PDS4 Data Dictionary - Abridged - V.0.7.0.0.j

PDS4 Data Design Working Group

Version 0.7.0.0.j - Wed Apr 11 17:26:38 PDT 2012

Generated from the PDS4 Information Model Version 0.7.0.0.j

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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. For example, 'color' and 'length' are possible attributes.
- A *class* is a set of attributes (including a name) which defines a family. A class is generic — a template from which individual members of the family may be constructed.
- A *conceptual object* is an object which is intangible (and, because it is intangible, does not fit into a digital archive). Examples of 'conceptual objects' include the Cassini mission and NASA's strategic plan for solar system exploration. Note that a PDF describing the Cassini mission is a digital object, not a conceptual object (nor a component of a conceptual object).
- 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 which is real data — for example, a binary image of a redwood tree or an ASCII table of atmospheric composition versus altitude.
- *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 which is physical or tangible (and, therefore, does not itself fit into a digital archive). Examples of 'physical objects' include the planet Saturn and the Venus Express magnetometer. Note that an ASCII file describing Saturn is a digital object, not a physical object (nor a component of a physical object).
- A *resource* is the target (referent) of any Uniform Resource Identifier; the thing to which a URI points.

7. **PDS4 Class Definitions - Wed Apr 11 17:26:38 PDT 2012**

Generated from the PDS4 Information Model Version 0.7.0.0.j

- **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**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: *value* Optional
        attribute: **alternate_title** value: *value* Optional
        attribute: **comment** value: *value* Optional
        - **End** Alias
      - **End** Alias_List
    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**
      attribute: **author_list** value: *value* Optional
      attribute: **editor_list** value: *value* Optional
      attribute: **publication_year** value: *value*
      attribute: **keywords** value: *value* Optional
      attribute: **description** value: *value*
      - **End** Citation_Information
    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**

      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**

role: **Concrete**
                        attribute: **modification_date** value: ***value***
                        attribute: **version_id** value: ***value***
                        attribute: **description** value: ***value***
                - **End** Modification_Detail
        - **End** Modification_History
            attribute: **logical_identifier** value: ***value***
            attribute: **version_id** value: ***value***
            attribute: **title** value: ***value***
            attribute: **information_model_version** value: **0.7.0.0.j**
            attribute: **product_class** value: ***value***
    - **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**
    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***
    attribute: **description** value: ***value*** Optional
  - **End** Volume_PDS3

  - **Reference_List - Occurs 0 to 1 Times**

    description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
    role: **Concrete**

        - **Internal_Reference - Occurs 0 to * Times**

        description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
        role: **Concrete**
        attribute: **lid_reference** value: ***value*** Optional
        attribute: **lidvid_reference** value: ***value*** Optional
        attribute: **reference_type** value: ***value***
        attribute: **comment** value: ***value*** Optional
      - **End** Internal_Reference

      - **External_Reference - Occurs 0 to * Times**

        description: **The External_Reference class is used to reference a source outside the PDS registry system.**
        role: **Concrete**
        attribute: **reference_text** value: ***value***
        attribute: **description** value: ***value*** Optional
      - **End** External_Reference
    - **End** Reference_List
  - **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**

          - **Alias_List - Occurs 0 to 1 Times**

            description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
            role: **Concrete**

              - **Alias - Occurs 1 to * Times**

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

attribute: **alternate_id** value: **_value_** ^{Optional}

attribute: **alternate_title** value: **_value_** ^{Optional}

attribute: **comment** value: **_value_** ^{Optional}
- **End** Alias
- **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**

  attribute: **author_list** value: **_value_** ^{Optional}

  attribute: **editor_list** value: **_value_** ^{Optional}
  attribute: **publication_year** value: **_value_**
  attribute: **keywords** value: **_value_** ^{Optional}
  attribute: **description** value: **_value_**
  - **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**

  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**
    attribute: **modification_date** value: **_value_**
    attribute: **version_id** value: **_value_**
    attribute: **description** value: **_value_**
    - **End** Modification_Detail
  - **End** Modification_History
  attribute: **logical_identifier** value: **_value_**
  attribute: **version_id** value: **_value_**
  attribute: **title** value: **_value_**
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: **_value_**
- **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: **volume_series_name** value: **_value_**
  attribute: **volume_set_id** value: **_value_**
  attribute: **volume_set_name** value: **_value_**
  attribute: **volumes** value: **_value_**
  attribute: **description** value: **_value_** ^{Optional}
- **End** Volume_Set_PDS3

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**

    attribute: **lid_reference** value: **_value_** ^{Optional}

    attribute: **lidvid_reference** value: **_value_** ^{Optional}
    attribute: **reference_type** value: **_value_**
    attribute: **comment** value: **_value_** ^{Optional}
  - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**

- attribute: **reference_text** value: *value*
  - attribute: **description** value: *value* Optional
  - **End** External_Reference
- **End** Reference_List
- **End** Collection_Volume_Set_PDS3

- **Delivery_Manifest**

  description: **The Delivery_Manifest class defines a two column table for file references. The table structure is compatible with the output from an MD5 checksum utility.**
  role: **Concrete**
  attribute: **local_identifier** value: *value* Optional
  attribute: **reference_type** value: **has_member**
  attribute: **offset** value: *value*
  attribute: **records** value: *value*
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **description** value: *value* Optional

  - **Record_Character Occurs 1 Times**

    description: **The Record_Character class is a component of the table class and defines a record of the table.**
    role: **Concrete**
    attribute: **record_length** value: *value*
    attribute: **fields** value: *value*

    - **Field_Character - Occurs 1 to * Times**

      description: **The Field_Character class defines a field of the record.**
      role: **Concrete**
      attribute: **name** value: *value*
      attribute: **field_number** value: *value* Optional
      attribute: **field_location** value: *value*
      attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: *value* Optional
      attribute: **field_format** value: *value* Optional
      attribute: **unit** value: *value* Optional
      attribute: **scaling_factor** value: *value* Optional
      attribute: **value_offset** value: *value* Optional
      attribute: **description** value: *value* Optional

      - **Field_Statistics - Occurs 0 to 1 Times**

        description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
        role: **Concrete**
        attribute: **local_identifier** value: *value* Optional
        attribute: **maximum** value: *value* Optional
        attribute: **minimum** value: *value* Optional
        attribute: **mean** value: *value* Optional
        attribute: **standard_deviation** value: *value* Optional
        attribute: **median** value: *value* Optional
        attribute: **description** value: *value* Optional
      - **End** Field_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: **saturated_constant** value: *value* Optional
        attribute: **missing_constant** value: *value* Optional
        attribute: **error_constant** value: *value* Optional
        attribute: **invalid_constant** value: *value* Optional
        attribute: **unknown_constant** value: *value* Optional
        attribute: **not_applicable_constant** value: *value* Optional
      - **End** Special_Constants
    - **End** Field_Character
    - **Group_Field_Character - Occurs 1 to * Times**

description: **The Group_Field_Character class allows a group of table fields.**
role: **Concrete**
attribute: **repetitions** value: *value*
attribute: **group_location** value: *value*
attribute: **fields** value: *value*
attribute: **group_length** value: *value*

- **Field_Character - Occurs 0 to * Times**

  description: **The Field_Character class defines a field of the record.**
  role: **Concrete**
  attribute: **name** value: *value*
  attribute: **field_number** value: *value* Optional
  attribute: **field_location** value: *value*
  attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: *value* Optional
  attribute: **field_format** value: *value* Optional
  attribute: **unit** value: *value* Optional
  attribute: **scaling_factor** value: *value* Optional
  attribute: **value_offset** value: *value* Optional
  attribute: **description** value: *value* Optional

  - **Field_Statistics - Occurs 0 to 1 Times**

    description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* Optional
    attribute: **maximum** value: *value* Optional
    attribute: **minimum** value: *value* Optional
    attribute: **mean** value: *value* Optional
    attribute: **standard_deviation** value: *value* Optional
    attribute: **median** value: *value* Optional
    attribute: **description** value: *value* Optional
  - **End** Field_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: **saturated_constant** value: *value* Optional
    attribute: **missing_constant** value: *value* Optional
    attribute: **error_constant** value: *value* Optional
    attribute: **invalid_constant** value: *value* Optional
    attribute: **unknown_constant** value: *value* Optional
    attribute: **not_applicable_constant** value: *value* Optional
  - **End** Special_Constants
  - **End** Field_Character
- **End** Group_Field_Character
- **End** Record_Character
- **End** Delivery_Manifest

- **Detector**

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

- **Header**

  description: **The Header class describes a data object header.**
  role: **Concrete**
  attribute: **name** value: *value* Optional

attribute: **local_identifier** value: ***value*** ^{Optional}
attribute: **bytes** value: ***value***
attribute: **offset** value: ***value***
attribute: **external_standard_id** value: **ASCII, FITS, ISIS2, ISIS3, ISIS_HISTORY, ODL, PDS1, PDS2, PDS3, TIFF, VICAR**
attribute: **encoding_type** value: ***value***
attribute: **description** value: ***value*** ^{Optional}

- **End** Header

- **Header_Binary**

  description: **The Header Binary class describes a data object header.**
  role: **Concrete**
  attribute: **name** value: ***value*** ^{Optional}
  attribute: **local_identifier** value: ***value*** ^{Optional}
  attribute: **bytes** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **external_standard_id** value: **TIFF**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: ***value*** ^{Optional}
- **End** Header_Binary

- **Ingest_DD**

  description: **The Ingest_DD class provides a form for collecting class and attribute definitions for ingesting into the data dictionary database.**
  role: **Concrete**
  attribute: **full_name** value: ***value***
  attribute: **local_identifier** value: ***value***
  attribute: **last_modification_date_time** value: ***value***
  attribute: **pds4_merge_flag** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}

  - **DD_Attribute - Occurs 1 to * Times**

    description: **The DD_Attribute class defines an attribute for a data dictionary.**
    role: **Concrete**
    attribute: **name** value: ***value***
    attribute: **version_id** value: ***value***
    attribute: **local_identifier** value: ***value***
    attribute: **steward_id** value: **atm, geo, img, naif, ops, pds, ppi, rings, rs, sbn** ^{Optional}
    attribute: **name_space_id** value: ***value*** ^{Optional}
    attribute: **submitter_id** value: ***value*** ^{Optional}
    attribute: **definition** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}

