PDS4 Data Dictionary - Abridged - V.0.3.0.0.e

PDS4 Data Design Working Group

Version 0.3.0.0.e - Mon Apr 04 17:36:21 PDT 2011

Generated from the PDS4 Information Model Version 0.3.0.0.e

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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 - Abridged - has been abstracted from the unabridged version with the needs of data providers and data end users in mind. It contains full definitions but not all the fine detail or repetition necessary to support the underlying Information Model.

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 *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 *unique identifier* is a special type of identifier used to provide a reference number which is unique in a context.
- *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.

7. **PDS4 Attribute Definitions - Mon Apr 04 17:36:21 PDT 2011**

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- **Steward:pds**

- **acknowledgement_text**

   steward: **pds**
   name space id: **pds:**
   version: **0.3.0.0.e**

   - 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: **0.3.0.0.e**

   - 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**

- **affiliation_type**

steward: **pds**
name space id: **pds:**
version: **0.3.0.0.e**

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

- **alternate_id**

steward: **pds**
name space id: **pds:**
version: **0.3.0.0.e**

- 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: **0.3.0.0.e**

- 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**
- pattern: **(+{1}[0-9]{2})?([0-9]{3} [0-9]{3} [0-9]{4}))**

- **alternate_title**

steward: **pds**
name space id: **pds:**
version: **0.3.0.0.e**

- 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**

- **author_list**

steward: **pds**
name space id: **pds:**
version: **0.3.0.0.e**

- 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

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

- **bit_mask**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - description: **The bit mask attribute provides a bit mask**
  - data_type: **ASCII_Numeric_Base2**

- **bytes**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.e**

- 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: **0.3.0.e**

- 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: **0.3.0.e**

- 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: **0.3.0.e**

- 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**

- **conceptual_domain**

steward: **pds**
name space id: **pds:**
version: **0.3.0.e**

- description: **The conceptual_domain element indicates the domain to which the value domain is assigned.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **contains_primary_member**

steward: **pds**
name space id: **pds:**
version: **0.3.0.e**

- description: **The contains_primary_member attribute indicates whether a collection contains products that are primary members of the collection.**
- data_type: **ASCII_Boolean_TF**

- **copyright**

steward: **pds**

name space id: **pds:**
version: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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_name**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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_type**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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_Boolean_TF
    ASCII_Date_YMD
    ASCII_Integer
    ASCII_Real
    ASCII_AnyURI
    ASCII_Date_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_Numeric_Base2
ASCII_Numeric_Base16
ASCII_NonNegative_Integer
ASCII_File_Specification_Name

- **date_time**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - description: **The defaut 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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**

- **document_title**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - description: **The field data type indicates the machine representation in which a field value is digitally stored.**
  - data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - 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_Numeric_Base2
    ASCII_Numeric_Base16
    ASCII_NonNegative_Integer
    ASCII_File_Specification_Name

- **field_delimiter**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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
    m**2
    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
m**3

- **field_value_offset**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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_name**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

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

- **full_name**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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**

- **institution_name**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

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

- maximum_characters: **255**
- permissible values
  T
  F

- **kernel_type**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - description: **The kernel type attribute identifies the type of SPICE kernel.**
  - data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **18**
  - permissible values
    LSK
    SCLK
    PCK
    EK
    IK
    FK
    MK

- **language**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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**

- **local_mean_solar_time**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - description: **The desire to work with solar days, hours, minutes, and seconds of uniform length led to the concept of the fictitious mean Sun or FMS. The FMS is defined as a point that moves on the celestial equator of a planetary body at a constant rate that represents the average mean motion of the Sun over a planetary year. Local mean solar time, or LMST, is defined, by analogy with LTST, as the difference between the areocentric right ascensions of a point on the surface and of the FMS. The difference between LTST and LMST varies over time. The length of a mean solar day is constant and can be computed from the mean motion of the FMS and the rotation rate of a planet. The mean solar day is also called a 'sol'. Mean solar hours, minutes, and seconds are defined in the same way as the true solar units. The acceptable range of values for local_mean_solar_time is '00:00:00.000' to '23:59:59.999'. See also LOCAL_TRUE_SOLAR_TIME. (Definition adapted from [VAUGHAN1995].)**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **8**
  - maximum_characters: **12**

- **local_true_solar_time**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - description: **The LOCAL_TRUE_SOLAR_TIME element describes the local true solar time, or LTST. It is one of two types of solar time used to express the time of day at a point on the surface of a planetary body. LTST is measured relative to the true position of the Sun as seen from a point on the planet's surface. The coordinate system used to define LTST has its origin at the center of the planet. Its Zaxis is the north pole vector (or spin axis) of the planet. The X-axis is chosen to point in the direction of the vernal equinox of the planet's orbit. (The vernal or autumnal equinox vectors are found by searching the planetary ephemeris for those times when the vector from the planet's center to the Sun is perpendicular to the planet's north pole vector. The vernal equinox is the time when the Sun appears to rise above the planet's equator.) Positions of points in this frame can be expressed as a radius and areocentric 'right ascension' and 'declination' angles. The areocentric right ascension angle, or ARA, is measured positive eastward in the equatorial plane from the vernal equinox vector to the intersection of the meridian containing the point with the equator. Similarly, the areocentric declination is**

the angle between the equatorial plane and the vector to the point. LTST is a function of the difference between the ARAs of the vectors to the Sun and to the point on the planet's surface. Specifically, LTST = a(P) - a(TS)) * (24 / 360) + 12 where, LTST = the local true solar time in true solar hours a(P) = ARA of the point on the planet's surface in deg a(TS) = ARA of the true sun in degThe conversion factor of 24/360 is applied to transform the angular measure in decimal degrees into hours-minutes-seconds of arc. This standard representation divides 360 degrees into 24 hours, each hour into 60 minutes, and each minute into 60 seconds of arc. The hours, minutes, and seconds of arc are called 'true solar' hours, minutes, and seconds when used to measure LTST. The constant offset of 12 hours is added to the difference in ARAs to place local noon (12:00:00 in hours, minutes, seconds) at the point where the Sun is directly overhead; at this time, the ARA of the true sun is the same as that of the surface point so that a(P) - a(TS) = 0. The use of 'true solar' time units can be extended to define a true solar day as 24 true solar hours. Due to the eccentricity of planetary orbits and the inclination of orbital planes to equatorial planes (obliquity), the Sun does not move at a uniform rate over the course of a planetary year. Consequently, the number of SI seconds in a true solar day, hour, minute or second is not constant. See also LOCAL_MEAN_SOLAR_TIME. (Definition adapted from [VAUGHAN1995].) This element replaces the older MPF_LOCAL_TIME, which should no longer be used.**

- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **8**
- maximum_characters: **12**

- **logical_identifier**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **1**
  - maximum_value: **2147483647**

- **md5_checksum**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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**

- **mission_phase_name**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - description: **The mission_phase_name element provides the commonly-used identifier of a mission phase.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **100**

- **name**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

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

- **observing_system_name**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

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

- **offset**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0**
    - maximum_value: **2147483647**

- **orbit_number**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - description: **The orbit_number element identifies the number of the orbital revolution of the spacecraft around a target body. Note: In PDS Magellan altimetry and radiometry labels, the orbit_number data element refers to the Magellan orbit number corresponding to the following files: ephemeris, altimetry, and radiometry.**
    - data_type **ASCII_Integer**
    - minimum_value: **1**
    - maximum_value: **2147483647**

- **pattern**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

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

- **phone_book_flag**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - description: **The phone_book_flag attribute indicates whether or not this person should be included in the phone book.**
    - data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **planet_day_number**

steward: **pds**
name space id: **pds:**
version: **0.3.0.0.e**

- description: **The planet_day_number element indicates the number of sidereal days (rotation of 360 degrees) elapsed since a reference day (e.g., the day on which a landing vehicle set down). Days are measured in rotations of the planet in question from the reference day (which is day zero). Note: For MPF, the planet_day_number was measured from 1 rather than 0 as the first day of surface operations. Negative numbers referred to pre-surface (cruise) images.**
- data_type: **ASCII_Real**
- minimum_value: **0**
- maximum_value: **INF**

- **postal_address_text**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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

- **product_class**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - description: **The product_class attribute identifies the generic class of the product. For example, the product Product_Table_Character would have product_class=Product_Table_Character.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **100**

- **product_subclass**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

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

- **records**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - description: **The reference association type attribute provides the name of the association used in a reference.**
  - data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    has_miscellaneous_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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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_Numeric_Base2**

- **sample_display_direction**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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**

- **solar_longitude**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - description: **The solar_longitude element provides the value of the angle between the body_Sun line at the time of interest and the body_Sun line at the vernal equinox. This provides a measure of season on a target body, with values of 0 to 90 degrees representing northern spring, 90 to 180 degrees representing northern summer, 180 to 270 degrees representing northern autumn and 270 to 360 degrees representing northern winter. For IRAS: the geocentric ecliptic longitude (B1950) of the Sun at the start of a scan.**
    - data_type: **ASCII_Real**
    - minimum_value: **0**
    - maximum_value: **INF**

- **spacecraft_clock_cnt_partition**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - description: **The spacecraft_clock_cnt_partition element indicates the clock partition active for the SPACECRAFT_CLOCK_START_COUNT and SPACECRAFT_CLOCK_STOP_COUNT elements.**
    - data_type: **ASCII_Integer**
    - minimum_value: **0**
    - maximum_value: **2147483647**

- **spacecraft_clock_start_count**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - description: **The starting point identifer 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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**

- **submitter_id**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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**
    - pattern: **(+{1}[0-9]{2})?([0-9]{3} [0-9]{3} [0-9]{4}))**

- **title**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

- 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
  m**2
  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
m**3

- **unit_id**

  steward: **pds**
  name space id: **pds:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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]*)**

