** Optional
 attribute: **md5_checksum** value: **value** Optional
 attribute: **mean** value: **value** Optional
 attribute: **median** value: **value** Optional
 attribute: **minimum** value: **value** Optional
 attribute: **sample_bit_mask** value: **value** Optional
 attribute: **standard_deviation** value: **value** Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.
 role: **Concrete**

attribute: **error_constant** value: **value** Optional
 attribute: **invalid_constant** value: **value** Optional
 attribute: **missing_constant** value: **value** Optional
 attribute: **not_applicable_constant** value: **value** Optional
 attribute: **saturated_constant** value: **value** Optional
 attribute: **unknown_constant** value: **value** Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Table_Binary - Base_Class:Table_Base**

description: The Table Binary class is an extension of table base and defines a simple binary table.
 role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
 role: **Concrete**

attribute: **file_local_identifier** value: **value**
 attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
 attribute: **comment** value: **value** Optional
 attribute: **encoding_type** value: **BINARY**
 attribute: **fields** value: **value**

attribute: **record_bytes** value: *value*
attribute: **records** value: *value*

- **Table_Record_Binary - Occurs 1 to * Times**

description: The Table Record Binary class is a component of the table class and defines a record of the table. This extension defines a binary record.
role: **Concrete**

- **Table_Binary_Field - Occurs 1 to * Times**

description: The Table Binary Field class is a component of the table record class and defines a field of the record. This extension defines a binary field.

role: **Concrete**

attribute: **field_name** value: *value*

attribute: **field_number** value: *value* Optional

attribute: **field_data_type** value: Bit, ComplexB16, ComplexB8, IEEE754Double, IEEE754Single, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedMSB2, UnsignedMSB4

attribute: **field_location** value: *value*

attribute: **field_length** value: *value*

attribute: **field_format** value: *value* Optional

attribute: **minimum_scaled_value** value: *value* Optional

attribute: **maximum_scaled_value** value: *value* Optional

attribute: **field_min_logical** value: *value* Optional

attribute: **field_max_logical** value: *value* Optional

attribute: **field_scaling_factor** value: *value* Optional

attribute: **field_value_offset** value: *value* Optional

attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m-2*sr-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr Optional

attribute: **field_description** value: *value* Optional

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.
role: **Concrete**

attribute: **local_identifier** value: *value*

attribute: **description** value: *value* Optional

attribute: **maximum** value: *value* Optional

attribute: **md5_checksum** value: *value* Optional

attribute: **mean** value: *value* Optional

attribute: **median** value: *value* Optional

attribute: **minimum** value: *value* Optional

attribute: **sample_bit_mask** value: *value* Optional

attribute: **standard_deviation** value: *value* Optional

- **End_Class**

- **Special_Constants - Occurs 0 to 1 Times**

description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.

role: **Concrete**

attribute: **error_constant** value: *value* Optional

attribute: **invalid_constant** value: *value* Optional

attribute: **missing_constant** value: *value* Optional

attribute: **not_applicable_constant** value: *value* Optional

attribute: **saturated_constant** value: *value* Optional

attribute: **unknown_constant** value: *value* Optional

- **End_Class**

- **End_Class**

- **End_Class**

- **End_Class**

- **Table_Character - Base_Class:Table_Base**

description: The Table Character class is an extension of table base and defines a simple character table.
role: **Concrete**

- **Data_Location Occurs 1 Times**

description: The Data Location class provides the location of a digital object.
role: **Concrete**
attribute: **file_local_identifier** value: **value**
attribute: **offset** value: **value**

- **End_Class**

attribute: **local_identifier** value: **value**
attribute: **comment** value: **value** Optional
attribute: **encoding_type** value: CHARACTER
attribute: **fields** value: **value**
attribute: **record_bytes** value: **value**
attribute: **records** value: **value**

- **Table_Record_Character - Occurs 1 to * Times**

description: The Table Record Character class is a component of the table class and defines a record of the table. This extension defines a character record.
role: **Concrete**