    - **Terminological_Entry - Occurs 0 to * Times**

      description: **The terminological_entry class provides the name (designation) and definition of the attribute in a specified natural language.**
      role: **Concrete**
      attribute: **name** value: ***value***
      attribute: **definition** value: ***value***
      attribute: **language** value: **English**
      attribute: **preferred_flag** value: ***value***

      - **External_Reference_Extended - Occurs 0 to * Times**

        description: **The External_Reference_Extended class is used to reference a source outside the PDS registry system. This extension is used in the local data dictionary.**
        role: **Concrete**
        attribute: **name** value: ***value*** ^{Optional}
        attribute: **url** value: ***value*** ^{Optional}
        attribute: **reference_text** value: ***value***
        attribute: **description** value: ***value*** ^{Optional}
      - **End** External_Reference_Extended
    - **End** Terminological_Entry

    - **DD_Value_Domain - Occurs 0 to 1 Times**

      description: **The DD_Value_Domain class defines the value domain for a data dictionary attribute.**
      role: **Concrete**
      attribute: **enumeration_flag** value: ***value***
      attribute: **specified_unit_id** value: ***value*** ^{Optional}
      attribute: **value_data_type** value: **ASCII_AnyURI, ASCII_Boolean, 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_type** value: **UnitOfMeasure_AmountOfSubstance, UnitOfMeasure_Angle, UnitOfMeasure_AngularVelocity, UnitOfMeasure_Area, UnitOfMeasure_Frequency, UnitOfMeasure_Length, UnitOfMeasure_MapScale, UnitOfMeasure_Mass, UnitOfMeasure_Misc, UnitOfMeasure_None, UnitOfMeasure_OpticalPathLength, UnitOfMeasure_Pressure, UnitOfMeasure_Radiance, UnitOfMeasure_Rates, UnitOfMeasure_SolidAngle, UnitOfMeasure_Storage, UnitOfMeasure_Temperature, UnitOfMeasure_Time, UnitOfMeasure_Velocity, UnitOfMeasure_Voltage, UnitOfMeasure_Volume** Optional

- **DD_Permissible_Value - Occurs 0 to * Times**

  description: **The DD_Permissible_Value class lists permissible values and their meanings.**
  role: **Concrete**
  attribute: **value** value: ***value***
  attribute: **value_meaning** value: ***value*** Optional
  attribute: **value_begin_date** value: ***value***
  attribute: **value_end_date** value: ***value***
  - **End** DD_Permissible_Value
- **End** DD_Value_Domain
- **End** DD_Attribute

- **DD_Class - Occurs 0 to * Times**

  description: **The DD_Class class defines a user class, a collection of attributes in a data dictionary.**
  role: **Concrete**
  attribute: **name** value: ***value***
  attribute: **version_id** value: ***value*** Optional
  attribute: **local_identifier** value: ***value***
  attribute: **steward_id** value: **atm, geo, img, naif, ops, pds, ppi, rings, rs, sbn** Optional
  attribute: **name_space_id** value: ***value*** Optional
  attribute: **submitter_id** value: ***value*** Optional
  attribute: **definition** value: ***value*** Optional

  - **DD_Association - Occurs 0 to * Times**

    description: **The DD_Association class defines the association between two classes or a class and an attribute in a data dictionary.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value***
    attribute: **reference_type** value: **attribute_of, component_of, extension_of, restriction_of, subclass_of**
    attribute: **constant_value** value: ***value*** Optional
    attribute: **maximum_occurrences** value: ***value***
    attribute: **minimum_occurrences** value: ***value***
    - **End** DD_Association

  - **Terminological_Entry - Occurs 0 to * Times**

    description: **The terminological_entry class provides the name (designation) and definition of the attribute in a specified natural language.**
    role: **Concrete**
    attribute: **name** value: ***value***
    attribute: **definition** value: ***value***
    attribute: **language** value: **English**
    attribute: **preferred_flag** value: ***value***

    - **External_Reference_Extended - Occurs 0 to * Times**

      description: **The External_Reference_Extended class is used to reference a source outside the PDS registry system. This extension is used in the local data dictionary.**
      role: **Concrete**
      attribute: **name** value: ***value*** Optional
      attribute: **url** value: ***value*** Optional
      attribute: **reference_text** value: ***value***
      attribute: **description** value: ***value*** Optional
      - **End** External_Reference_Extended
    - **End** Terminological_Entry
  - **End** DD_Class
- **End** Ingest_DD

- **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**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: ***value*** Optional
        attribute: **alternate_title** value: ***value*** Optional
        attribute: **comment** value: ***value*** Optional
      - **End** Alias
    - **End** Alias_List

    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**
      attribute: **author_list** value: ***value*** Optional
      attribute: **editor_list** value: ***value*** Optional
      attribute: **publication_year** value: ***value***
      attribute: **keywords** value: ***value*** Optional
      attribute: **description** value: ***value***
    - **End** Citation_Information

    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**

      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
        role: **Concrete**
        attribute: **modification_date** value: ***value***
        attribute: **version_id** value: ***value***
        attribute: **description** value: ***value***
      - **End** Modification_Detail
    - **End** Modification_History
      attribute: **logical_identifier** value: ***value***
      attribute: **version_id** value: ***value***
      attribute: **title** value: ***value***
      attribute: **information_model_version** value: **0.7.0.0.j**
      attribute: **product_class** value: ***value***
  - **End** Identification_Area

  - **DD_Attribute_Full Occurs 1 Times**

    description: **The DD_Attribute_Full class provides a more complete definition of an attribute in the data dictioonary.**
    role: **Concrete**
    attribute: **name** value: ***value***
    attribute: **version_id** value: ***value***
    attribute: **class_name** value: ***value***
    attribute: **local_identifier** value: ***value***
    attribute: **steward_id** value: **atm, geo, img, naif, ops, pds, ppi, rings, rs, sbn**
    attribute: **name_space_id** value: ***value***
    attribute: **submitter_id** value: ***value***
    attribute: **definition** value: ***value***
    attribute: **attribute_concept** value: **ADDRESS, ANGLE, ATTRIBUTE, BIT, CHECKSUM, COLLECTION, CONSTANT, COSINE, COUNT, DELIMITER, DESCRIPTION, DEVIATION, DIRECTION, DISTANCE, DOI, DURATION, FACTOR, FLAG, FORMAT, GROUP, HOME, ID, LATITUDE, LENGTH, LIST, LOCATION, LOGICAL, LONGITUDE, MASK, MAXIMUM, MEAN, MEDIAN, MINIMUM, NAME, NOTE, NUMBER, OFFSET, ORDER, PARALLEL, PASSWORD,**

PATH, PATTERN, PIXEL, QUATERNION, RADIUS, RATIO, REFERENCE, RESOLUTION, ROLE, ROTATION, SCALE, SEQUENCE, SET, SIZE, STATUS, SUMMARY, SYNTAX, TEMPERATURE, TEXT, TITLE, TYPE, UNIT, UNKNOWN, VALUE, VECTOR**

attribute: **comment** value: **value** Optional
attribute: **registered_by** value: **value**
attribute: **registration_authority_id** value: **0001_NASA_PDS_1**

- **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: **name** value: **value**
  attribute: **definition** value: **value**
  attribute: **language** value: **English**
  attribute: **preferred_flag** value: **value**

  - **External_Reference_Extended - Occurs 0 to * Times**

    description: **The External_Reference_Extended class is used to reference a source outside the PDS registry system. This extension is used in the local data dictionary.**
    role: **Concrete**
    attribute: **name** value: **value** Optional
    attribute: **url** value: **value** Optional
    attribute: **reference_text** value: **value**
    attribute: **description** value: **value** Optional
  - **End** External_Reference_Extended
- **End** Terminological_Entry

- **DD_Value_Domain_Full - Occurs 0 to 1 Times**

  description: **The DD_Value_Domain_Full class provides a more complete definition of a attribute's value domain.**
  role: **Concrete**
  attribute: **enumeration_flag** value: **value**
  attribute: **specified_unit_id** value: **value** Optional
  attribute: **value_data_type** value: **ASCII_AnyURI, ASCII_Boolean, 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_type** value: **UnitOfMeasure_AmountOfSubstance, UnitOfMeasure_Angle, UnitOfMeasure_AngularVelocity, UnitOfMeasure_Area, UnitOfMeasure_Frequency, UnitOfMeasure_Length, UnitOfMeasure_MapScale, UnitOfMeasure_Mass, UnitOfMeasure_Misc, UnitOfMeasure_None, UnitOfMeasure_OpticalPathLength, UnitOfMeasure_Pressure, UnitOfMeasure_Radiance, UnitOfMeasure_Rates, UnitOfMeasure_SolidAngle, UnitOfMeasure_Storage, UnitOfMeasure_Temperature, UnitOfMeasure_Time, UnitOfMeasure_Velocity, UnitOfMeasure_Voltage, UnitOfMeasure_Volume** Optional
  attribute: **conceptual_domain** value: **BOOLEAN, INTEGER, NAME, NUMERIC, REAL, SHORT_STRING, TEXT, TIME, TYPE, UNKNOWN**

  - **DD_Permissible_Value - Occurs 0 to * Times**

    description: **The DD_Permissible_Value class lists permissible values and their meanings.**
    role: **Concrete**
    attribute: **value** value: **value**
    attribute: **value_meaning** value: **value** Optional
    attribute: **value_begin_date** value: **value**
    attribute: **value_end_date** value: **value**
  - **End** DD_Permissible_Value
- **End** DD_Value_Domain_Full
- **End** DD_Attribute_Full

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry**

system.
role: **Concrete**

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

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

attribute: **reference_type** value: ***value***

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

- **End** Internal_Reference

- **External_Reference - Occurs 0 to * Times**

  description: **The External_Reference class is used to reference a source outside the PDS registry system.**
  role: **Concrete**