- **Steward:img**

- **application_process_id**

  steward: **img**
  name space id: **img:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

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

- **comment**

  steward: **img**
  name space id: **img:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - description: **(Old filter_number) This element provides the unique identifier of an instrument filter through which an image or meansurement 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

- description: **xxx TBD E. Rye xxx**
- data_type: **ASCII_Numeric_Base2**

- **positive_azimuth_direction**

  steward: **img**
  name space id: **img:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

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

- **y**

  steward: **img**
  name space id: **img:**
  version: **0.3.0.0.e**

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

- **z**

  steward: **img**
  name space id: **img:**
  version: **0.3.0.0.e**

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

- **Steward:rings**

- **incidence_angle**

  steward: **rings**
  name space id: **rings:**
  version: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

    - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **10**
  - permissible value
    STELLAR

- **planetary_occultation_flag**

  steward: **rings**
  name space id: **rings:**
  version: **0.3.0.0.e**

  - description: **The planetary_occultation_flag element is a yes-or-no flag hat 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

- 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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**

- **Steward:ops**

- **abstract_desc**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The abstract desc attribute provides a summary of a text, scientific article, or document.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **archive_status**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - 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** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  ARCHIVED
  IN_LIEN_RESOLUTION
  IN_PEER_REVIEW
  IN_QUEUE
  LOCALLY_ARCHIVED
  PRE_PEER_REVIEW
  SAFED
  SUPERSEDED
  IN_QUEUE_ACCUMULATING
  PRE_PEER_REVIEW_ACCUMULATING
  IN_PEER_REVIEW_ACCUMULATING
  IN_LIEN_RESOLUTION_ACCUMULATING
  LOCALLY_ARCHIVED_ACCUMULATING
  ARCHIVED_ACCUMULATING

- **archive_status_note**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The archive status note attribute provides a comment about the archive status.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **citation_text**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

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

- **comment**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - 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: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

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

- **constant_value**

steward: **ops**
name space id: **ops:**
version: **0.3.0.0.e**

- 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: **0.3.0.0.e**

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

- **curating_node_id**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The curating_node_id attribute provides the id of the node currently maintaining the data set or volume and is responsible for maintaining catalog information.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **data_set_id**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - 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: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - 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: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

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

- **data_set_terse_desc**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **A one line description of the data set**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **data_type**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - 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_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_Numeric_Base2
    ASCII_Numeric_Base16
    ASCII_NonNegative_Integer

- **definition**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - description: **The maximum occurences 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: **0.3.0.0.e**

  - 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**

- **medium_type**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The medium_type attribute identifies the physical storage medium for a data volume. Examples: CD-ROM, CARTRIDGE TAPE.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **minimum_occurrences**

steward: **ops**
name space id: **ops:**
version: **0.3.0.0.e**

- description: **The minimum occurences 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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

- **producer_full_name**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.e**

    - 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**

- **publication_date**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.e**

    - description: **The publication_date attribute provides the date when a published item, such as a document or a physical archival voliume, was issued.**
    - data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **registration_authority_id**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.e**

    - 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: **0.3.0.e**

    - 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: **0.3.0.e**

    - 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]*)**

- **start_date_time**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.e**

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

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

- **steward_id**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - 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**

- **stop_date_time**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The stop_date_time attribute provides the date and time at the end of a time interval of interest.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **unit_of_measure_type**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - 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** - Enumerated
  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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: **0.3.0.0.e**

  - 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]*)**

- **volumes**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The volumes element provides the number of physical data volumes contained in a volume set.**
  - data_type: **ASCII_Integer**
  - minimum_value: **0**
  - maximum_value: **2147483647**

- **volume_de_fullname**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The volume_de_fullname attribute provide the full name of the data engineer.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_format**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The volume_format attribute identifies the logical format used in writing a data volume.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_id**

  steward: **ops**
  name space id: **ops:**
  version: **0.3.0.0.e**

  - description: **The volume_id attribute provides a unique identifier for a data volume. Example: MG_1001.**
  - data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_name**

  steward: **ops**

name space id: **ops:**
version: **0.3.0.0.e**

- description: **The volume_name attribute contains the name of a data volume.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **volume_series_name**

steward: **ops**
name space id: **ops:**
version: **0.3.0.0.e**

- description: **The volume_series_name element provides a full, formal name that describes a broad categorization of data products or data sets related to a planetary body or a research campaign (e.g. International Halley Watch). A volume series consists of one or more volume sets that represent data from one or more missions or campaigns.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **volume_set_id**

steward: **ops**
name space id: **ops:**
version: **0.3.0.0.e**

- description: **The volume_set_id attribute identifies a data volume or a set of volumes. Volume sets are normally considered as a single orderable entity. Examples: USA_NASA_PDS_MG_1001, USA_NASA_PDS_GR_0001_TO_GR_0009**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **volume_set_name**

steward: **ops**
name space id: **ops:**
version: **0.3.0.0.e**

- description: **The volume_set_name element provides the full, formal name of one or more data volumes containing a single data set or a collection of related data sets. Volume sets are normally considered as a single orderable entity.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **volume_size**

steward: **ops**
name space id: **ops:**
version: **0.3.0.0.e**

- description: **The volume size attribute provide the number of bytes in the volume.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **volume_version_id**

steward: **ops**
name space id: **ops:**
version: **0.3.0.0.e**

- description: **The volume_version_id attribute indentifies the version of a data volume. All original volumes should use a volume_version_id of 'Version 1'.**
- data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **xml_schema_base_type**

  steward: **ops**
  name space id: **ops**
  version: **0.3.0.0.e**

    - 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**

8. **PDS4 Class Definitions - Mon Apr 04 17:36:21 PDT 2011**

   Generated from the PDS4 Information Model Version 0.3.0.0.e

   - **Archive_Bundle**

     description: **An archive bundle is a product that references primary collections.**
     role: **Concrete**

       - **Identification_Area_Bundle Occurs 1 Times**

         description: **The bundle identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
           - **End** Subject_Area
       - **End** Identification_Area_Bundle

       - **Cross_Reference_Area_Bundle - Occurs 0 to 1 Times**

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

- **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** Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Bundle

- **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** Bundle_Member_Entry
- **End** Archive_Bundle

- **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** Origin_Offset_Vector

  - **Origin_Rotation_Quaternion 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** Origin_Rotation_Quaternion
- **End** Az_el_coordinate_system

- ## 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** Coordinate_System

  - **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** Axis_Vector

  - **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** Center_Vector

  - **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** Horizontal_Vector

  - **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** Vertical_Vector

- **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** Vector

- **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** Coefficients_Array

- **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** Coefficients_Array
- **End** CAHVORE

- **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** Coordinate_System

  - **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** Axis_Vector

- **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** Center_Vector

- **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** Horizontal_Vector

- **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** Vertical_Vector

- **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** Vector

- **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** Coefficients_Array
- **End** CAHVOR

- ## **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** Coordinate_System

- **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** Axis_Vector

- **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** Center_Vector

- **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** Horizontal_Vector

- **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** Vertical_Vector
- **End** CAHV

- **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** Camera_Parameters

- ## 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** Coefficients_Array

- ## 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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Collection

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

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** Optional

    - **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** Observing_System_Reference_Entry
    - **End** Observing_System_Component
  - **End** Observing_System

  - **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

  - **End** Collection_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **2**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

    - **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
      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** Table_Field_LIDVID

      - **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** Table_Field_File_Specification_Name
- **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: *value*
    attribute: **comment** value: *value* ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: *value*
    attribute: **record_bytes** value: *value*
    attribute: **records** value: *value*
    attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

    - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
      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** Table_Field_LIDVID

- **End** Table_Record_Inventory_LIDVID_Secondary
- **End** Inventory_LIDVID_Secondary
- **End** File_Area_Inventory_LIDVID_Secondary

- **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* Optional
    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** File

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

    description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: *value*
    attribute: **comment** value: *value* Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: *value*
    attribute: **record_bytes** value: *value*
    attribute: **records** value: *value*
    attribute: **reference_association_type** value: **has_member_LID_Secondary**

    - **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
      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** Table_Field_LID
    - **End** Table_Record_Inventory_LID_Secondary
  - **End** Inventory_LID_Secondary
- **End** File_Area_Inventory_LID_Secondary
- **End** Collection_Browse

- **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area_Collection

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

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** Optional

    - **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** Observing_System_Reference_Entry
  - **End** Observing_System_Component
- **End** Observing_System

- **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

  - **End** Collection_Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**
    role: **Concrete**

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

- **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

  description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
  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** Table_Field_LIDVID

  - **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** Table_Field_File_Specification_Name
  - **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* Optional
    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** File

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

  description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: **1**
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***
  attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

  - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

    description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
    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** Table_Field_LIDVID
    - **End** Table_Record_Inventory_LIDVID_Secondary
  - **End** Inventory_LIDVID_Secondary
- **End** File_Area_Inventory_LIDVID_Secondary

- **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

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

    description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**

attribute: **offset** value: *value*
attribute: **record_bytes** value: *value*
attribute: **records** value: *value*
attribute: **reference_association_type** value: **has_member_LID_Secondary**

- **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

  description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
  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** Table_Field_LID
- **End** Table_Record_Inventory_LID_Secondary
- **End** Inventory_LID_Secondary
- **End** File_Area_Inventory_LID_Secondary
- **End** Collection_Calibration

- **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Collection

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

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry
      - **End** Observing_System_Component
  - **End** Observing_System

  - **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

    - **End** Collection_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**
    role: **Concrete**
    attribute: **local_identifier** value: *value*
    attribute: **comment** value: *value* ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **2**
    attribute: **offset** value: *value*
    attribute: **record_bytes** value: *value*
    attribute: **records** value: *value*
    attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

    - **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
      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** Table_Field_LIDVID