- **Table_Character_Field - Occurs 1 to * Times**

description: The Table Character Field class is a component of the table record class and defines a field of the record. This extension defines a character field.
role: **Concrete**
attribute: **field_name** value: **value**
attribute: **field_number** value: **value** Optional
attribute: **field_data_type** value: ASCII_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time.UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_Integer, ASCII_Integer_Binary, ASCII_Integer_Hex, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Real, ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID
attribute: **field_location** value: **value**
attribute: **field_length** value: **value**
attribute: **field_format** value: **value** Optional
attribute: **minimum_scaled_value** value: **value** Optional
attribute: **maximum_scaled_value** value: **value** Optional
attribute: **field_min_logical** value: **value** Optional
attribute: **field_max_logical** value: **value** Optional
attribute: **field_scaling_factor** value: **value** Optional
attribute: **field_value_offset** value: **value** Optional
attribute: **field_unit** value: AU, Angstrom, DN, K, L, Pa, V, W*m^-2*sr^-1, airmass, arcmin, arcsec, bar, byte, cm, cm/s, counts/bin, day, deg, deg/day, deg/s, degC, electron/DN, g, hPa, hr, hr, hz, kg, kilobits/s, km, km/pixel, km/s, m, m2, m3, m/pixel, m/s, mV, mbar, micrometer, microseconds, min, mm, mm/pixel, mol, mrad, ms, nm, none, pixel, pixel/deg, rad, rad/s, s, sr, yr
attribute: **field_description** value: **value** Optional

- **Object_Statistics - Occurs 0 to 1 Times**

description: The Object Statistics class provides a set of values that provide metrics about the object.
role: **Concrete**
attribute: **local_identifier** value: **value**
attribute: **description** value: **value** Optional
attribute: **maximum** value: **value** Optional
attribute: **md5_checksum** value: **value** Optional
attribute: **mean** value: **value** Optional
attribute: **median** value: **value** Optional

- attribute: **minimum** value: **value** Optional
 - attribute: **sample_bit_mask** value: **value** Optional
 - attribute: **standard_deviation** value: **value** Optional
 - **End_Class**
 - **Special_Constants - Occurs 0 to 1 Times**
 - description: The Special Constants class provides a set of values used to indicate special cases that occur in the data.
 - role: **Concrete**
 - attribute: **error_constant** value: **value** Optional
 - attribute: **invalid_constant** value: **value** Optional
 - attribute: **missing_constant** value: **value** Optional
 - attribute: **not_applicable_constant** value: **value** Optional
 - attribute: **saturated_constant** value: **value** Optional
 - attribute: **unknown_constant** value: **value** Optional
 - **End_Class**
 - **End_Class**
 - **End_Class**
-

- **Telemetry_Parameters**

description: Descriptive elements related to the flow of data from a spacecraft to the ground for reconstruction into a data product.

role: **Concrete**

attribute: **local_identifier** value: **value**

attribute: **comment** value: **value** Optional

attribute: **application_process_id** value: **value** Optional

attribute: **application_process_name** value: APXS, DESCENT IMAGER, HAZCAM LEFT FRONT, HAZCAM LEFT REAR, HAZCAM RIGHT FRONT, HAZCAM RIGHT REAR, MB, MI, MINITES, NAVCAM LEFT, NAVCAM RIGHT, PANCAM LEFT, PANCAM RIGHT, RAT Optional

attribute: **application_process_subtype_id** value: **value** Optional

attribute: **earth_received_start_time** value: **value** Optional

attribute: **earth_received_stop_time** value: **value** Optional

attribute: **expected_packets** value: **value** Optional

attribute: **packet_map_mask** value: **value** Optional

attribute: **received_packets** value: **value** Optional

attribute: **spice_file_name** value: **value** Optional

attribute: **telemetry_provider_id** value: ssw_mer_dp, ttacs Optional

attribute: **telemetry_source_name** value: **value** Optional

attribute: **telemetry_source_type** value: data_product, sfdu Optional

- **End_Class**
-

PDS4 Data Type Definitions Mon Dec 13 20:27:43 PST 2010

Generated from the PDS4 Information Model Version 0.2.0.0.d

- **Data Type:ASCII_AnyURI**

description: The ASCII AnyURI class indicates a URI or its subclasses URN and URL.