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

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

- **End** External_Reference
- **End** Reference_List
- **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 Occurs 1 Times**

  description: **The identification area consists of attributes that identify and name an object.**
  role: **Concrete**

  - **Alias_List - Occurs 0 to 1 Times**

    description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
    role: **Concrete**

    - **Alias - Occurs 1 to * Times**

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

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

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

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

    - **End** Alias
  - **End** Alias_List

  - **Citation_Information - Occurs 0 to 1 Times**

    description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
    role: **Concrete**

    attribute: **author_list** value: ***value*** Optional

    attribute: **editor_list** value: ***value*** Optional

    attribute: **publication_year** value: ***value***

    attribute: **keywords** value: ***value*** Optional

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

  - **End** Citation_Information

  - **Modification_History - Occurs 0 to 1 Times**

    description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
    role: **Concrete**

    - **Modification_Detail Occurs 1 Times**

      description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
      role: **Concrete**

      attribute: **modification_date** value: ***value***

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

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

    - **End** Modification_Detail
  - **End** Modification_History

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

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

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

  attribute: **information_model_version** value: **0.7.0.0.j**

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

- **End** Identification_Area
- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**
  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: *value* Optional
    attribute: **lidvid_reference** value: *value* Optional
    attribute: **reference_type** value: *value*
    attribute: **comment** value: *value* Optional
    - **End** Internal_Reference
  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: *value*
    attribute: **description** value: *value* Optional
    - **End** External_Reference
- **End** Reference_List
- **File_Area_Browse Occurs 1 Times**

  description: **The File Area Browse class describes a file and one or more tagged_data_objects contained within the file.**
  role: **Concrete**
  - **Array_2D_Image - Occurs 0 to * Times**

    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* Optional
    attribute: **offset** value: *value*
    attribute: **axes** value: **2**
    attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
    attribute: **encoding_type** value: **BINARY**
    attribute: **description** value: *value* Optional
    - **Display_2D_Image - Occurs 0 to 1 Times**
    - **Element_Array Occurs 1 Times**

      description: **The Display_2D_Image class provides attributes to enable the display of a 2 dimensional image.**
      description: **The Element Array class is used as a component of the array class and defines an element of the array.**
      role: **Concrete**
      role: **Concrete**
      attribute: **line_display_direction** value: **DOWN, UP**
      attribute: **sample_display_direction** value: **RIGHT**
      attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
      attribute: **unit** value: *value* Optional
      attribute: **scaling_factor** value: *value* Optional
      attribute: **value_offset** value: *value* Optional
      - **End** Display_2D_Image
      - **End** Element_Array
    - **Axis_Array Occurs 2 Times**

      description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
      role: **Concrete**
      attribute: **axis_name** value: *value*
      attribute: **sequence_number** value: *value*
      attribute: **elements** value: *value*
      attribute: **unit** value: *value* Optional
      - **Band_Bin_Set - Occurs 0 to 1 Times**

description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging class.**
role: **Concrete**
- **End** Band_Bin_Set
- **End** Axis_Array

- **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: **saturated_constant** value: **value** Optional

attribute: **missing_constant** value: **value** Optional

attribute: **error_constant** value: **value** Optional

attribute: **invalid_constant** value: **value** Optional

attribute: **unknown_constant** value: **value** Optional

attribute: **not_applicable_constant** value: **value** Optional
- **End** Special_Constants

- **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** Optional

attribute: **maximum** value: **value** Optional

attribute: **minimum** value: **value** Optional

attribute: **mean** value: **value** Optional

attribute: **standard_deviation** value: **value** Optional

attribute: **bit_mask** value: **value** Optional

attribute: **median** value: **value** Optional

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

attribute: **maximum_scaled_value** value: **value** Optional

attribute: **minimum_scaled_value** value: **value** Optional

attribute: **description** value: **value** Optional
- **End** Object_Statistics
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times**

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** Optional
attribute: **offset** value: **value**
attribute: **axes** value: **2**
attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
attribute: **encoding_type** value: **BINARY**
attribute: **description** value: **value** Optional

- **Element_Array Occurs 1 Times**

description: **The Element Array class is used as a component of the array class and defines an element of the array.**
role: **Concrete**
attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
attribute: **unit** value: **value** Optional

attribute: **scaling_factor** value: **value** Optional

attribute: **value_offset** value: **value** Optional
- **End** Element_Array

- **Axis_Array Occurs 2 Times**

description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
role: **Concrete**
attribute: **axis_name** value: **value**
attribute: **sequence_number** value: **value**
attribute: **elements** value: **value**
attribute: **unit** value: **value** Optional

- **Band_Bin_Set - Occurs 0 to 1 Times**

description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging**

        class.
        role: **Concrete**
- **End** Band_Bin_Set
- **End** Axis_Array

- **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: **saturated_constant** value: ***value*** Optional

  attribute: **missing_constant** value: ***value*** Optional

  attribute: **error_constant** value: ***value*** Optional

  attribute: **invalid_constant** value: ***value*** Optional

  attribute: **unknown_constant** value: ***value*** Optional

  attribute: **not_applicable_constant** value: ***value*** Optional
- **End** Special_Constants

- **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*** Optional

  attribute: **maximum** value: ***value*** Optional

  attribute: **minimum** value: ***value*** Optional

  attribute: **mean** value: ***value*** Optional

  attribute: **standard_deviation** value: ***value*** Optional

  attribute: **bit_mask** value: ***value*** Optional

  attribute: **median** value: ***value*** Optional

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

  attribute: **maximum_scaled_value** value: ***value*** Optional

  attribute: **minimum_scaled_value** value: ***value*** Optional

  attribute: **description** value: ***value*** Optional
- **End** Object_Statistics
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times**

  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*** Optional
  attribute: **offset** value: ***value***
  attribute: **axes** value: **2**
  attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: ***value*** Optional

  - **Element_Array Occurs 1 Times**

    description: **The Element Array class is used as a component of the array class and defines an element of the array.**
    role: **Concrete**
    attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
    attribute: **unit** value: ***value*** Optional

    attribute: **scaling_factor** value: ***value*** Optional

    attribute: **value_offset** value: ***value*** Optional
  - **End** Element_Array

  - **Axis_Array Occurs 2 Times**

    description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
    role: **Concrete**
    attribute: **axis_name** value: ***value***
    attribute: **sequence_number** value: ***value***
    attribute: **elements** value: ***value***
    attribute: **unit** value: ***value*** Optional

    - **Band_Bin_Set - Occurs 0 to 1 Times**

      description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging**

- **class.**
  role: **Concrete**
  - **End** Band_Bin_Set
  - **End** Axis_Array
- **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: **saturated_constant** value: **_value_** Optional

  attribute: **missing_constant** value: **_value_** Optional

  attribute: **error_constant** value: **_value_** Optional

  attribute: **invalid_constant** value: **_value_** Optional

  attribute: **unknown_constant** value: **_value_** Optional

  attribute: **not_applicable_constant** value: **_value_** Optional
  - **End** Special_Constants
- **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_** Optional

  attribute: **maximum** value: **_value_** Optional

  attribute: **minimum** value: **_value_** Optional

  attribute: **mean** value: **_value_** Optional

  attribute: **standard_deviation** value: **_value_** Optional

  attribute: **bit_mask** value: **_value_** Optional

  attribute: **median** value: **_value_** Optional

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

  attribute: **maximum_scaled_value** value: **_value_** Optional

  attribute: **minimum_scaled_value** value: **_value_** Optional

  attribute: **description** value: **_value_** Optional
  - **End** Object_Statistics
- **End** Array_2D_Spectrum
- **Array_3D_Image - Occurs 0 to * Times**

  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_** Optional
  attribute: **offset** value: **_value_**
  attribute: **axes** value: **3**
  attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: **_value_** Optional
  - **Element_Array Occurs 1 Times**

    description: **The Element Array class is used as a component of the array class and defines an element of the array.**
    role: **Concrete**
    attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
    attribute: **unit** value: **_value_** Optional

    attribute: **scaling_factor** value: **_value_** Optional

    attribute: **value_offset** value: **_value_** Optional
    - **End** Element_Array
  - **Axis_Array Occurs 3 Times**

    description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
    role: **Concrete**
    attribute: **axis_name** value: **_value_**
    attribute: **sequence_number** value: **_value_**
    attribute: **elements** value: **_value_**
    attribute: **unit** value: **_value_** Optional
    - **Band_Bin_Set - Occurs 0 to 1 Times**

      description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging**

- **class.**
  role: **Concrete**
  - **End** Band_Bin_Set
- **End** Axis_Array
- **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: **saturated_constant** value: ***value*** Optional

  attribute: **missing_constant** value: ***value*** Optional

  attribute: **error_constant** value: ***value*** Optional

  attribute: **invalid_constant** value: ***value*** Optional

  attribute: **unknown_constant** value: ***value*** Optional

  attribute: **not_applicable_constant** value: ***value*** Optional
  - **End** Special_Constants
- **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*** Optional

  attribute: **maximum** value: ***value*** Optional

  attribute: **minimum** value: ***value*** Optional

  attribute: **mean** value: ***value*** Optional

  attribute: **standard_deviation** value: ***value*** Optional

  attribute: **bit_mask** value: ***value*** Optional

  attribute: **median** value: ***value*** Optional

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

  attribute: **maximum_scaled_value** value: ***value*** Optional

  attribute: **minimum_scaled_value** value: ***value*** Optional

  attribute: **description** value: ***value*** Optional
  - **End** Object_Statistics
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times**

  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*** Optional
  attribute: **offset** value: ***value***
  attribute: **axes** value: **3**
  attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: ***value*** Optional
  - **Element_Array Occurs 1 Times**

    description: **The Element Array class is used as a component of the array class and defines an element of the array.**
    role: **Concrete**
    attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
    attribute: **unit** value: ***value*** Optional

    attribute: **scaling_factor** value: ***value*** Optional

    attribute: **value_offset** value: ***value*** Optional
    - **End** Element_Array
  - **Axis_Array Occurs 3 Times**

    description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
    role: **Concrete**
    attribute: **axis_name** value: ***value***
    attribute: **sequence_number** value: ***value***
    attribute: **elements** value: ***value***
    attribute: **unit** value: ***value*** Optional
    - **Band_Bin_Set - Occurs 0 to 1 Times**

      description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging**

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class.
role: **Concrete**
- **End** Band_Bin_Set
- **End** Axis_Array