      - **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** Table_Field_File_Specification_Name
- **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

    - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
      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** Table_Field_LIDVID

- - - **End** Table_Record_Inventory_LIDVID_Secondary
  - - **End** Inventory_LIDVID_Secondary
- - **End** File_Area_Inventory_LIDVID_Secondary

- - **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

    description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
    role: **Concrete**

    - - **File Occurs 1 Times**

        description: **The File class consists of attributes that describe a file in a data store.**
        role: **Concrete**
        attribute: **local_identifier** value: ***value*** Optional
        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** File

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

        description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
        role: **Concrete**
        attribute: **local_identifier** value: ***value***
        attribute: **comment** value: ***value*** Optional
        attribute: **encoding_type** value: **CHARACTER**
        attribute: **fields** value: **1**
        attribute: **offset** value: ***value***
        attribute: **record_bytes** value: ***value***
        attribute: **records** value: ***value***
        attribute: **reference_association_type** value: **has_member_LID_Secondary**

        - - **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

            description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
            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** Table_Field_LID
        - - **End** Table_Record_Inventory_LID_Secondary
    - - **End** Inventory_LID_Secondary
  - - **End** File_Area_Inventory_LID_Secondary
- - **End** Collection_Context

- - **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area_Collection

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

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** Optional

    - **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** Observing_System_Reference_Entry
- **End** Observing_System_Component
- **End** Observing_System

- **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

  - **End** Collection_Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection
  attribute: **process_level_id** value: **CLB, DRV, RAW, RDC** Optional

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: **value** Optional
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**

role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**
attribute: **offset** value: *value*
attribute: **record_bytes** value: *value*
attribute: **records** value: *value*
attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

- **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

  description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
  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** Table_Field_LIDVID

  - **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** Table_Field_File_Specification_Name
  - **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* Optional
    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** File

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

  description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
  role: **Concrete**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: **1**
  attribute: **offset** value: *value*
  attribute: **record_bytes** value: *value*
  attribute: **records** value: *value*
  attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

  - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

    description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
    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** Table_Field_LIDVID
  - **End** Table_Record_Inventory_LIDVID_Secondary
- **End** Inventory_LIDVID_Secondary
- **End** File_Area_Inventory_LIDVID_Secondary

- **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* Optional
    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** File

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

    description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: *value*
    attribute: **comment** value: *value* Optional

attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **1**
attribute: **offset** value: *value*
attribute: **record_bytes** value: *value*
attribute: **records** value: *value*
attribute: **reference_association_type** value: **has_member_LID_Secondary**

- **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

  description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
  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** Table_Field_LID
- **End** Table_Record_Inventory_LID_Secondary
- **End** Inventory_LID_Secondary
- **End** File_Area_Inventory_LID_Secondary
- **End** Collection_Data

- **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Collection

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

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

- **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: **title** value: ***value***
attribute: **description** value: ***value*** ^{Optional}

- **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** Observing_System_Reference_Entry
- **End** Observing_System_Component
- **End** Observing_System

- **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- **End** Collection_Reference_Entry

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

description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **2**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

    - **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
      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** Table_Field_LIDVID

      - **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** Table_Field_File_Specification_Name
- **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

    - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
      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** Table_Field_LIDVID
  - - **End** Table_Record_Inventory_LIDVID_Secondary
  - - **End** Inventory_LIDVID_Secondary
- - **End** File_Area_Inventory_LIDVID_Secondary

- - **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

  - - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

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

    description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LID_Secondary**

    - - **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
      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** Table_Field_LID
    - - **End** Table_Record_Inventory_LID_Secondary
  - - **End** Inventory_LID_Secondary
- - **End** File_Area_Inventory_LID_Secondary
- **End** Collection_Document

- - **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area_Collection

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

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** Optional

    - **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** Observing_System_Reference_Entry
- **End** Observing_System_Component
- **End** Observing_System

- **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

  - **End** Collection_Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: **value** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**
    role: **Concrete**

attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* ^{Optional}
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**
attribute: **offset** value: *value*
attribute: **record_bytes** value: *value*
attribute: **records** value: *value*
attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

- **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

  description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
  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** Table_Field_LIDVID

  - **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** Table_Field_File_Specification_Name
  - **End** Table_Record_Inventory_LIDVID_Primary
  - **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* ^{Optional}
    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** File

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

  description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
  role: **Concrete**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: **1**
  attribute: **offset** value: *value*
  attribute: **record_bytes** value: *value*
  attribute: **records** value: *value*
  attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

  - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

    description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
    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** Table_Field_LIDVID
    - **End** Table_Record_Inventory_LIDVID_Secondary
  - **End** Inventory_LIDVID_Secondary
- **End** File_Area_Inventory_LIDVID_Secondary

- **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* Optional
    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** File

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

    description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: *value*
    attribute: **comment** value: *value* Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**

attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***
attribute: **reference_association_type** value: **has_member_LID_Secondary**

- **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

  description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
  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** Table_Field_LID
- **End** Table_Record_Inventory_LID_Secondary
- **End** Inventory_LID_Secondary
- **End** File_Area_Inventory_LID_Secondary
- **End** Collection_Generic

- **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
- **End** Subject_Area

- **End** Identification_Area_Collection

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

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** Optional

    - **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** Observing_System_Reference_Entry
      - **End** Observing_System_Component
    - **End** Observing_System

  - **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

    - **End** Collection_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: **_value_** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**
    role: **Concrete**
    attribute: **local_identifier** value: **_value_**
    attribute: **comment** value: **_value_** ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **2**
    attribute: **offset** value: **_value_**
    attribute: **record_bytes** value: **_value_**
    attribute: **records** value: **_value_**
    attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

    - **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
      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** Table_Field_LIDVID

      - **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** Table_Field_File_Specification_Name
- **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: *value*
    attribute: **comment** value: *value* ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: *value*
    attribute: **record_bytes** value: *value*
    attribute: **records** value: *value*
    attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

    - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
      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** Table_Field_LIDVID

- **End** Table_Record_Inventory_LIDVID_Secondary
  - **End** Inventory_LIDVID_Secondary
- **End** File_Area_Inventory_LIDVID_Secondary

- **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

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

    description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LID_Secondary**

    - **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
      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** Table_Field_LID
    - **End** Table_Record_Inventory_LID_Secondary
  - **End** Inventory_LID_Secondary
- **End** File_Area_Inventory_LID_Secondary
- **End** Collection_Geometry

- **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
- **End** Identification_Area_Collection

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

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

    - **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: **title** value: ***value***
        attribute: **description** value: ***value*** Optional

        - **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** Observing_System_Reference_Entry
- **End** Observing_System_Component
- **End** Observing_System

- **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

  - **End** Collection_Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: **value** Optional
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**

role: **Concrete**
attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* ^{Optional}
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **2**
attribute: **offset** value: *value*
attribute: **record_bytes** value: *value*
attribute: **records** value: *value*
attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

- **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

  description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
  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** Table_Field_LIDVID

  - **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** Table_Field_File_Specification_Name
- **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* ^{Optional}
    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** File

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

  description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
  role: **Concrete**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: **1**
  attribute: **offset** value: *value*
  attribute: **record_bytes** value: *value*
  attribute: **records** value: *value*
  attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

    - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
      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** Table_Field_LIDVID
    - **End** Table_Record_Inventory_LIDVID_Secondary
  - **End** Inventory_LIDVID_Secondary
- **End** File_Area_Inventory_LIDVID_Secondary

- **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

    - **File Occurs 1 Times**

      description: **The File class consists of attributes that describe a file in a data store.**
      role: **Concrete**
      attribute: **local_identifier** value: *value* Optional
      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** File

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

      description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
      role: **Concrete**
      attribute: **local_identifier** value: *value*
      attribute: **comment** value: *value* Optional

attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: **1**
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***
attribute: **reference_association_type** value: **has_member_LID_Secondary**

- **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

  description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
  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** Table_Field_LID
  - **End** Table_Record_Inventory_LID_Secondary
- **End** Inventory_LID_Secondary
- **End** File_Area_Inventory_LID_Secondary
- **End** Collection_Miscellaneous

- **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Collection

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

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

  - **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: **title** value: *value*
    attribute: **description** value: *value* Optional

    - **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** Observing_System_Reference_Entry
      - **End** Observing_System_Component
    - **End** Observing_System

  - **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

    - **End** Collection_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **2**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

    - **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a primary member.**
      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** Table_Field_LIDVID

      - **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** Table_Field_File_Specification_Name
- **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

    - **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
      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** Table_Field_LIDVID
  - **End** Table_Record_Inventory_LIDVID_Secondary
  - **End** Inventory_LIDVID_Secondary
- **End** File_Area_Inventory_LIDVID_Secondary

- **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: **value** Optional
    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** File

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

    description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: **value**
    attribute: **comment** value: **value** Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: **value**
    attribute: **record_bytes** value: **value**
    attribute: **records** value: **value**
    attribute: **reference_association_type** value: **has_member_LID_Secondary**

    - **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
      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** Table_Field_LID
    - **End** Table_Record_Inventory_LID_Secondary
  - **End** Inventory_LID_Secondary
- **End** File_Area_Inventory_LID_Secondary
- **End** Collection_SPICE

- **Collection_Volume_PDS3**

description: **A Collection Volume PDS3 product captures the PDS3 volume information.**
role: **Concrete**