character_constraint: **ASCII**

enumerated_flag: **F**

maximum_characters: **255**

minimum_characters: **1**

xml_schema_base_type: **xsd:anyURI**

character_encoding: **UTF-8**

- **Data Type:ASCII_Boolean_TF**

description: The ASCII_Boolean_TF class indicates a boolean with a permissible value of either T or F.
character_constraint: **ASCII**
enumerated_flag: **T**
maximum_characters: **1**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_DOI**

description: The ASCII DOI class indicates a digital object identifier (DOI).
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **nn.nnnn/nnn**
maximum_characters: **255**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_Date_DOY**

description: The ASCII_Date_DOY class indicates a date in DOY format constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **yyyy-doy**
maximum_characters: **8**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_Date_Time**

description: The ASCII_Date_Time class indicates a date in either YMD or DOY format and time constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **yyyy-mm-ddThh:mm:ss.sss/yyyy-doyThh:mm:ss.sss**
maximum_characters: **30**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_Date_Time_DOY**

description: The ASCII_Date_Time_DOY class indicates a date in DOY format and time constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **yyyy-doyThh:mm:ss.sss**
maximum_characters: **30**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_Date_Time_UTC**

description: The ASCII_Date_Time_UTC class indicates a date and time in UTC format constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **yyyy-mm-ddThh:mm:ss.sssZ**
maximum_characters: **30**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_Date_Time_YMD**

description: The ASCII Date Time YMD class indicates a date in YMD format and time constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **yyyy-mm-ddThh:mm:ss.sss**
maximum_characters: **30**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_Date_YMD**

description: The ASCII Date YMD class indicates a date in YMD format constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **yyyy-mm-dd**
maximum_characters: **10**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_Directory_Path_Name**

description: The ASCII Directory Path Name class indicates a system directory path constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **dir1/dir2/**
maximum_characters: **255**
minimum_characters: **1**
xml_schema_base_type: **xsd:token**
character_encoding: **UTF-8**

- **Data Type:ASCII_File_Name**

description: The ASCII File Name class indicates a system file name constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **file_name.file_extension**
maximum_characters: **255**
minimum_characters: **1**
xml_schema_base_type: **xsd:token**
character_encoding: **UTF-8**

- **Data Type:ASCII_File_Specification_Name**

description: The ASCII File Specification Name class indicates a system file including directory path, file name, and file extension constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **dir1/dir2/file_name.file_extension**
maximum_characters: **255**
minimum_characters: **1**
xml_schema_base_type: **xsd:token**
character_encoding: **UTF-8**

- **Data Type:ASCII_Identifier**

description: The ASCII Identifier class indicates a identifier constrained to the ASCII encoding.
character_constraint: **ASCII**
enumerated_flag: **F**
maximum_characters: **100**

minimum_characters: 1
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- **Data Type:ASCII_Integer**

description: The ASCII_Integer class indicates an integer constrained to the ASCII encoding.
enumerated_flag: F
maximum_value: 2147483647
minimum_value: -2147483648
xml_schema_base_type: xsd:integer
character_encoding: UTF-8

- **Data Type:ASCII_Integer_Binary**

description: The ASCII_Integer_Binary class indicates a binary integer constrained to the ASCII encoding.
character_constraint: ASCII
enumerated_flag: F
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- **Data Type:ASCII_Integer_Hex**

description: The ASCII_Integer_Hex class indicates a hexadecimal integer constrained to the ASCII encoding.
character_constraint: ASCII
enumerated_flag: F
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- **Data Type:ASCII_LID**

description: The ASCII_LID class indicates a logical identifier constrained to the ASCII encoding.
character_constraint: ASCII
enumerated_flag: F
formation_rule: * URN:NASA:PDS:xxxx *
maximum_characters: 255
minimum_characters: 1
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- **Data Type:ASCII_LIDVID**

description: The ASCII_LIDVID class indicates a logical identifier and version identifier constrained to the ASCII encoding.
character_constraint: ASCII
enumerated_flag: F
formation_rule: * URN:NASA:PDS:xxxx::M.n*
maximum_characters: 255
minimum_characters: 1
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- **Data Type:ASCII_MD5_Checksum**

description: The ASCII MD5 Checksum class indicates a checksum computed by the Message-Digest algorithm 5 (MD5).
character_constraint: ASCII
enumerated_flag: F
formation_rule: 0123456789abcdef
maximum_characters: 32
minimum_characters: 1
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- **Data Type:ASCII_NonNegative_Integer**

description: The ASCII_NonNegative_Integer class indicates a non-negative integer constrained to the ASCII encoding.
character_constraint: ASCII
enumerated_flag: F
maximum_value: 2147483647
minimum_value: 0
xml_schema_base_type: xsd:integer
character_encoding: UTF-8

- Data Type:ASCII_Real

description: The ASCII_Real class indicates a real constrained to the ASCII encoding.
enumerated_flag: F
maximum_value: INF
minimum_value: -INF
xml_schema_base_type: xsd:float
character_encoding: UTF-8