- **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: **saturated_constant** value: **value** ^{Optional}

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

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

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

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

  attribute: **not_applicable_constant** value: **value** ^{Optional}
- **End** Special_Constants

- **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** ^{Optional}

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

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

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

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

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

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

  attribute: **md5_checksum** value: **value** ^{Optional}

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

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

  attribute: **description** value: **value** ^{Optional}
- **End** Object_Statistics
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times**

  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** ^{Optional}
  attribute: **offset** value: **value**
  attribute: **axes** value: **3**
  attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: **value** ^{Optional}

  - **Element_Array Occurs 1 Times**

    description: **The Element Array class is used as a component of the array class and defines an element of the array.**
    role: **Concrete**
    attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
    attribute: **unit** value: **value** ^{Optional}

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

    attribute: **value_offset** value: **value** ^{Optional}
  - **End** Element_Array

  - **Axis_Array Occurs 3 Times**

    description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
    role: **Concrete**
    attribute: **axis_name** value: **value**
    attribute: **sequence_number** value: **value**
    attribute: **elements** value: **value**
    attribute: **unit** value: **value** ^{Optional}

    - **Band_Bin_Set - Occurs 0 to 1 Times**

      description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging**

- **class.**
        - role: **Concrete**
    - **End** Band_Bin_Set
  - **End** Axis_Array
- **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: **saturated_constant** value: ***value*** Optional

  attribute: **missing_constant** value: ***value*** Optional

  attribute: **error_constant** value: ***value*** Optional

  attribute: **invalid_constant** value: ***value*** Optional

  attribute: **unknown_constant** value: ***value*** Optional

  attribute: **not_applicable_constant** value: ***value*** Optional
  - **End** Special_Constants
- **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*** Optional

  attribute: **maximum** value: ***value*** Optional

  attribute: **minimum** value: ***value*** Optional

  attribute: **mean** value: ***value*** Optional

  attribute: **standard_deviation** value: ***value*** Optional

  attribute: **bit_mask** value: ***value*** Optional

  attribute: **median** value: ***value*** Optional

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

  attribute: **maximum_scaled_value** value: ***value*** Optional

  attribute: **minimum_scaled_value** value: ***value*** Optional

  attribute: **description** value: ***value*** Optional
  - **End** Object_Statistics
- **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*** Optional
  attribute: **offset** value: ***value***
  attribute: **external_standard_id** value: **GIF, JPEG, PDF, PNG, TIFF**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: ***value*** Optional
- **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*** Optional
  attribute: **offset** value: ***value***
  attribute: **external_standard_id** value: **PDF, PDF-A**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: ***value*** Optional
- **End** File_PDF
- **Header - Occurs 0 to * Times**

  description: **The Header class describes a data object header.**
  role: **Concrete**

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

  attribute: **local_identifier** value: ***value*** Optional
  attribute: **bytes** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **external_standard_id** value: **ASCII, FITS, ISIS2, ISIS3, ISIS_HISTORY, ODL, PDS1, PDS2, PDS3, TIFF, VICAR**
  attribute: **encoding_type** value: ***value***
  attribute: **description** value: ***value*** Optional
- **End** Header
- **Header_Binary - Occurs 0 to * Times**

description: **The Header Binary class describes a data object header.**
role: **Concrete**
attribute: **name** value: *value* Optional
attribute: **local_identifier** value: *value* Optional
attribute: **bytes** value: *value*
attribute: **offset** value: *value*
attribute: **external_standard_id** value: **TIFF**
attribute: **encoding_type** value: **BINARY**
attribute: **description** value: *value* Optional
- **End** Header_Binary

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

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

- **Table_Binary - Occurs 0 to * Times**

  description: **The Table Binary class is an extension of table base and defines a simple binary table.**
  role: **Concrete**
  attribute: **local_identifier** value: *value* Optional
  attribute: **offset** value: *value*
  attribute: **records** value: *value*
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: *value* Optional

  - **Uniformly_Sampled - Occurs 0 to 1 Times**

    description: **The Uniformly_Sampled class provdes parameters for a uniformly sampled table.**
    role: **Concrete**
    attribute: **sampling_parameter_name** value: *value*
    attribute: **sampling_parameter_interval** value: *value*
    attribute: **sampling_parameter_unit** value: *value*
    attribute: **first_sampling_parameter_value** value: *value*
    attribute: **last_sampling_parameter_value** value: *value*
    attribute: **sampling_parameter_scale** value: **EXPONENTIAL, LINEAR, LOGARITHMIC** Optional
  - **End** Uniformly_Sampled

  - **Record_Binary Occurs 1 Times**

    description: **The Record_Binary class is a component of the table class and defines a record of the table.**
    role: **Concrete**
    attribute: **record_length** value: *value*
    attribute: **fields** value: *value*

    - **Field_Binary - Occurs 1 to * Times**

      description: **The Field_Binary class defines a field of the record.**
      role: **Concrete**
      attribute: **name** value: *value*
      attribute: **field_number** value: *value* Optional
      attribute: **field_location** value: *value*
      attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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, ComplexLSB16, ComplexLSB8, ComplexMSB16, ComplexMSB8, IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
      attribute: **field_length** value: *value* Optional
      attribute: **field_format** value: *value* Optional
      attribute: **unit** value: *value* Optional

attribute: **scaling_factor** value: ***value*** Optional

attribute: **value_offset** value: ***value*** Optional

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

- **Field_Statistics - Occurs 0 to 1 Times**

  description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
  role: **Concrete**

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

  attribute: **maximum** value: ***value*** Optional

  attribute: **minimum** value: ***value*** Optional

  attribute: **mean** value: ***value*** Optional

  attribute: **standard_deviation** value: ***value*** Optional

  attribute: **median** value: ***value*** Optional

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

- **End** Field_Statistics

- **Packed_Data_Fields - Occurs 0 to 1 Times**

  description: **The Packed_Data_Fields class contains field definitions for extracting packed data from the associated byte string field.**
  role: **Concrete**

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

  - **Field_Bit - Occurs 1 to * Times**

    description: **The Field_Bit class provides parameters for extracting one field out of a string of bytes which contains packed data (that is, data values either smaller than a single byte, or crossing byte boundaries, or both.**
    role: **Concrete**

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

    attribute: **start_bit** value: ***value***

    attribute: **stop_bit** value: ***value***

    attribute: **data_type** value: **SignedBitString, UnsignedBitString**

    attribute: **field_format** value: ***value*** Optional

    attribute: **unit** value: ***value*** Optional

    attribute: **scaling_factor** value: ***value*** Optional

    attribute: **value_offset** value: ***value*** Optional

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

    - **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: **saturated_constant** value: ***value*** Optional

      attribute: **missing_constant** value: ***value*** Optional

      attribute: **error_constant** value: ***value*** Optional

      attribute: **invalid_constant** value: ***value*** Optional

      attribute: **unknown_constant** value: ***value*** Optional

      attribute: **not_applicable_constant** value: ***value*** Optional

    - **End** Special_Constants

  - **End** Field_Bit

- **End** Packed_Data_Fields

- **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: **saturated_constant** value: ***value*** Optional

  attribute: **missing_constant** value: ***value*** Optional

  attribute: **error_constant** value: ***value*** Optional

  attribute: **invalid_constant** value: ***value*** Optional

  attribute: **unknown_constant** value: ***value*** Optional

  attribute: **not_applicable_constant** value: ***value*** Optional

- **End** Special_Constants

- **End** Field_Binary

- **Group_Field_Binary - Occurs 1 to * Times**

  description: **The Group_Field_Binary class allows a group of table fields.**
  role: **Concrete**

attribute: **repetitions** value: ***value***
attribute: **group_location** value: ***value***
attribute: **fields** value: ***value***
attribute: **group_length** value: ***value***

- **Field_Binary - Occurs 1 to * Times**

  description: **The Field_Binary class defines a field of the record.**
  role: **Concrete**
  attribute: **name** value: ***value***
  attribute: **field_number** value: ***value*** Optional
  attribute: **field_location** value: ***value***
  attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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, ComplexLSB16, ComplexLSB8, ComplexMSB16, ComplexMSB8, IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
  attribute: **field_length** value: ***value*** Optional
  attribute: **field_format** value: ***value*** Optional
  attribute: **unit** value: ***value*** Optional
  attribute: **scaling_factor** value: ***value*** Optional
  attribute: **value_offset** value: ***value*** Optional
  attribute: **description** value: ***value*** Optional

  - **Field_Statistics - Occurs 0 to 1 Times**

    description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** Optional
    attribute: **maximum** value: ***value*** Optional
    attribute: **minimum** value: ***value*** Optional
    attribute: **mean** value: ***value*** Optional
    attribute: **standard_deviation** value: ***value*** Optional
    attribute: **median** value: ***value*** Optional
    attribute: **description** value: ***value*** Optional
  - **End** Field_Statistics
  - **Packed_Data_Fields - Occurs 0 to 1 Times**

    description: **The Packed_Data_Fields class contains field definitions for extracting packed data from the associated byte string field.**
    role: **Concrete**
    attribute: **description** value: ***value*** Optional

    - **Field_Bit - Occurs 1 to * Times**

      description: **The Field_Bit class provides parameters for extracting one field out of a string of bytes which contains packed data (that is, data values either smaller than a single byte, or crossing byte boundaries, or both.**
      role: **Concrete**
      attribute: **name** value: ***value***
      attribute: **start_bit** value: ***value***
      attribute: **stop_bit** value: ***value***
      attribute: **data_type** value: **SignedBitString, UnsignedBitString**
      attribute: **field_format** value: ***value*** Optional
      attribute: **unit** value: ***value*** Optional
      attribute: **scaling_factor** value: ***value*** Optional
      attribute: **value_offset** value: ***value*** Optional
      attribute: **description** value: ***value*** Optional