- **Identification_Area Occurs 1 Times**

  description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area

- **Volume_PDS3 Occurs 1 Times**

  description: **The Volume_PDS3 class is used to capture the volume information from the PDS3 Data Set Catalog.**
  role: **Concrete**
  attribute: **archive_status** value: **ARCHIVED, ARCHIVED_ACCUMULATING, IN_LIEN_RESOLUTION, IN_LIEN_RESOLUTION_ACCUMULATING, IN_PEER_REVIEW, IN_PEER_REVIEW_ACCUMULATING, IN_QUEUE, IN_QUEUE_ACCUMULATING, LOCALLY_ARCHIVED, LOCALLY_ARCHIVED_ACCUMULATING, PRE_PEER_REVIEW, PRE_PEER_REVIEW_ACCUMULATING, SAFED, SUPERSEDED** Optional
  attribute: **description** value: ***value*** Optional
  attribute: **archive_status_note** value: ***value***
  attribute: **curating_node_id** value: ***value*** Optional
  attribute: **medium_type** value: ***value***
  attribute: **publication_date** value: ***value***
  attribute: **volume_de_fullname** value: ***value***
  attribute: **volume_format** value: ***value***
  attribute: **volume_id** value: ***value***
  attribute: **volume_name** value: ***value***
  attribute: **volume_set_id** value: ***value***
  attribute: **volume_size** value: ***value***
  attribute: **volume_version_id** value: ***value***

- **End** Volume_PDS3

- **Cross_Reference_Area_Generic - Occurs 0 to 1 Times**

description: **The cross reference area generic 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 regisered 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** Bibliographic_Reference

- **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** Reference_Entry_Generic
- **End** Cross_Reference_Area_Generic
- **End** Collection_Volume_PDS3

- **Collection_Volume_Set_PDS3**

  description: **A Collection Volume Set PDS3 product captures the PDS3 volume set information.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area

- **Volume_Set_PDS3 Occurs 1 Times**

  description: **The Volume_Set_PDS3 class is used to capture the volume set information from the PDS3 Data Set Catalog.**
  role: **Concrete**
  attribute: **description** value: ***value*** ^{Optional}
  attribute: **volume_series_name** value: ***value***
  attribute: **volume_set_id** value: ***value***
  attribute: **volume_set_name** value: ***value***
  attribute: **volumes** value: ***value***

- **End** Volume_Set_PDS3

- **Cross_Reference_Area_Generic - Occurs 0 to 1 Times**

  description: **The cross reference area generic 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 regisered 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** Bibliographic_Reference

  - **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** Reference_Entry_Generic
  - **End** Cross_Reference_Area_Generic
- **End** Collection_Volume_Set_PDS3

- **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 that identify and name 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: **contains_primary_member** 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Collection

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

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry

- **End** Observing_System_Component
- **End** Observing_System

- **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_file_manifest, has_file_manifest_collection, has_investigation_collection, has_node_collection, has_publication_collection, has_target_collection, has_update_collection**

- **End** Collection_Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Collection

- **File_Area_Inventory_LIDVID_Primary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Primary class describes a file and an inventory with references to primary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

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

    description: **The Inventory LIDVID Primary class defines the inventory for primary members of a collection.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **2**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LIDVID_Primary**

    - **Table_Record_Inventory_LIDVID_Primary Occurs 1 Times**

      description: **The Table Record Inventory LIDVID Primary class defines the inventory record for a**

primary member.
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** Table_Field_LIDVID

- **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** Table_Field_File_Specification_Name
- **End** Table_Record_Inventory_LIDVID_Primary
- **End** Inventory_LIDVID_Primary
- **End** File_Area_Inventory_LIDVID_Primary

- **File_Area_Inventory_LIDVID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LIDVID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDVIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* Optional
    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** File

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

    description: **The Inventory LIDVID Secondary class defines the inventory for secondary members of a collection. The references are LIDVIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: *value*
    attribute: **comment** value: *value* Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: *value*
    attribute: **record_bytes** value: *value*

attribute: **records** value: ***value***
attribute: **reference_association_type** value: **has_member_LIDVID_Secondary**

- **Table_Record_Inventory_LIDVID_Secondary Occurs 1 Times**

  description: **The Table Record Inventory LIDVID Secondary class defines the inventory record for a secondary member. The reference is a LIDVID.**
  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** Table_Field_LIDVID
  - **End** Table_Record_Inventory_LIDVID_Secondary
- **End** Inventory_LIDVID_Secondary
- **End** File_Area_Inventory_LIDVID_Secondary

- **File_Area_Inventory_LID_Secondary - Occurs 0 to 1 Times**

  description: **The File Area Inventory LID Secondary class describes a file and an inventory with references to secondary members. The references are product LIDs.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

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

    description: **The Inventory LID Secondary class defines the inventory for secondary members of a collection. The references are LIDs.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **fields** value: **1**
    attribute: **offset** value: ***value***
    attribute: **record_bytes** value: ***value***
    attribute: **records** value: ***value***
    attribute: **reference_association_type** value: **has_member_LID_Secondary**

    - **Table_Record_Inventory_LID_Secondary Occurs 1 Times**

      description: **The Table Record Inventory LID Secondary class defines the inventory record for a secondary member. The reference is a LID.**
      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** Table_Field_LID
- **End** Table_Record_Inventory_LID_Secondary
- **End** Inventory_LID_Secondary
- **End** File_Area_Inventory_LID_Secondary
- **End** Collection_XML_Schema

- **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 that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area_Manifest

  - **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 regisered 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** Bibliographic_Reference

- **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** Reference_Entry
- **End** Cross_Reference_Area_Manifest

- **File_Area_Manifest Occurs 1 Times**

description: **The File Area Manifest class describes a file that contains a character table that is compliant to a file generated from MD5 checksum software.**
role: **Concrete**

- **File Occurs 1 Times**

   description: **The File class consists of attributes that describe a file in a data store.**
   role: **Concrete**
   attribute: **local_identifier** value: **value** Optional
   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** File

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

   description: **The manifest class defines a table for file references.**
   role: **Concrete**
   attribute: **local_identifier** value: **value**
   attribute: **comment** value: **value** Optional
   attribute: **encoding_type** value: **CHARACTER**
   attribute: **fields** value: **2**
   attribute: **offset** value: **value**
   attribute: **record_bytes** value: **value**
   attribute: **records** value: **value**
   attribute: **reference_association_type** value: **has_member** Optional

   - **Table_Record_Manifest Occurs 1 Times**

      description: **The Table Record Manifest class defines the record for an MD5 checksum manifest table.**
      role: **Concrete**

- **Table_Field_Checksum Occurs 1 Times**

  description: **The Table Field Checksum class defines a table field that provides a file checksum.**
  role: **Concrete**
  attribute: **field_name** value: **MD5_checksum**
  attribute: **field_number** value: **2** Optional
  attribute: **field_data_type** value: **ASCII_MD5_Checksum**
  attribute: **field_location** value: *value*
  attribute: **field_length** value: *value*
  attribute: **field_format** value: *value* Optional
  attribute: **field_description** value: *value* Optional

- **End** Table_Field_Checksum

- **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** Table_Field_File_Specification_Name
- **End** Table_Record_Manifest
- **End** Manifest
- **End** File_Area_Manifest
- **End** Delivery_Manifest

- **Detector**

  description: **The Detector class provides a description of a phyiscal object that collects data.**
  role: **Concrete**
  attribute: **description** value: *value* Optional

- **End** Detector

- **Header**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: *value* Optional
  attribute: **offset** value: *value*

- **End** Header

- **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_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: **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** Image_Map_Projection

- **Local_DD**

  description: **The Local_DD class defines a local data dictionary.**
  role: **Concrete**
  attribute: **comment** value: ***value*** ^{Optional}
  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_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Local_Value_Domain
- **End** Local_Attribute

- **Local_Class - Occurs 0 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** Local_Association
  - **End** Local_Class
- **End** Local_DD

- **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 that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Manifest

- **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 regisered 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** Bibliographic_Reference

  - **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** Reference_Entry
- **End** Cross_Reference_Area_Manifest

- **File_Area_Manifest Occurs 1 Times**

  description: **The File Area Manifest class describes a file that contains a character table that is compliant to a file generated from MD5 checksum software.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**

        attribute: **local_identifier** value: ***value*** ^{Optional}

        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** File

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

  description: **The manifest class defines a table for file references.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: **2**
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***
  attribute: **reference_association_type** value: **has_member** ^{Optional}

  - **Table_Record_Manifest Occurs 1 Times**

    description: **The Table Record Manifest class defines the record for an MD5 checksum manifest table.**
    role: **Concrete**

    - **Table_Field_Checksum Occurs 1 Times**

      description: **The Table Field Checksum class defines a table field that provides a file checksum.**
      role: **Concrete**
      attribute: **field_name** value: **MD5_checksum**
      attribute: **field_number** value: **2** ^{Optional}
      attribute: **field_data_type** value: **ASCII_MD5_Checksum**
      attribute: **field_location** value: ***value***
      attribute: **field_length** value: ***value***
      attribute: **field_format** value: ***value*** ^{Optional}
      attribute: **field_description** value: ***value*** ^{Optional}

      - **End** Table_Field_Checksum

    - **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** Table_Field_File_Specification_Name
    - **End** Table_Record_Manifest
  - **End** Manifest
  - **End** File_Area_Manifest
- **End** Package

- # **Product_Array_2D_Image**

description: **The Product Array 2D Image class defines a product consisting of at least one Array 2D Image and other associated data objects and metadata.**
role: **Concrete**

- **Identification_Area_Product Occurs 1 Times**

  description: **The product identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

  - **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: **title** value: ***value***
attribute: **description** value: ***value*** ^{Optional}

- **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** Observing_System_Reference_Entry
  - **End** Observing_System_Component
- **End** Observing_System

- **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

description: **The observation area consists of attributes that provide 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** Mission_Area

- **Node_Area - Occurs 0 to * Times**

  description: **The node area allow the insertion of node specific metadata.**
  role: **Concrete**