- Data Type:ASCII_Short_String_Collapsed

description: The ASCII_Short_String_Collapsed class indicates a limited length, whitespace-collapsed string constrained to the ASCII character encoding.
character_constraint: ASCII
enumerated_flag: F
maximum_characters: 255
minimum_characters: 1
xml_schema_base_type: xsd:token
character_encoding: UTF-8

- Data Type:ASCII_Short_String_Preserved

description: The ASCII_Short_String_Preserved class indicates a limited length, whitespace-preserved string constrained to the ASCII character encoding.
character_constraint: ASCII
enumerated_flag: F
maximum_characters: 255
minimum_characters: 1
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- Data Type:ASCII_Text_Preserved

description: The ASCII_Text_Preserved class indicates an unlimited length, whitespace-preserved text string constrained to the ASCII character encoding.
character_constraint: ASCII
enumerated_flag: F
maximum_characters: 2147483647
minimum_characters: 1
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- Data Type:ASCII_Time

description: The ASCII_Time class indicates a time value constrained to the ASCII encoding.
character_constraint: ASCII
enumerated_flag: F
formation_rule: *hh:mm:ss.sss *
maximum_characters: 20
minimum_characters: 1
xml_schema_base_type: xsd:string
character_encoding: UTF-8

- Data Type:ASCII_VID

description: **The ASCII_VID class indicates a version identifier constrained to the ASCII encoding.**
character_constraint: **ASCII**
enumerated_flag: **F**
formation_rule: **M.m**
maximum_characters: **100**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:Bit**

description: **A single binary digit.**
enumerated_flag: **TRUE**

- **Data Type:ComplexB16**

description: **Complex number consisting of two 8 byte decimal reals.**
enumerated_flag: **FALSE**

- **Data Type:ComplexB8**

description: **Complex number consisting of two 4 byte decimal reals.**
enumerated_flag: **FALSE**

- **Data Type:IEEE754Double**

description: **IEEE 754 double precision floating point**
enumerated_flag: **FALSE**

- **Data Type:IEEE754Single**

description: **IEEE 754 single precision floating point**
enumerated_flag: **FALSE**

- **Data Type:SignedLSB2**

description: **Signed 2's-complement LSB 2-byte integers**
enumerated_flag: **FALSE**

- **Data Type:SignedLSB4**

description: **Signed 2's-complement LSB 4-byte integers**
enumerated_flag: **FALSE**

- **Data Type:SignedLSB8**

description: **Signed 2's-complement LSB 8-byte integers**
enumerated_flag: **FALSE**

- **Data Type:SignedMSB2**

description: **Signed 2's-complement MSB 2-byte integers**
enumerated_flag: **FALSE**

- **Data Type:SignedMSB4**

description: **Signed 2's-complement MSB 4-byte integers**
enumerated_flag: **FALSE**

- **Data Type:SignedMSB8**

description: **Signed 2's-complement MSB 8-byte integers**
enumerated_flag: **FALSE**

- **Data Type:UTF8_Short_String_Collapsed**

description: **The UTF8_Short_String_Collapsed class indicates a limited length, whitespace-collapsed string constrained to the UTF-8 character encoding.**
enumerated_flag: **F**
maximum_characters: **255**
minimum_characters: **1**
xml_schema_base_type: **xsd:token**
character_encoding: **UTF-8**

- **Data Type:UTF8_Short_String_Preserved**

description: **The UTF8_Short_String_Preserved class indicates a limited length, whitespace-preserved string constrained to the UTF-8 character encoding.**
enumerated_flag: **F**
maximum_characters: **255**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:UTF8_Text_Preserved**

description: **The UTF8_Text_Preserved class indicates an unlimited length, whitespace-preserved text string constrained to the UTF-8 character encoding.**
enumerated_flag: **F**
maximum_characters: **2147483647**
minimum_characters: **1**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:UnsignedByte**

description: **Unsigned 8-bit MSb bytes.**
enumerated_flag: **FALSE**

- **Data Type:UnsignedLSB2**

description: **Unsigned 2's-complement LSB 2-byte integers**
enumerated_flag: **FALSE**

- **Data Type:UnsignedLSB4**

description: **Unsigned 2's-complement LSB 4-byte integers**
enumerated_flag: **FALSE**

- **Data Type:UnsignedMSB2**

description: **Unsigned 2's-complement MSB 2-byte integers**
enumerated_flag: **FALSE**

- **Data Type:UnsignedMSB4**

description: **Unsigned 2's-complement MSB 4-byte integers**
enumerated_flag: **FALSE**

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