      - **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: **saturated_constant** value: ***value*** Optional

attribute: **missing_constant** value: ***value*** Optional

attribute: **error_constant** value: ***value*** Optional

attribute: **invalid_constant** value: ***value*** Optional

attribute: **unknown_constant** value: ***value*** Optional

attribute: **not_applicable_constant** value: ***value*** Optional

- **End** Special_Constants
  - **End** Field_Bit
- **End** Packed_Data_Fields

- **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: **saturated_constant** value: ***value*** Optional

  attribute: **missing_constant** value: ***value*** Optional

  attribute: **error_constant** value: ***value*** Optional

  attribute: **invalid_constant** value: ***value*** Optional

  attribute: **unknown_constant** value: ***value*** Optional

  attribute: **not_applicable_constant** value: ***value*** Optional

  - **End** Special_Constants
- **End** Field_Binary
- **End** Group_Field_Binary
- **End** Record_Binary
- **End** Table_Binary

- **Table_Character - Occurs 0 to * Times**

description: **The Table Character class is an extension of table base and defines a simple character table.**
role: **Concrete**

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

attribute: **record_delimiter** value: **0x0A, 0x0D, 0x0D0x0A** Optional

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

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

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

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

- **Uniformly_Sampled - Occurs 0 to 1 Times**

  description: **The Uniformly_Sampled class provdes parameters for a uniformly sampled table.**
  role: **Concrete**
  attribute: **sampling_parameter_name** value: ***value***
  attribute: **sampling_parameter_interval** value: ***value***
  attribute: **sampling_parameter_unit** value: ***value***
  attribute: **first_sampling_parameter_value** value: ***value***
  attribute: **last_sampling_parameter_value** value: ***value***
  attribute: **sampling_parameter_scale** value: **EXPONENTIAL, LINEAR, LOGARITHMIC** Optional

- **End** Uniformly_Sampled

- **Record_Character Occurs 1 Times**

  description: **The Record_Character class is a component of the table class and defines a record of the table.**
  role: **Concrete**
  attribute: **record_length** value: ***value***
  attribute: **fields** value: ***value***

  - **Field_Character - Occurs 1 to * Times**

    description: **The Field_Character class defines a field of the record.**
    role: **Concrete**
    attribute: **name** value: ***value***
    attribute: **field_number** value: ***value*** Optional
    attribute: **field_location** value: ***value***
    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** Optional
    attribute: **field_format** value: ***value*** Optional

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

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

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

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

- **Field_Statistics - Occurs 0 to 1 Times**

  description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
  role: **Concrete**

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

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

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

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

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

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

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

- **End** Field_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: **saturated_constant** value: ***value*** ^{Optional}

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

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

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

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

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

- **End** Special_Constants

- **End** Field_Character

- **Group_Field_Character - Occurs 1 to * Times**

  description: **The Group_Field_Character class allows a group of table fields.**
  role: **Concrete**
  attribute: **repetitions** value: ***value***
  attribute: **group_location** value: ***value***
  attribute: **fields** value: ***value***
  attribute: **group_length** value: ***value***

  - **Field_Character - Occurs 0 to * Times**

    description: **The Field_Character class defines a field of the record.**
    role: **Concrete**
    attribute: **name** value: ***value***

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

    attribute: **field_location** value: ***value***
    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** ^{Optional}

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

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

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

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

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

    - **Field_Statistics - Occurs 0 to 1 Times**

      description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
      role: **Concrete**

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

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

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

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

- attribute: **standard_deviation** value: ***value*** ^{Optional}
- attribute: **median** value: ***value*** ^{Optional}
- attribute: **description** value: ***value*** ^{Optional}
- **End** Field_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: **saturated_constant** value: ***value*** ^{Optional}
    - attribute: **missing_constant** value: ***value*** ^{Optional}
    - attribute: **error_constant** value: ***value*** ^{Optional}
    - attribute: **invalid_constant** value: ***value*** ^{Optional}
    - attribute: **unknown_constant** value: ***value*** ^{Optional}
    - attribute: **not_applicable_constant** value: ***value*** ^{Optional}
    - • **End** Special_Constants
- • **End** Field_Character
- • **End** Group_Field_Character
- • **End** Record_Character
- • **End** Table_Character

- • **Table_Delimited - Occurs 0 to * Times**

  description: **The Table_Delimited class defines a simple table (spreadsheet) with delimited fields and records.**
  role: **Concrete**

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

  attribute: **local_identifier** value: ***value*** ^{Optional}
  attribute: **field_delimiter** value: **0x09, 0x2C, 0x3B, 0x7C**
  attribute: **record_delimiter** value: **0x0A, 0x0D, 0x0D0x0A**
  attribute: **offset** value: ***value***
  attribute: **records** value: ***value***
  attribute: **external_standard_id** value: **PDS_CSV**
  attribute: **encoding_type** value: **CHARACTER**

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

  - • **Uniformly_Sampled - Occurs 0 to 1 Times**

    description: **The Uniformly_Sampled class provdes parameters for a uniformly sampled table.**
    role: **Concrete**
    attribute: **sampling_parameter_name** value: ***value***
    attribute: **sampling_parameter_interval** value: ***value***
    attribute: **sampling_parameter_unit** value: ***value***
    attribute: **first_sampling_parameter_value** value: ***value***
    attribute: **last_sampling_parameter_value** value: ***value***
    attribute: **sampling_parameter_scale** value: **EXPONENTIAL, LINEAR, LOGARITHMIC** ^{Optional}
  - • **End** Uniformly_Sampled

  - • **Record_Delimited Occurs 1 Times**

    description: **The Record_Delimited class is a component of the delimited table (spreadsheet) class and defines a record of the delimited table.**
    role: **Concrete**
    attribute: **maximum_record_length** value: ***value*** ^{Optional}
    attribute: **fields** value: ***value***

    - • **Field_Delimited - Occurs 1 to * Times**

      description: **The Field_Delimited class defines a field of the record.**
      role: **Concrete**
      attribute: **name** value: ***value***
      attribute: **field_number** value: ***value*** ^{Optional}
      attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** ^{Optional}
      attribute: **field_format** value: ***value*** ^{Optional}
      attribute: **unit** value: ***value*** ^{Optional}

attribute: **scaling_factor** value: *value* Optional

attribute: **value_offset** value: *value* Optional

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

- **Field_Statistics - Occurs 0 to 1 Times**

  description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
  role: **Concrete**
  attribute: **local_identifier** value: *value* Optional

  attribute: **maximum** value: *value* Optional

  attribute: **minimum** value: *value* Optional

  attribute: **mean** value: *value* Optional

  attribute: **standard_deviation** value: *value* Optional

  attribute: **median** value: *value* Optional

  attribute: **description** value: *value* Optional
- **End** Field_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: **saturated_constant** value: *value* Optional

  attribute: **missing_constant** value: *value* Optional

  attribute: **error_constant** value: *value* Optional

  attribute: **invalid_constant** value: *value* Optional

  attribute: **unknown_constant** value: *value* Optional

  attribute: **not_applicable_constant** value: *value* Optional
- **End** Special_Constants
- **End** Field_Delimited
- **Group_Field_Delimited - Occurs 1 to * Times**

  description: **The FIeld_Group_Delimited class allows a group of delimited fields.**
  role: **Concrete**
  attribute: **repetitions** value: *value*
  attribute: **fields** value: *value*

  - **Field_Delimited - Occurs 1 to * Times**

    description: **The Field_Delimited class defines a field of the record.**
    role: **Concrete**
    attribute: **name** value: *value*
    attribute: **field_number** value: *value* Optional

    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: *value* Optional

    attribute: **field_format** value: *value* Optional

    attribute: **unit** value: *value* Optional

    attribute: **scaling_factor** value: *value* Optional

    attribute: **value_offset** value: *value* Optional

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

    - **Field_Statistics - Occurs 0 to 1 Times**

      description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
      role: **Concrete**
      attribute: **local_identifier** value: *value* Optional

      attribute: **maximum** value: *value* Optional

      attribute: **minimum** value: *value* Optional

      attribute: **mean** value: *value* Optional

      attribute: **standard_deviation** value: *value* Optional

      attribute: **median** value: *value* Optional

      attribute: **description** value: *value* Optional
    - **End** Field_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: **saturated_constant** value: ***value*** Optional
attribute: **missing_constant** value: ***value*** Optional
attribute: **error_constant** value: ***value*** Optional
attribute: **invalid_constant** value: ***value*** Optional
attribute: **unknown_constant** value: ***value*** Optional
attribute: **not_applicable_constant** value: ***value*** Optional
- **End** Special_Constants
- **End** Field_Delimited
- **End** Group_Field_Delimited
- **End** Record_Delimited
- **End** Table_Delimited
- **File Occurs 1 Times**

  description: **The File class consists of attributes that describe a file in a data store.**
  role: **Concrete**
  attribute: **file_name** value: ***value***
  attribute: **local_identifier** value: ***value*** Optional
  attribute: **creation_date_time** value: ***value*** Optional
  attribute: **file_size** value: ***value*** Optional
  attribute: **records** value: ***value*** Optional
  attribute: **maximum_record_bytes** value: ***value*** Optional
  attribute: **md5_checksum** value: ***value*** Optional
  attribute: **comment** value: ***value*** Optional
- **End** File
- **End** File_Area_Browse
- **End** Product_Browse

- **Product_Bundle**

  description: **A Product_Bundle is an aggregate product and has a table of references to one or more collections.**
  role: **Concrete**
  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**
    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**
      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: ***value*** Optional
        attribute: **alternate_title** value: ***value*** Optional
        attribute: **comment** value: ***value*** Optional
      - **End** Alias
    - **End** Alias_List
    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**
      attribute: **author_list** value: ***value*** Optional
      attribute: **editor_list** value: ***value*** Optional
      attribute: **publication_year** value: ***value***
      attribute: **keywords** value: ***value*** Optional
      attribute: **description** value: ***value***
    - **End** Citation_Information
    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**
      - **Modification_Detail Occurs 1 Times**

description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
role: **Concrete**
attribute: **modification_date** value: *value*
attribute: **version_id** value: *value*
attribute: **description** value: *value*
- **End** Modification_Detail
- **End** Modification_History
attribute: **logical_identifier** value: *value*
attribute: **version_id** value: *value*
attribute: **title** value: *value*
attribute: **information_model_version** value: **0.7.0.0.j**
attribute: **product_class** value: *value*
- **End** Identification_Area