- **End** Node_Area
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **start_date_time** value: ***value***
  attribute: **stop_date_time** value: ***value***
  attribute: **local_mean_solar_time** value: ***value*** ^{Optional}
  attribute: **local_true_solar_time** value: ***value*** ^{Optional}
  attribute: **mission_phase_name** value: ***value*** ^{Optional}

attribute: **orbit_number** value: ***value*** ^{Optional}
attribute: **planet_day_number** value: ***value*** ^{Optional}
attribute: **solar_longitude** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_cnt_partition** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_start_count** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_stop_count** value: ***value*** ^{Optional}

- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

  description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

  - **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

    description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
    role: **Concrete**
    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**
    attribute: **offset** value: ***value***

    - **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** Array_Axis

    - **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** Image_2D_Display

- **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
attribute: **name** value: ***value*** ^{Optional}
attribute: **offset** value: ***value***

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: **value**
  attribute: **comment** value: **value** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: **value**
  attribute: **offset** value: **value**

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: **value**
  attribute: **comment** value: **value** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: **value**
  attribute: **offset** value: **value**
  attribute: **record_bytes** value: **value**
  attribute: **records** value: **value**

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

  - **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** Special_Constants
- **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** ^{Optional}
attribute: **encoding_type** value: **BINARY**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

- **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

      - **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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

  - **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Array_2D_Image

- **Product_Array_3D_Image**

  description: **The Product Array 3D Image class defines a product consisting of at least one Array 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 that identify and name 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

    - **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: **title** value: ***value***
      attribute: **description** value: ***value*** ^{Optional}

        - **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** Observing_System_Reference_Entry
- **End** Observing_System_Component
- **End** Observing_System

- **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

  description: **The observation area consists of attributes that provide 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** Mission_Area

  - **Node_Area - Occurs 0 to * Times**

    description: **The node area allow the insertion of node specific metadata.**
    role: **Concrete**

  - **End** Node_Area
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **start_date_time** value: ***value***
    attribute: **stop_date_time** value: ***value***
    attribute: **local_mean_solar_time** value: ***value*** ^{Optional}
    attribute: **local_true_solar_time** value: ***value*** ^{Optional}
    attribute: **mission_phase_name** value: ***value*** ^{Optional}
    attribute: **orbit_number** value: ***value*** ^{Optional}
    attribute: **planet_day_number** value: ***value*** ^{Optional}
    attribute: **solar_longitude** value: ***value*** ^{Optional}
    attribute: **spacecraft_clock_cnt_partition** value: ***value*** ^{Optional}
    attribute: **spacecraft_clock_start_count** value: ***value*** ^{Optional}
    attribute: **spacecraft_clock_stop_count** value: ***value*** ^{Optional}
- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

  description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

  - **File Occurs 1 Times**

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

role: **Concrete**
attribute: **local_identifier** value: ***value*** ^{Optional}
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** File

- **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

    - **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** Array_Axis

    - **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** Image_2D_Display

    - **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** Array_Element

    - **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
role: **Concrete**
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**
attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
role: **Concrete**
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**
attribute: **offset** value: *value*

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: *value* ^{Optional}
  attribute: **offset** value: *value*

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: ***value***
  attribute: **offset** value: ***value***

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

    - **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** ^{Optional}
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

  - **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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

- **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Array_3D_Image

- **Product_Array_3D_Movie**

  description: **The Product Array 3D Movie defines a product consisting of at least one array 3D movie and other associated data objects and metadata.**
  role: **Concrete**

  - **Identification_Area_Product Occurs 1 Times**

    description: **The product identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

    - **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: **title** value: ***value***
      attribute: **description** value: ***value*** ^{Optional}

        - **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** Observing_System_Reference_Entry
        - **End** Observing_System_Component
    - **End** Observing_System

    - **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** Product_Reference_Entry

- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

  description: **The observation area consists of attributes that provide 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** Mission_Area

  - **Node_Area - Occurs 0 to * Times**

    description: **The node area allow the insertion of node specific metadata.**
    role: **Concrete**

  - **End** Node_Area
    attribute: **comment** value: **_value_** ^{Optional}
    attribute: **start_date_time** value: **_value_**
    attribute: **stop_date_time** value: **_value_**
    attribute: **local_mean_solar_time** value: **_value_** ^{Optional}
    attribute: **local_true_solar_time** value: **_value_** ^{Optional}
    attribute: **mission_phase_name** value: **_value_** ^{Optional}
    attribute: **orbit_number** value: **_value_** ^{Optional}
    attribute: **planet_day_number** value: **_value_** ^{Optional}
    attribute: **solar_longitude** value: **_value_** ^{Optional}
    attribute: **spacecraft_clock_cnt_partition** value: **_value_** ^{Optional}
    attribute: **spacecraft_clock_start_count** value: **_value_** ^{Optional}
    attribute: **spacecraft_clock_stop_count** value: **_value_** ^{Optional}

- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

  description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: **_value_** ^{Optional}
    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** File

  - **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

    description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**

role: **Concrete**
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**
attribute: **offset** value: **value**

- **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** Array_Axis

- **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** Image_2D_Display

- **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
role: **Concrete**
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**
attribute: **offset** value: **_value_**

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
role: **Concrete**
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**
attribute: **offset** value: **_value_**

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: ***value*** Optional
  attribute: **offset** value: ***value***

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

    - **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: *value*
  attribute: **offset** value: *value*

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: *value*
  attribute: **offset** value: *value*
  attribute: **record_bytes** value: *value*
  attribute: **records** value: *value*

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: *value*
  attribute: **offset** value: *value*
  attribute: **record_bytes** value: *value*
  attribute: **records** value: *value*

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

- **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**

attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

- **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

    - **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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}

- **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Array_3D_Movie

- **Product_Array_3D_Spectrum**

    description: **The Product Array 3D Spectrum class defines a product consisting of at least one Array 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 that identify and name 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: **data_set_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** Name_Resolution
        - **End** Subject_Area
    - **End** Identification_Area_Product

    - **Cross_Reference_Area_Product Occurs 1 Times**

        description: **The cross reference product 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 regisered 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** Bibliographic_Reference

- **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: **title** value: ***value***
attribute: **description** value: ***value*** Optional

  - **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** Observing_System_Reference_Entry
    - **End** Observing_System_Component
- **End** Observing_System

- **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

description: **The observation area consists of attributes that provide 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** Mission_Area

- **Node_Area - Occurs 0 to * Times**

  description: **The node area allow the insertion of node specific metadata.**
  role: **Concrete**

- **End** Node_Area
  attribute: **comment** value: ***value*** Optional
  attribute: **start_date_time** value: ***value***
  attribute: **stop_date_time** value: ***value***
  attribute: **local_mean_solar_time** value: ***value*** Optional
  attribute: **local_true_solar_time** value: ***value*** Optional
  attribute: **mission_phase_name** value: ***value*** Optional
  attribute: **orbit_number** value: ***value*** Optional
  attribute: **planet_day_number** value: ***value*** Optional
  attribute: **solar_longitude** value: ***value*** Optional
  attribute: **spacecraft_clock_cnt_partition** value: ***value*** Optional
  attribute: **spacecraft_clock_start_count** value: ***value*** Optional
  attribute: **spacecraft_clock_stop_count** value: ***value*** Optional
- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

  description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

  - **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

    description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
    role: **Concrete**
    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**
    attribute: **offset** value: ***value***

    - **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** Array_Axis

- **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** Image_2D_Display

- **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**

role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
role: **Concrete**
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**
attribute: **offset** value: **_value_**

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
role: **Concrete**
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**
attribute: **offset** value: *value*

- **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: ***value*** ^{Optional}
  attribute: **offset** value: ***value***

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional

attribute: **encoding_type** value: **CHARACTER**
attribute: **external_standard_id** value: ***value***
attribute: **offset** value: ***value***

- **End** Stream_Text

- **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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** Optional
attribute: **encoding_type** value: **BINARY**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

    - **Table_Record_Binary Occurs 1 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** Object_Statistics

- **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** Special_Constants
  - **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

- **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: *value*
  attribute: **offset** value: *value*
  attribute: **record_bytes** value: *value*
  attribute: **records** value: *value*

  - **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**

attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: *value*
attribute: **offset** value: *value*
attribute: **record_bytes** value: *value*
attribute: **records** value: *value*

- **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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

        - **End** Table_Character_Grouped_Field
      - **End** Table_Character_Field_Sequence
    - **End** Table_Character_Grouped_Sequence
  - **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Array_3D_Spectrum

- **Product_Attribute_Definition**

  description: **The Product Attribute Definition provides an attribute definition in XML encoding.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area

  - **Cross_Reference_Area - Occurs 0 to 1 Times**

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

    - **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: **title** value: **value**
      attribute: **description** value: **value** Optional

      - **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** Observing_System_Reference_Entry
- **End** Observing_System_Component
- **End** Observing_System

- **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** Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area

- **Attribute_Definition Occurs 1 Times**

  description: **The Attribute Definition class defines an attribute in the data dictioonary.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  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: **description** value: ***value*** Optional
  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** Terminological_Entry

- **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_AnyURI, ASCII_Boolean_TF, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, ASCII_Real, ASCII_Short_String_Collapsed, ASCII_Short_String_Preserved, ASCII_Text_Preserved, ASCII_Time, ASCII_VID**
  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}
  attribute: **conceptual_domain** 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** Permissible_Value
- **End** Value_Domain
- **End** Attribute_Definition
- **End** Product_Attribute_Definition

- **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 that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry

- **End** Observing_System_Component
- **End** Observing_System

- **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **File_Area Occurs 1 Times**

  description: **The File Area class describes a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

  - **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

    description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
    role: **Concrete**
    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**
    attribute: **offset** value: ***value***

    - **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** Array_Axis

    - **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** Image_2D_Display

- **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Spectrum

- **Encoded_Image - Occurs 0 to * 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**
  attribute: **local_identifier** value: **value**
  attribute: **comment** value: **value** Optional
  attribute: **encoding_type** value: **BINARY**
  attribute: **external_standard_id** value: **GIF, JPEG, PDF, TIFF**
  attribute: **offset** value: **value**