- **Observation_Area - Occurs 0 to 1 Times**

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

  - **Time_Coordinates Occurs 1 Times**

    description: **The Time_Coordinates class provides a list of time coordinates.**
    role: **Concrete**
    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: **solar_longitude** value: *value* Optional
    - **End** Time_Coordinates

  - **Primary_Result_Description - Occurs 0 to 1 Times**

    description: **The Primary_Result_Description class provides a high-level description of the types of products included in the collection or bundle**
    role: **Concrete**
    attribute: **type** value: **Anaglyph, Aperture, Astrometry, B-Field_Vectors, Color, Column_Density, Comet_Nuclear_Properties, Count, Count_Rate, Data_Number, Digital_Elevation_Model, E-Field_Vectors, Electron, Environment, Filter_Curve, Filtered, Flux, Frequency, Geometry, Gravity_Model, Grism, Hardware_Temperature, High-Speed, Image, Image, Impact_Characteristics, Instrument, Ion, Lightcurve, Lines, Magnetometry, Magnitude, Magnitude, Map, Mass, Morphology, Null_Result, Parameters, Photometric, Photometry, Point_Spread_Function, Polarimetry, Pressure, Production_Rate, Pulse_Heights, Radiance, Radiometry, Shape_Model, Spectrometry, Spectrophotometry, Spectroscopy, Spectrum, Spherical_Harmonics, Spherical_Harmonics, Spin_State, Thermal, Time-Of-Flight, Triangular_Plate** Optional
    attribute: **purpose** value: **Calibration, Checkout, Engineering, Navigation, Science**
    attribute: **data_regime** value: **Dust, Dust_Particle_Counts, Electric_Field, Electrons, Far_Infrared, Gamma_Ray, Impacts, Infrared, Ions, Magnetic_Field, Mass_Spectra, Microwave, Millimeter, Near_Infrared, Optical, Particles, Radio, Sub-Millimeter, Ultraviolet, Visible, X-Ray**
    attribute: **reduction_level** value: **Analytic, Calibrated, Derived, Raw**
    attribute: **description** value: *value* Optional
    - **End** Primary_Result_Description

  - **Investigation_Area - Occurs 1 to * Times**

    description: **The Investigation_Area class provides iformation about an investigation (mission, observing campaign or other coordinated, large-scale data collection effort).**
    role: **Concrete**
    attribute: **name** value: *value*
    attribute: **type** value: **Individual_Investigation, Mission, Observing_Campaign, Other_Investigation**

    - **Internal_Reference Occurs 1 Times**

      description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
      role: **Concrete**
      attribute: **lid_reference** value: *value* Optional
      attribute: **lidvid_reference** value: *value* Optional
      attribute: **reference_type** value: *value*
      attribute: **comment** value: *value* Optional
      - **End** Internal_Reference
    - **End** Investigation_Area

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

    description: **The Observing System class describes the entire suite used to collect the data.**
    role: **Concrete**

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

  description: **The Observing System Component class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. Each subsystem is categorized as either a sensor or a source. If the observing system includes both a sensor and a source, Observing System Component occurs twice (once for each type) otherwise it only occurs once.**
  role: **Concrete**
  attribute: **name** value: **value**
  attribute: **observing_system_component_type** value: **Analyst, Artificial_Illumination, Ground-based_Laboratory, Ground-based_Observatory, Ground-based_Telescope, Instrument, Literature_Search, PDS_Archived_Data, Spacecraft**
  attribute: **description** value: **value** Optional

  - **Internal_Reference - Occurs 0 to 1 Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: **value** Optional
    attribute: **lidvid_reference** value: **value** Optional
    attribute: **reference_type** value: **value**
    attribute: **comment** value: **value** Optional
  - **End** Internal_Reference
  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: **value**
    attribute: **description** value: **value** Optional
  - **End** External_Reference
- **End** Observing_System_Component
  attribute: **name** value: **value** Optional
  attribute: **description** value: **value** Optional
- **End** Observing_System

- **Target_Identification - Occurs 1 to * Times**

  description: **The Target_Identification class provides detailed target identification information.**
  role: **Concrete**
  attribute: **name** value: **value**
  attribute: **alternate_designation** value: **value** Optional
  attribute: **type** value: **value**
  attribute: **description** value: **value** Optional

  - **Internal_Reference - Occurs 0 to 1 Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: **value** Optional
    attribute: **lidvid_reference** value: **value** Optional
    attribute: **reference_type** value: **value**
    attribute: **comment** value: **value** Optional
  - **End** Internal_Reference
- **End** Target_Identification

- **Geometry - Occurs 0 to * Times**

  description: **The Geometry class groups objects associated with geometry information.**
  role: **Concrete**
  attribute: **local_identifier** value: **value** Optional

  - **Vector - Occurs 0 to * Times**

    description: **The Vector class provides the components of either a velocity or position vector.**
    role: **Concrete**
    attribute: **name** value: **value**
    attribute: **local_identifier** value: **value** Optional
    attribute: **type** value: **POSITION, VELOCITY**
    attribute: **vector_components** value: **value**
    attribute: **description** value: **value**

    - **Vector_Component - Occurs 1 to * Times**

      description: **The Vector_Component class provides a component of a vector.**
      role: **Concrete**

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

attribute: **sequence_number** value: ***value***

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

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

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

- **End** Vector_Component
- **End** Vector
- **End** Geometry

- **Cartography - Occurs 0 to 1 Times**

  description: **The Cartography class is a placeholder for soon forthcoming Imaging cartography classes.**
  role: **Concrete**
  - **End** Cartography

- **Mission_Area - Occurs 0 to * Times**

  description: **The mission area allows the insertion of mission specific metadata.**
  role: **Concrete**
  - **End** Mission_Area
  attribute: **comment** value: ***value*** ^{Optional}

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

  description: **The node area allows the insertion of node specific metadata.**
  role: **Concrete**
  - **End** Node_Area
- **End** Observation_Area

- **Bundle_Member_Entry - Occurs 1 to * Times**

  description: **The Bundle Member Entry class provides a member reference to a collection.**
  role: **Concrete**
  attribute: **lid_reference** value: ***value*** ^{Optional}

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

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

  attribute: **member_status** value: **Primary, Secondary_No_File, Secondary_With_File**
  attribute: **reference_type** value: **has_browse_collection, has_calibration_collection, has_context_collection, has_data_collection, has_document_collection, has_geometry_collection, has_member_collection, has_schema_collection, has_spice_kernels_collection**
- **End** Bundle_Member_Entry

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: ***value*** ^{Optional}

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

    attribute: **reference_type** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}

    - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: ***value***
    attribute: **description** value: ***value*** ^{Optional}

    - **End** External_Reference
- **End** Reference_List

- **Bundle Occurs 1 Times**

  description: **The Bundle class describes a collection of collections.**
  role: **Concrete**
  attribute: **bundle_type** value: **Archive, Supplemental**

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

- **End** Bundle

- **File_Area_Text - Occurs 0 to 1 Times**

  description: **The File Area Text class describes a file that contains a text stream object.**
  role: **Concrete**

- **Stream_Text Occurs 1 Times**

  description: **The Stream text class defines a text file.**
  role: **Concrete**
  attribute: **name** value: ***value*** Optional
  attribute: **local_identifier** value: ***value*** Optional
  attribute: **offset** value: ***value***
  attribute: **external_standard_id** value: ***value***
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **description** value: ***value*** Optional
- **End** Stream_Text
- **File Occurs 1 Times**

  description: **The File class consists of attributes that describe a file in a data store.**
  role: **Concrete**
  attribute: **file_name** value: ***value***
  attribute: **local_identifier** value: ***value*** Optional
  attribute: **creation_date_time** value: ***value*** Optional
  attribute: **file_size** value: ***value*** Optional
  attribute: **records** value: ***value*** Optional
  attribute: **maximum_record_bytes** value: ***value*** Optional
  attribute: **md5_checksum** value: ***value*** Optional
  attribute: **comment** value: ***value*** Optional
- **End** File
- **End** File_Area_Text
- **End** Product_Bundle

- **Product_Collection**

  description: **A Product_Collection has a table of references to one or more basic products. The references are stored in a Table_Character called the Inventory.**
  role: **Concrete**
  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**
    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**
      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: ***value*** Optional
        attribute: **alternate_title** value: ***value*** Optional
        attribute: **comment** value: ***value*** Optional
      - **End** Alias
    - **End** Alias_List
    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**
      attribute: **author_list** value: ***value*** Optional
      attribute: **editor_list** value: ***value*** Optional
      attribute: **publication_year** value: ***value***
      attribute: **keywords** value: ***value*** Optional
      attribute: **description** value: ***value***
    - **End** Citation_Information
    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**
      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**

role: **Concrete**
attribute: **modification_date** value: **value**
attribute: **version_id** value: **value**
attribute: **description** value: **value**
- **End** Modification_Detail
- **End** Modification_History
attribute: **logical_identifier** value: **value**
attribute: **version_id** value: **value**
attribute: **title** value: **value**
attribute: **information_model_version** value: **0.7.0.0.j**
attribute: **product_class** value: **value**
- **End** Identification_Area

- **Observation_Area - Occurs 0 to 1 Times**

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

  - **Time_Coordinates Occurs 1 Times**

    description: **The Time_Coordinates class provides a list of time coordinates.**
    role: **Concrete**
    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: **solar_longitude** value: **value** Optional
  - **End** Time_Coordinates