- **End** Encoded_Image

- **File_PDF - Occurs 0 to * Times**

  description: **The File PDF class describes a PDF encoded byte stream.**
  role: **Concrete**
  attribute: **local_identifier** value: **value**
  attribute: **comment** value: **value** Optional
  attribute: **encoding_type** value: **BINARY**
  attribute: **external_standard_id** value: **PDF**
  attribute: **offset** value: **value**

- **End** File_PDF

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: **value** Optional
  attribute: **offset** value: **value**

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

  - **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: ***value***
  attribute: **offset** value: ***value***

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

- **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** Table_Binary_Grouped_Field
  - **End** Table_Binary_Field_Sequence
 - **End** Table_Binary_Grouped_Sequence
  - **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**

attribute: **fields** value: *value*
attribute: **offset** value: *value*
attribute: **record_bytes** value: *value*
attribute: **records** value: *value*

- **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

    - **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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}

- **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area
- **End** Product_Browse

- **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 that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area_Bundle

  - **Cross_Reference_Area_Bundle - Occurs 0 to 1 Times**

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

    - **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** Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Bundle

- **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** Bundle_Member_Entry
- **End** Product_Bundle

- # 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 that identify and name 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area

- **Cross_Reference_Area_Context - Occurs 0 to 1 Times**

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

  - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

  - **End** Context_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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: **citation_text** value: *value*
  attribute: **description** value: *value* Optional

  - **End** Citation
- **End** Product_Citation

- **Product_Data_Set_PDS3**

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

  - **Identification_Area_Product Occurs 1 Times**

    description: **The product identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Context Occurs 1 Times**

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

    - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

    - **End** Context_Reference_Entry

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

        description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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** Bundle_Member_Entry

- **Data_Set_PDS3 Occurs 1 Times**

  description: **The Data Set PDS3 class is used to capture the data set information from the PDS3 Data Set Catalog.**
  role: **Concrete**
  attribute: **data_set_id** value: **value**
  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: **confidence_level_note** value: **value**
  attribute: **archive_status** value: **ARCHIVED, ARCHIVED_ACCUMULATING, IN_LIEN_RESOLUTION, IN_LIEN_RESOLUTION_ACCUMULATING, IN_PEER_REVIEW, IN_PEER_REVIEW_ACCUMULATING, IN_QUEUE, IN_QUEUE_ACCUMULATING, LOCALLY_ARCHIVED, LOCALLY_ARCHIVED_ACCUMULATING, PRE_PEER_REVIEW, PRE_PEER_REVIEW_ACCUMULATING, SAFED, SUPERSEDED** Optional
  attribute: **description** value: **value**

  - **End** Data_Set_PDS3
- **End** Product_Data_Set_PDS3

- **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 attributesthat identify and name 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, example.DPH**

    - **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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Document

- **Cross_Reference_Area_Document - Occurs 0 to 1 Times**

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry
    - **End** Observing_System_Component
  - **End** Observing_System

  - **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** Reference_Entry

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

description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Document

- **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*** ^{Optional}
    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** Document_File

  - **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** Document_Format
- **End** Document_Format_Set

- **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** Document_Desc
- **End** Product_Document

- **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 that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area_Product

  - **Cross_Reference_Area_Context Occurs 1 Times**

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

    - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

    - **End** Context_Reference_Entry

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

description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **Instrument Occurs 1 Times**

  description: **The Instrument class provides a description of a phyiscal object that collects data.**
  role: **Concrete**
  attribute: **description** value: ***value*** ^{Optional}

- **End** Instrument
- **End** Product_Instrument

- **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 that identify and name 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Context Occurs 1 Times**

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

  - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

  - **End** Context_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **Instrument_Host Occurs 1 Times**

  description: **The Instrument Host class provides a description of the phyiscal object upon which an instrument is mounted.**
  role: **Concrete**
  attribute: **description** value: *value* Optional

- **End** Instrument_Host
- **End** Product_Instrument_Host

- **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 that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Context Occurs 1 Times**

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

  - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

    - **End** Context_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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** Investigation
- **End** Product_Investigation

- **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 that identify and name 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: **data_set_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** Name_Resolution
        - **End** Subject_Area
    - **End** Identification_Area_Product

    - **Cross_Reference_Area_Context Occurs 1 Times**

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

        - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

        - **End** Context_Reference_Entry

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

            description: **The Bibliographic Reference class provides references to documents that are not regisered**

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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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** Mission
- **End** Product_Mission

- **Product_Node**

  description: **A node product describes a node.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area

- **End** Identification_Area

- **Cross_Reference_Area_Context - Occurs 0 to 1 Times**

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

  - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

  - **End** Context_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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: **node_name** value: **Engineering, Geosciences, Imaging, Navigation_Ancillary_Information_Facility, Planetary_Atmospheres, Planetary_Plasma_Interactions, Planetary_Rings, Radio_Science, Small_Bodies**
  attribute: **description** value: ***value*** Optional
  attribute: **institution_name** value: ***value***

- **End** Node
- **End** Product_Node

- **Product_Non_Specific**

  description: **The Product Non Specfic class defines a template for any data product.**
  role: **Concrete**

  - **Identification_Area_Product Occurs 1 Times**

    description: **The product identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

  - **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: **title** value: **value**
    attribute: **description** value: **value** Optional

    - **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** Observing_System_Reference_Entry
- **End** Observing_System_Component
- **End** Observing_System

- **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

  description: **The observation area consists of attributes that provide 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** Mission_Area

  - **Node_Area - Occurs 0 to * Times**

    description: **The node area allow the insertion of node specific metadata.**
    role: **Concrete**

  - **End** Node_Area
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **start_date_time** value: ***value***
    attribute: **stop_date_time** value: ***value***
    attribute: **local_mean_solar_time** value: ***value*** ^{Optional}
    attribute: **local_true_solar_time** value: ***value*** ^{Optional}
    attribute: **mission_phase_name** value: ***value*** ^{Optional}
    attribute: **orbit_number** value: ***value*** ^{Optional}
    attribute: **planet_day_number** value: ***value*** ^{Optional}
    attribute: **solar_longitude** value: ***value*** ^{Optional}
    attribute: **spacecraft_clock_cnt_partition** value: ***value*** ^{Optional}
    attribute: **spacecraft_clock_start_count** value: ***value*** ^{Optional}
    attribute: **spacecraft_clock_stop_count** value: ***value*** ^{Optional}
- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

  description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

  - **File Occurs 1 Times**

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

role: **Concrete**
attribute: **local_identifier** value: ***value*** ^{Optional}
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** File

- **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Image_2D_Display

  - **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** Array_Element

  - **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
role: **Concrete**
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**
attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
role: **Concrete**
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**
attribute: **offset** value: *value*

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: *value* ^{Optional}
  attribute: **offset** value: *value*

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: ***value***
  attribute: **offset** value: ***value***

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

    - **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** ^{Optional}
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

- **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID,
ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer,
ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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

- **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Non_Specific

- **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 that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area

- **Cross_Reference_Area_Context Occurs 1 Times**

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

  - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

    - **End** Context_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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: **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** ^{Optional}
  attribute: **registration_date** value: **value**
  attribute: **electronic_mail_address** value: **value** ^{Optional}
  attribute: **sort_name** value: **value**
  attribute: **description** value: **value** ^{Optional}
  attribute: **affiliation_type** value: **Affiliate, Data_Provider, Manager, Technical_Staff**
  attribute: **alternate_telephone_number** value: **value** ^{Optional}
  attribute: **institution_name** value: **value**
  attribute: **phone_book_flag** value: **value**
  attribute: **postal_address_text** value: **value**
  attribute: **telephone_number** value: **value** ^{Optional}

  - **End** PDS_Affiliate
- **End** Product_PDS_Affiliate

- **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 that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
- **End** Identification_Area

- **Cross_Reference_Area_Context Occurs 1 Times**

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

    - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

    - **End** Context_Reference_Entry

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

        description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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: **registration_date** value: ***value***
  attribute: **electronic_mail_address** value: ***value*** ^{Optional}
  attribute: **sort_name** value: ***value***
  attribute: **description** value: ***value*** ^{Optional}

  - **End** PDS_Guest
- **End** Product_PDS_Guest

- **Product_Resource**

  description: **A resource product describes a web resource.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area

- **Cross_Reference_Area_Context Occurs 1 Times**

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

    - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

    - **End** Context_Reference_Entry

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

      description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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** Resource
- **End** Product_Resource

- **Product_SPICE_Kernel_Binary**

  description: **The Product SPICE Kernel Text class defines a binary SPICE product.**
  role: **Concrete**

    - **Identification_Area Occurs 1 Times**

      description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area

- **File_Area_SPICE_Kernel_Binary Occurs 1 Times**

  description: **The File Area SPICE Kernel Text class describes a file that contains a SPICE Kernel Binary object.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

  - **SPICE_Kernel_Binary Occurs 1 Times**

    description: **The SPICE Kernel class describes a SPICE file.**
    role: **Concrete**
    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**
    attribute: **offset** value: ***value***

  - **End** SPICE_Kernel_Binary
- **End** File_Area_SPICE_Kernel_Binary

- **Cross_Reference_Area_Generic Occurs 1 Times**

  description: **The cross reference area generic 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 regisered 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** Bibliographic_Reference

- **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** Reference_Entry_Generic
- **End** Cross_Reference_Area_Generic
- **End** Product_SPICE_Kernel_Binary

- **Product_SPICE_Kernel_Text**

  description: **The Product SPICE Kernel Text class defines a text SPICE product.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

    - **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: **title** value: ***value***
      attribute: **description** value: ***value*** Optional

        - **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** Observing_System_Reference_Entry
        - **End** Observing_System_Component
    - **End** Observing_System

    - **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **File_Area_SPICE_Kernel_Text Occurs 1 Times**

description: **The File Area SPICE Kernel Text class describes a file that contains a SPICE Kernel Text object.**
role: **Concrete**

- **File Occurs 1 Times**

  description: **The File class consists of attributes that describe a file in a data store.**
  role: **Concrete**
  attribute: **local_identifier** value: *value* Optional
  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** File

- **SPICE_Kernel_Text Occurs 1 Times**

  description: **The SPICE Kernel class describes a SPICE file.**
  role: **Concrete**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: **SPICE**
  attribute: **kernel_type** value: **EK, FK, IK, LSK, MK, PCK, SCLK**
  attribute: **offset** value: *value*

- **End** SPICE_Kernel_Text
- **End** File_Area_SPICE_Kernel_Text
- **End** Product_SPICE_Kernel_Text

- **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 that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** Optional

    - **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** Observing_System_Reference_Entry
    - **End** Observing_System_Component
  - **End** Observing_System

  - **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

description: **The observation area consists of attributes that provide 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** Mission_Area

- **Node_Area - Occurs 0 to * Times**

description: **The node area allow the insertion of node specific metadata.**
role: **Concrete**

- **End** Node_Area
attribute: **comment** value: ***value*** ^{Optional}
attribute: **start_date_time** value: ***value***
attribute: **stop_date_time** value: ***value***
attribute: **local_mean_solar_time** value: ***value*** ^{Optional}
attribute: **local_true_solar_time** value: ***value*** ^{Optional}
attribute: **mission_phase_name** value: ***value*** ^{Optional}
attribute: **orbit_number** value: ***value*** ^{Optional}
attribute: **planet_day_number** value: ***value*** ^{Optional}
attribute: **solar_longitude** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_cnt_partition** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_start_count** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_stop_count** value: ***value*** ^{Optional}
- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
role: **Concrete**

- **File Occurs 1 Times**

description: **The File class consists of attributes that describe a file in a data store.**
role: **Concrete**
attribute: **local_identifier** value: ***value*** ^{Optional}
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** File

- **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Image_2D_Display

- **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
  role: **Concrete**
  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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: ***value*** Optional
  attribute: **offset** value: ***value***

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

    - **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: ***value***
  attribute: **offset** value: ***value***

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

  - **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** Special_Constants
  - **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: **_value_**
  attribute: **comment** value: **_value_** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: **_value_**
  attribute: **offset** value: **_value_**
  attribute: **record_bytes** value: **_value_**
  attribute: **records** value: **_value_**

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

- **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** ^{Optional}
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

- **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

    - **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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

- **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Stream_Delimited

- ## 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 that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area_Product

  - ### Cross_Reference_Area_Product Occurs 1 Times

    description: **The cross reference product 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 regisered 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** Bibliographic_Reference

- **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry
    - **End** Observing_System_Component
- **End** Observing_System

- **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

    description: **The observation area consists of attributes that provide 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** Mission_Area

- **Node_Area - Occurs 0 to * Times**

  description: **The node area allow the insertion of node specific metadata.**
  role: **Concrete**

- **End** Node_Area
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **start_date_time** value: ***value***
  attribute: **stop_date_time** value: ***value***
  attribute: **local_mean_solar_time** value: ***value*** ^{Optional}
  attribute: **local_true_solar_time** value: ***value*** ^{Optional}
  attribute: **mission_phase_name** value: ***value*** ^{Optional}
  attribute: **orbit_number** value: ***value*** ^{Optional}
  attribute: **planet_day_number** value: ***value*** ^{Optional}
  attribute: **solar_longitude** value: ***value*** ^{Optional}
  attribute: **spacecraft_clock_cnt_partition** value: ***value*** ^{Optional}
  attribute: **spacecraft_clock_start_count** value: ***value*** ^{Optional}
  attribute: **spacecraft_clock_stop_count** value: ***value*** ^{Optional}
- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

  description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

  - **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

    description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
    role: **Concrete**
    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**
    attribute: **offset** value: ***value***

    - **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** Array_Axis

- **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** Image_2D_Display

- **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
  role: **Concrete**
  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**
attribute: **offset** value: *value*

- **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: ***value*** ^{Optional}
  attribute: **offset** value: ***value***

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* ^{Optional}

attribute: **encoding_type** value: **CHARACTER**
attribute: **external_standard_id** value: ***value***
attribute: **offset** value: ***value***

- **End** Stream_Text

- **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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** Optional
attribute: **encoding_type** value: **BINARY**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

- **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** Special_Constants
  - **End** Table_Binary_Field
  - **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

- **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**

attribute: **local_identifier** value: *value*
attribute: **comment** value: *value* Optional
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: *value*
attribute: **offset** value: *value*
attribute: **record_bytes** value: *value*
attribute: **records** value: *value*

- **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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

      - **End** Table_Character_Grouped_Field
    - **End** Table_Character_Field_Sequence
  - **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Table_Binary

- **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 that identify and name 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

  - **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: **title** value: ***value***
attribute: **description** value: ***value*** ^{Optional}

- **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** Observing_System_Reference_Entry
  - **End** Observing_System_Component
- **End** Observing_System

- **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

description: **The observation area consists of attributes that provide 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** Mission_Area

- **Node_Area - Occurs 0 to * Times**

  description: **The node area allow the insertion of node specific metadata.**
  role: **Concrete**

- **End** Node_Area
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **start_date_time** value: ***value***
  attribute: **stop_date_time** value: ***value***
  attribute: **local_mean_solar_time** value: ***value*** ^{Optional}

- attribute: **local_true_solar_time** value: ***value*** ^{Optional}
- attribute: **mission_phase_name** value: ***value*** ^{Optional}
- attribute: **orbit_number** value: ***value*** ^{Optional}
- attribute: **planet_day_number** value: ***value*** ^{Optional}
- attribute: **solar_longitude** value: ***value*** ^{Optional}
- attribute: **spacecraft_clock_cnt_partition** value: ***value*** ^{Optional}
- attribute: **spacecraft_clock_start_count** value: ***value*** ^{Optional}
- attribute: **spacecraft_clock_stop_count** value: ***value*** ^{Optional}

- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

  description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

  - **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

    description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
    role: **Concrete**
    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**
    attribute: **offset** value: ***value***

    - **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** Array_Axis

    - **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** Image_2D_Display

- **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

    - **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** Array_Axis

    - **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

    - **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: **value**

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
attribute: **name** value: *value* ^{Optional}
attribute: **offset** value: *value*

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: **value**
  attribute: **comment** value: **value** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: **value**
  attribute: **offset** value: **value**

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: **value**
  attribute: **comment** value: **value** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: **value**
  attribute: **offset** value: **value**
  attribute: **record_bytes** value: **value**
  attribute: **records** value: **value**

- **Table_Record_Binary Occurs 1 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** Object_Statistics

    - **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** Special_Constants
  - **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: **value**
  attribute: **comment** value: **value** Optional
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: **value**
  attribute: **offset** value: **value**
  attribute: **record_bytes** value: **value**
  attribute: **records** value: **value**

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

        - **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** ^{Optional}
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

- **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** ^{Optional}
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

- **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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}

- **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Table_Binary_Grouped

- **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 that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry
  - **End** Observing_System_Component
- **End** Observing_System

- **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

  description: **The observation area consists of attributes that provide 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** Mission_Area

  - **Node_Area - Occurs 0 to * Times**

    description: **The node area allow the insertion of node specific metadata.**
    role: **Concrete**

    - **End** Node_Area
      attribute: **comment** value: ***value*** ^{Optional}
      attribute: **start_date_time** value: ***value***
      attribute: **stop_date_time** value: ***value***
      attribute: **local_mean_solar_time** value: ***value*** ^{Optional}
      attribute: **local_true_solar_time** value: ***value*** ^{Optional}
      attribute: **mission_phase_name** value: ***value*** ^{Optional}
      attribute: **orbit_number** value: ***value*** ^{Optional}
      attribute: **planet_day_number** value: ***value*** ^{Optional}
      attribute: **solar_longitude** value: ***value*** ^{Optional}
      attribute: **spacecraft_clock_cnt_partition** value: ***value*** ^{Optional}
      attribute: **spacecraft_clock_start_count** value: ***value*** ^{Optional}
      attribute: **spacecraft_clock_stop_count** value: ***value*** ^{Optional}
- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

  description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**

- **File Occurs 1 Times**

  description: **The File class consists of attributes that describe a file in a data store.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value*** ^{Optional}
  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** File

- **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Image_2D_Display

  - **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element

- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

    - **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** Array_Axis

    - **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: ***value*** Optional
  attribute: **offset** value: ***value***

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: *value*
  attribute: **offset** value: *value*

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: *value*
  attribute: **comment** value: *value* ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: *value*
  attribute: **offset** value: *value*
  attribute: **record_bytes** value: *value*
  attribute: **records** value: *value*

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**

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

  attribute: **comment** value: *value* ^{Optional}

  attribute: **encoding_type** value: **BINARY**

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

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

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

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

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

    - **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** Optional
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

    - **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

- **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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

- **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Table_Character

- **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 that identify and name 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: **data_set_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** Name_Resolution
  - **End** Subject_Area
- **End** Identification_Area_Product

- **Cross_Reference_Area_Product Occurs 1 Times**

  description: **The cross reference product 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 regisered 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** Bibliographic_Reference

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry
    - **End** Observing_System_Component
  - **End** Observing_System

  - **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** Product_Reference_Entry
- **End** Cross_Reference_Area_Product

- **Observation_Area Occurs 1 Times**

description: **The observation area consists of attributes that provide 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** Mission_Area