  - **Primary_Result_Description - Occurs 0 to 1 Times**

    description: **The Primary_Result_Description class provides a high-level description of the types of products included in the collection or bundle**
    role: **Concrete**
    attribute: **type** value: **Anaglyph, Aperture, Astrometry, B-Field_Vectors, Color, Column_Density, Comet_Nuclear_Properties, Count, Count_Rate, Data_Number, Digital_Elevation_Model, E-Field_Vectors, Electron, Environment, Filter_Curve, Filtered, Flux, Frequency, Geometry, Gravity_Model, Grism, Hardware_Temperature, High-Speed, Image, Image, Impact_Characteristics, Instrument, Ion, Lightcurve, Lines, Magnetometry, Magnitude, Magnitude, Map, Mass, Morphology, Null_Result, Parameters, Photometric, Photometry, Point_Spread_Function, Polarimetry, Pressure, Production_Rate, Pulse_Heights, Radiance, Radiometry, Shape_Model, Spectrometry, Spectrophotometry, Spectroscopy, Spectrum, Spherical_Harmonics, Spherical_Harmonics, Spin_State, Thermal, Time-Of-Flight, Triangular_Plate** Optional
    attribute: **purpose** value: **Calibration, Checkout, Engineering, Navigation, Science**
    attribute: **data_regime** value: **Dust, Dust_Particle_Counts, Electric_Field, Electrons, Far_Infrared, Gamma_Ray, Impacts, Infrared, Ions, Magnetic_Field, Mass_Spectra, Microwave, Millimeter, Near_Infrared, Optical, Particles, Radio, Sub-Millimeter, Ultraviolet, Visible, X-Ray**
    attribute: **reduction_level** value: **Analytic, Calibrated, Derived, Raw**
    attribute: **description** value: **value** Optional
  - **End** Primary_Result_Description

  - **Investigation_Area - Occurs 1 to * Times**

    description: **The Investigation_Area class provides iformation about an investigation (mission, observing campaign or other coordinated, large-scale data collection effort).**
    role: **Concrete**
    attribute: **name** value: **value**
    attribute: **type** value: **Individual_Investigation, Mission, Observing_Campaign, Other_Investigation**

    - **Internal_Reference Occurs 1 Times**

      description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
      role: **Concrete**
      attribute: **lid_reference** value: **value** Optional
      attribute: **lidvid_reference** value: **value** Optional
      attribute: **reference_type** value: **value**
      attribute: **comment** value: **value** Optional
    - **End** Internal_Reference
  - **End** Investigation_Area

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

    description: **The Observing System class describes the entire suite used to collect the data.**
    role: **Concrete**

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

      description: **The Observing System Component class references one or more subsystems used**

to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. Each subsystem is categorized as either a sensor or a source. If the observing system includes both a sensor and a source, Observing System Component occurs twice (once for each type) otherwise it only occurs once.
role: **Concrete**
attribute: **name** value: *value*
attribute: **observing_system_component_type** value: **Analyst, Artificial_Illumination, Ground-based_Laboratory, Ground-based_Observatory, Ground-based_Telescope, Instrument, Literature_Search, PDS_Archived_Data, Spacecraft**
attribute: **description** value: *value* Optional

- **Internal_Reference - Occurs 0 to 1 Times**

  description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
  role: **Concrete**
  attribute: **lid_reference** value: *value* Optional
  attribute: **lidvid_reference** value: *value* Optional
  attribute: **reference_type** value: *value*
  attribute: **comment** value: *value* Optional
- **End** Internal_Reference
- **External_Reference - Occurs 0 to * Times**

  description: **The External_Reference class is used to reference a source outside the PDS registry system.**
  role: **Concrete**
  attribute: **reference_text** value: *value*
  attribute: **description** value: *value* Optional
- **End** External_Reference
- **End** Observing_System_Component
  attribute: **name** value: *value* Optional
  attribute: **description** value: *value* Optional
- **End** Observing_System
- **Target_Identification - Occurs 1 to * Times**

  description: **The Target_Identification class provides detailed target identification information.**
  role: **Concrete**
  attribute: **name** value: *value*
  attribute: **alternate_designation** value: *value* Optional
  attribute: **type** value: *value*
  attribute: **description** value: *value* Optional

  - **Internal_Reference - Occurs 0 to 1 Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: *value* Optional
    attribute: **lidvid_reference** value: *value* Optional
    attribute: **reference_type** value: *value*
    attribute: **comment** value: *value* Optional
  - **End** Internal_Reference
- **End** Target_Identification
- **Geometry - Occurs 0 to * Times**

  description: **The Geometry class groups objects associated with geometry information.**
  role: **Concrete**
  attribute: **local_identifier** value: *value* Optional

  - **Vector - Occurs 0 to * Times**

    description: **The Vector class provides the components of either a velocity or position vector.**
    role: **Concrete**
    attribute: **name** value: *value*
    attribute: **local_identifier** value: *value* Optional
    attribute: **type** value: **POSITION, VELOCITY**
    attribute: **vector_components** value: *value*
    attribute: **description** value: *value*

    - **Vector_Component - Occurs 1 to * Times**

      description: **The Vector_Component class provides a component of a vector.**
      role: **Concrete**
      attribute: **name** value: *value* Optional
      attribute: **sequence_number** value: *value*
      attribute: **unit** value: *value* Optional

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

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

- **End** Vector_Component
- **End** Vector
- **End** Geometry
- **Cartography - Occurs 0 to 1 Times**

  description: **The Cartography class is a placeholder for soon forthcoming Imaging cartography classes.**
  role: **Concrete**
- **End** Cartography
- **Mission_Area - Occurs 0 to * Times**

  description: **The mission area allows the insertion of mission specific metadata.**
  role: **Concrete**
- **End** Mission_Area

  attribute: **comment** value: ***value*** ^{Optional}
- **Node_Area - Occurs 0 to * Times**

  description: **The node area allows the insertion of node specific metadata.**
  role: **Concrete**
- **End** Node_Area
- **End** Observation_Area
- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**
  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**

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

    attribute: **lidvid_reference** value: ***value*** ^{Optional}
    attribute: **reference_type** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
  - **End** Internal_Reference
  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: ***value***

    attribute: **description** value: ***value*** ^{Optional}
  - **End** External_Reference
- **End** Reference_List
- **Collection Occurs 1 Times**

  description: **The Collection class provides a description of a set of products.**
  role: **Concrete**
  attribute: **collection_type** value: **Browse, Calibration, Context, Data, Document, Geometry, Miscellaneous, SPICE, Schema**
- **End** Collection
- **File_Area_Inventory - Occurs 0 to 3 Times**

  description: **The File Area Inventory class describes a file and an inventory consisting of references to members.**
  role: **Concrete**
  - **Inventory Occurs 1 Times**

    description: **The Inventory class defines the inventory for members of a collection.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    attribute: **reference_type** value: **has_member_LIDVID_Primary, has_member_LIDVID_Secondary, has_member_LID_Secondary**
    attribute: **offset** value: ***value***
    attribute: **records** value: ***value***
    attribute: **encoding_type** value: **CHARACTER**
    attribute: **description** value: ***value*** ^{Optional}
    - **Record_Character Occurs 1 Times**

      description: **The Record_Character class is a component of the table class and defines a record of the table.**

role: **Concrete**
attribute: **record_length** value: *value*
attribute: **fields** value: *value*

- **Field_Character - Occurs 1 to * Times**

  description: **The Field_Character class defines a field of the record.**
  role: **Concrete**
  attribute: **name** value: *value*
  attribute: **field_number** value: *value* ^{Optional}
  attribute: **field_location** value: *value*
  attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: *value* ^{Optional}
  attribute: **field_format** value: *value* ^{Optional}
  attribute: **unit** value: *value* ^{Optional}
  attribute: **scaling_factor** value: *value* ^{Optional}
  attribute: **value_offset** value: *value* ^{Optional}
  attribute: **description** value: *value* ^{Optional}

  - **Field_Statistics - Occurs 0 to 1 Times**

    description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
    role: **Concrete**
    attribute: **local_identifier** value: *value* ^{Optional}
    attribute: **maximum** value: *value* ^{Optional}
    attribute: **minimum** value: *value* ^{Optional}
    attribute: **mean** value: *value* ^{Optional}
    attribute: **standard_deviation** value: *value* ^{Optional}
    attribute: **median** value: *value* ^{Optional}
    attribute: **description** value: *value* ^{Optional}
  - **End** Field_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: **saturated_constant** value: *value* ^{Optional}
    attribute: **missing_constant** value: *value* ^{Optional}
    attribute: **error_constant** value: *value* ^{Optional}
    attribute: **invalid_constant** value: *value* ^{Optional}
    attribute: **unknown_constant** value: *value* ^{Optional}
    attribute: **not_applicable_constant** value: *value* ^{Optional}
  - **End** Special_Constants
- **End** Field_Character

- **Group_Field_Character - Occurs 1 to * Times**

  description: **The Group_Field_Character class allows a group of table fields.**
  role: **Concrete**
  attribute: **repetitions** value: *value*
  attribute: **group_location** value: *value*
  attribute: **fields** value: *value*
  attribute: **group_length** value: *value*

  - **Field_Character - Occurs 0 to * Times**

    description: **The Field_Character class defines a field of the record.**
    role: **Concrete**
    attribute: **name** value: *value*
    attribute: **field_number** value: *value* ^{Optional}
    attribute: **field_location** value: *value*
    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: *value* Optional

attribute: **field_format** value: *value* Optional

attribute: **unit** value: *value* Optional

attribute: **scaling_factor** value: *value* Optional

attribute: **value_offset** value: *value* Optional

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

- **Field_Statistics - Occurs 0 to 1 Times**

  description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
  role: **Concrete**