- **Node_Area - Occurs 0 to * Times**

description: **The node area allow the insertion of node specific metadata.**
role: **Concrete**

- **End** Node_Area

attribute: **comment** value: ***value*** ^{Optional}
attribute: **start_date_time** value: ***value***
attribute: **stop_date_time** value: ***value***
attribute: **local_mean_solar_time** value: ***value*** ^{Optional}
attribute: **local_true_solar_time** value: ***value*** ^{Optional}
attribute: **mission_phase_name** value: ***value*** ^{Optional}
attribute: **orbit_number** value: ***value*** ^{Optional}
attribute: **planet_day_number** value: ***value*** ^{Optional}
attribute: **solar_longitude** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_cnt_partition** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_start_count** value: ***value*** ^{Optional}
attribute: **spacecraft_clock_stop_count** value: ***value*** ^{Optional}

- **End** Observation_Area

- **File_Area_Observational - Occurs 1 to * Times**

description: **The File Area Observational class describes, for an observational product, a file and one or more tagged_data_objects contained within the file.**
role: **Concrete**

- **File Occurs 1 Times**

description: **The File class consists of attributes that describe a file in a data store.**
role: **Concrete**
attribute: **local_identifier** value: ***value*** ^{Optional}
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** File

- **Array_2D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

description: **The Array 2D Image class is an extension of array_base and defines a two dimensional image.**
role: **Concrete**
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**
attribute: **offset** value: ***value***

- **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** Array_Axis

- **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** Image_2D_Display

- **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** Array_Element

- **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** Object_Statistics

- **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** Special_Constants
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Map class is an extension of array_base and defines a two dimensional map.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 2D Spectrum class is an extension of array_base and defines a two dimensional spectrum.**
  role: **Concrete**
  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**
attribute: **offset** value: *value*

- **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** Array_Axis

- **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** Array_Element
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Image class is an extension of array_base and defines a three dimensional image.**
  role: **Concrete**
  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**
  attribute: **offset** value: *value*

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Movie class is an extension of array_base and defines a movie as a set of two dimensional images in a time series.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

  - **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** Array_Element
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times - Base_Class:Array_Base**

  description: **The Array 3D Spectrum class is an extension of array_base and defines a three dimensional spectrum.**
  role: **Concrete**
  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**
  attribute: **offset** value: ***value***

  - **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** Array_Axis

- **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** Array_Element
- **End** Array_3D_Spectrum

- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  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, ISIS, ODL, VICAR**
  attribute: **name** value: ***value*** Optional
  attribute: **offset** value: ***value***

- **End** Header

- **Stream_Delimited - Occurs 0 to * Times**

  description: **The Stream Delimited class defines a simple spreadsheet.**
  role: **Concrete**
  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: **offset** 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

    - **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** Special_Constants
- **End** Stream_Delimited_Field
- **End** Stream_Delimited_Field_Sequence
- **End** Stream_Delimited_Grouped_Sequence
- **End** Stream_Delimited_Record
- **End** Stream_Delimited

- **Stream_Text - Occurs 0 to * Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **external_standard_id** value: ***value***
  attribute: **offset** value: ***value***

- **End** Stream_Text

- **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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary Occurs 1 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** Object_Statistics

  - **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** Special_Constants
  - **End** Table_Binary_Field
- **End** Table_Record_Binary
- **End** Table_Binary

- **Table_Binary_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **BINARY**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Binary_Grouped Occurs 1 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** Table_Binary_Grouped_Bit_Field

- **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** Table_Binary_Grouped_Field
- **End** Table_Binary_Field_Sequence
- **End** Table_Binary_Grouped_Sequence
- **End** Table_Record_Binary_Grouped
- **End** Table_Binary_Grouped

- **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**
attribute: **local_identifier** value: ***value***
attribute: **comment** value: ***value*** ^{Optional}
attribute: **encoding_type** value: **CHARACTER**
attribute: **fields** value: ***value***
attribute: **offset** value: ***value***
attribute: **record_bytes** value: ***value***
attribute: **records** value: ***value***

- **Table_Record_Character Occurs 1 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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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** Object_Statistics

    - **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** Special_Constants
- **End** Table_Character_Field
- **End** Table_Record_Character
- **End** Table_Character

- **Table_Character_Grouped - Occurs 0 to * 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**
  attribute: **local_identifier** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **fields** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **record_bytes** value: ***value***
  attribute: **records** value: ***value***

  - **Table_Record_Character_Grouped Occurs 1 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_Field_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_File_Specification_Name, ASCII_Integer, ASCII_LID, ASCII_LIDVID, ASCII_MD5_Checksum, ASCII_NonNegative_Integer, ASCII_Numeric_Base16, ASCII_Numeric_Base2, 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

- **End** Table_Character_Grouped_Field
- **End** Table_Character_Field_Sequence
- **End** Table_Character_Grouped_Sequence
- **End** Table_Record_Character_Grouped
- **End** Table_Character_Grouped
- **End** File_Area_Observational
- **End** Product_Table_Character_Grouped

- **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 that identify and name 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: **data_set_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** Name_Resolution
    - **End** Subject_Area
  - **End** Identification_Area_Product

  - **Cross_Reference_Area_Context Occurs 1 Times**

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

- **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

  - **End** Context_Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **Target Occurs 1 Times**

  description: **The Target class provides a description of a phyiscal object that is the object of data collection.**
  role: **Concrete**
  attribute: **description** value: ***value*** Optional

  - **End** Target
- **End** Product_Target

- **Product_Text_File**

  description: **The Product Text File consists of a single text file with ASCII character encoding.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area

- **Cross_Reference_Area - Occurs 0 to 1 Times**

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry
      - **End** Observing_System_Component
    - **End** Observing_System

  - **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** Reference_Entry

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

description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area

- **File_Area_Text Occurs 1 Times**

  description: **The File Area Text class describes a file that contains a text stream object.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

  - **Stream_Text Occurs 1 Times**

    description: **The Stream text class defines a text file.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **external_standard_id** value: ***value***
    attribute: **offset** value: ***value***

  - **End** Stream_Text
- **End** File_Area_Text
- **End** Product_Text_File

- **Product_Thumbnail**

  description: **The Product Thumbnail class defines a product consisting of one encoded byte stream digital object.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area

- **Cross_Reference_Area - Occurs 0 to 1 Times**

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry
    - **End** Observing_System_Component
  - **End** Observing_System

  - **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** Reference_Entry

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

  description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area

- **File_Area_Encoded_Image Occurs 1 Times**

  description: **The File Area Encoded Image class describes a file that contains an Encoded Image object.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    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** File

  - **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**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    attribute: **encoding_type** value: **BINARY**
    attribute: **external_standard_id** value: **GIF, JPEG, PDF, TIFF**
    attribute: **offset** value: ***value***

    - **End** Encoded_Image
  - **End** File_Area_Encoded_Image
- **End** Product_Thumbnail

- **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 that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area

- **Cross_Reference_Area_Context Occurs 1 Times**

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

  - **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 instriument_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_data_producer, has_instrument, has_instrument_host, has_investigation , has_node, has_personnel, has_publication, has_resource, has_target**

  - **End** Context_Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area_Context

- **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** Reference_Entry_Generic
  - **End** Update_Entry
- **End** Update
- **End** Product_Update

- **Product_XML_Schema**

  description: **The Product XML Schema consists of a single text file in XML Schema encoding.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area

- **Cross_Reference_Area - Occurs 0 to 1 Times**

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

  - **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: **title** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **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** Observing_System_Reference_Entry
    - **End** Observing_System_Component
  - **End** Observing_System

  - **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** Reference_Entry

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

    description: **The Bibliographic Reference class provides references to documents that are not regisered 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** Bibliographic_Reference
- **End** Cross_Reference_Area

- **File_Area_XML_Schema Occurs 1 Times**

  description: **The File Area XML Schema class describes a file that contains an XML Schema object.**
  role: **Concrete**

  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    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** File

  - **XML_Schema Occurs 1 Times**

    description: **The XML Schema class defines a text stream file containing XML Schema.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **comment** value: ***value*** Optional
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **external_standard_id** value: **XML_Schema**
    attribute: **offset** value: ***value***

  - **End** XML_Schema
- **End** File_Area_XML_Schema
- **End** Product_XML_Schema

- **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 that identify and name 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: **data_set_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** Name_Resolution
- **End** Subject_Area
- **End** Identification_Area

- **File Occurs 1 Times**

  description: **The File class consists of attributes that describe a file in a data store.**
  role: **Concrete**
  attribute: **local_identifier** value: *value* ^{Optional}
  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** File
  attribute: **container_type** value: **GZIP, LZIP, TAR, ZIP**

- **Cross_Reference_Area_Generic - Occurs 0 to 1 Times**

  description: **The cross reference area generic 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 regisered 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** Bibliographic_Reference

  - **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** Reference_Entry_Generic
- **End** Cross_Reference_Area_Generic

- **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** Zipped_Member_Entry
- **End** Product_Zipped

- **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** Rings_Prod_Info

- **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** Telemetry_Parameters

9. **PDS4 Data Type Definitions Mon Apr 04 17:36:21 PDT 2011**

Generated from the PDS4 Information Model Version 0.3.0.0.e

- **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_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: **32**
xml_schema_base_type: **xsd:string**
character_encoding: **UTF-8**

- **Data Type:ASCII_Mask**

description: **The ASCII_Mask class indicates a binary mask using either binary, octal, or hexadecimal notation.**
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_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_Numeric_Base16**

description: **The ASCII Numeric Base16 class indicates a ASCII encoded string constrained to hexadecimal digits.**
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_Numeric_Base2**

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

10. **Attribute and Class Indices**

11. **Attribute Index**

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

- **abstract_desc**
- **acknowledgement_text**
- **actor_name**
- **affiliation_type**
- **alternate_id**
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