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

  attribute: **maximum** value: *value* Optional

  attribute: **minimum** value: *value* Optional

  attribute: **mean** value: *value* Optional

  attribute: **standard_deviation** value: *value* Optional

  attribute: **median** value: *value* Optional

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

- **End** Field_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: **saturated_constant** value: *value* Optional

  attribute: **missing_constant** value: *value* Optional

  attribute: **error_constant** value: *value* Optional

  attribute: **invalid_constant** value: *value* Optional

  attribute: **unknown_constant** value: *value* Optional

  attribute: **not_applicable_constant** value: *value* Optional

- **End** Special_Constants

- **End** Field_Character

- **End** Group_Field_Character

- **End** Record_Character

- **End** Inventory

- **File Occurs 1 Times**

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

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

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

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

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

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

  attribute: **maximum_record_bytes** value: *value* Optional

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

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

- **End** File

- **End** File_Area_Inventory

- **End** Product_Collection

- **Product_Context**

  description: **The Product Context class describes something that provides context and provenance for an observational product.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

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

           role: **Concrete**

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

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

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

- **End** Alias

- **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**

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

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

  attribute: **publication_year** value: ***value***

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

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

- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**

  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**
    attribute: **modification_date** value: ***value***
    attribute: **version_id** value: ***value***
    attribute: **description** value: ***value***
  - **End** Modification_Detail

- **End** Modification_History

  attribute: **logical_identifier** value: ***value***
  attribute: **version_id** value: ***value***
  attribute: **title** value: ***value***
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: ***value***

- **End** Identification_Area

- **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: **name** value: **Engineering, Geosciences, Imaging, Management, Navigation_Ancillary_Information_Facility, Planetary_Atmospheres, Planetary_Plasma_Interactions, Planetary_Rings, Radio_Science, Small_Bodies**
  attribute: **institution_name** value: ***value***
  attribute: **description** value: ***value***

- **End** Node

- **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: **name** value: ***value*** ^{Optional}

  attribute: **registration_date** value: ***value***

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

  attribute: **sort_name** value: ***value***

  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: **team_name** value: **Engineering, Geosciences, Headquarters, Imaging, Management, National_Space_Science_Data_Center, Navigation_Ancillary_Information_Facility, Planetary_Atmospheres, Planetary_Plasma_Interactions, Planetary_Rings, Radio_Science, Small_Bodies** ^{Optional}

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

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

- **End** PDS_Affiliate

- **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: **name** value: *value* ^{Optional}

attribute: **registration_date** value: *value*

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

attribute: **sort_name** value: *value*

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

- **End** PDS_Guest

- **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: **name** value: *value* ^{Optional}

  attribute: **type** value: *value*

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

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

- **End** Resource

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

    - **Internal_Reference - Occurs 0 to * Times**

      description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
      role: **Concrete**

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

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

      attribute: **reference_type** value: *value*

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

      - **End** Internal_Reference

    - **External_Reference - Occurs 0 to * Times**

      description: **The External_Reference class is used to reference a source outside the PDS registry system.**
      role: **Concrete**

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

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

      - **End** External_Reference

- **End** Reference_List

- **Instrument Occurs 1 Times**

  description: **The Instrument class provides a description of a phyiscal object that collects data.**
  role: **Concrete**

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

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

  attribute: **type** value: **Accelerometer, Altimeter, Camera, Cosmic_Ray_Detector, Detector_Array, Dust_Analyzer, Imaging_Spectrometer, Magnetometer, Meteorology, Naked_Eye, Other, Particle_Detector, Photometer, Plasma_Analyzer, Radio_Science, Radio_Spectrometer, Radio_Telescope, Radiometer, Reflectometer, Spectrometer**

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

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

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

- **End** Instrument

- **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: **name** value: *value* ^{Optional}

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

  attribute: **type** value: **Earth_Based, Rover, Spacecraft**

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

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

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

- **End** Instrument_Host

- **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: **name** value: ***value*** ^{Optional}
attribute: **type** value: **Individual_Investigation, Mission, Observing_Campaign, Other_Investigation**
attribute: **start_date** value: ***value***
attribute: **stop_date** value: ***value***
attribute: **description** value: ***value***
- **End** Investigation

- **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: **name** value: ***value*** ^{Optional}
attribute: **type** value: **Asteroid, Comet, Dust, Dwarf_Planet, Galaxy, Globular_Cluster, Meteorite, Meteoroid, Meteoroid_Stream, Nebula, Open_Cluster, Planet, Planetary_Nebula, Planetary_System, Plasma_Cloud, Ring, Satellite, Star, Star_Cluster, Sun, Terrestrial_Sample, Trans-Neptunian_Object** ^{Optional}
attribute: **description** value: ***value***
- **End** Target
- **End** Product_Context

- **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 Occurs 1 Times**

description: **The identification area consists of attributes that identify and name an object.**
role: **Concrete**

- **Alias_List - Occurs 0 to 1 Times**

description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
role: **Concrete**

- **Alias - Occurs 1 to * Times**

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

attribute: **alternate_id** value: ***value*** ^{Optional}
attribute: **alternate_title** value: ***value*** ^{Optional}
attribute: **comment** value: ***value*** ^{Optional}
- **End** Alias
- **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
role: **Concrete**

attribute: **author_list** value: ***value*** ^{Optional}
attribute: **editor_list** value: ***value*** ^{Optional}
attribute: **publication_year** value: ***value***
attribute: **keywords** value: ***value*** ^{Optional}
attribute: **description** value: ***value***
- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
role: **Concrete**

- **Modification_Detail Occurs 1 Times**

description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
role: **Concrete**
attribute: **modification_date** value: ***value***
attribute: **version_id** value: ***value***
attribute: **description** value: ***value***
- **End** Modification_Detail
- **End** Modification_History
attribute: **logical_identifier** value: ***value***
attribute: **version_id** value: ***value***

attribute: **title** value: ***value***
attribute: **information_model_version** value: **0.7.0.0.j**
attribute: **product_class** value: ***value***

- **End** Identification_Area

- **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: **data_set_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

  - **NSSDC - Occurs 0 to * Times**

    description: **The NSSDC Information class provides identification information for data submitted to the NSSDC.**
    role: **Concrete**
    attribute: **medium_type** value: ***value***
    attribute: **nssdc_collection_id** value: ***value***
  - **End** NSSDC
- **End** Data_Set_PDS3

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: ***value*** Optional
    attribute: **lidvid_reference** value: ***value*** Optional
    attribute: **reference_type** value: ***value***
    attribute: **comment** value: ***value*** Optional
  - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: ***value***
    attribute: **description** value: ***value*** Optional
  - **End** External_Reference
- **End** Reference_List
- **End** Product_Data_Set_PDS3

- **Product_Delivery_Manifest**

  description: **The Product Delivery Manifest is class that defines a system product that contains a table of references to one or more files.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

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

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

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

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

- **End** Alias
- **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
role: **Concrete**

attribute: **author_list** value: ***value*** Optional

attribute: **editor_list** value: ***value*** Optional

attribute: **publication_year** value: ***value***

attribute: **keywords** value: ***value*** Optional

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

- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
role: **Concrete**

- **Modification_Detail Occurs 1 Times**

description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
role: **Concrete**
attribute: **modification_date** value: ***value***
attribute: **version_id** value: ***value***
attribute: **description** value: ***value***

- **End** Modification_Detail

- **End** Modification_History
attribute: **logical_identifier** value: ***value***
attribute: **version_id** value: ***value***
attribute: **title** value: ***value***
attribute: **information_model_version** value: **0.7.0.0.j**
attribute: **product_class** value: ***value***

- **End** Identification_Area

- **File_Area_Delivery_Manifest Occurs 1 Times**

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

- **Delivery_Manifest Occurs 1 Times**

description: **The Delivery_Manifest class defines a two column table for file references. The table structure is compatible with the output from an MD5 checksum utility.**
role: **Concrete**
attribute: **local_identifier** value: ***value*** Optional
attribute: **reference_type** value: **has_member**
attribute: **offset** value: ***value***
attribute: **records** value: ***value***
attribute: **encoding_type** value: **CHARACTER**
attribute: **description** value: ***value*** Optional

- **Record_Character Occurs 1 Times**

description: **The Record_Character class is a component of the table class and defines a record of the table.**
role: **Concrete**
attribute: **record_length** value: ***value***
attribute: **fields** value: ***value***

- **Field_Character - Occurs 1 to * Times**

description: **The Field_Character class defines a field of the record.**
role: **Concrete**
attribute: **name** value: ***value***
attribute: **field_number** value: ***value*** Optional
attribute: **field_location** value: ***value***
attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD,**

ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** ^{Optional}

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

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

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

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

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

- **Field_Statistics - Occurs 0 to 1 Times**

  description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
  role: **Concrete**

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

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

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

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

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

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

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

- **End** Field_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: **saturated_constant** value: ***value*** ^{Optional}

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

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

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

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

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

- **End** Special_Constants

- **End** Field_Character

- **Group_Field_Character - Occurs 1 to * Times**

  description: **The Group_Field_Character class allows a group of table fields.**
  role: **Concrete**

  attribute: **repetitions** value: ***value***

  attribute: **group_location** value: ***value***

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

  attribute: **group_length** value: ***value***

  - **Field_Character - Occurs 0 to * Times**

    description: **The Field_Character class defines a field of the record.**
    role: **Concrete**

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

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

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

    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** ^{Optional}

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

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

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

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

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

    - **Field_Statistics - Occurs 0 to 1 Times**

      description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**

role: **Concrete**

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

attribute: **maximum** value: *value* Optional

attribute: **minimum** value: *value* Optional

attribute: **mean** value: *value* Optional

attribute: **standard_deviation** value: *value* Optional

attribute: **median** value: *value* Optional

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

- **End** Field_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: **saturated_constant** value: *value* Optional

  attribute: **missing_constant** value: *value* Optional

  attribute: **error_constant** value: *value* Optional

  attribute: **invalid_constant** value: *value* Optional

  attribute: **unknown_constant** value: *value* Optional

  attribute: **not_applicable_constant** value: *value* Optional

  - **End** Special_Constants

  - **End** Field_Character

  - **End** Group_Field_Character

  - **End** Record_Character

- **End** Delivery_Manifest

- **File Occurs 1 Times**

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

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

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

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

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

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

  attribute: **maximum_record_bytes** value: *value* Optional

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

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

  - **End** File

- **End** File_Area_Delivery_Manifest

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**

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

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

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

    - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**

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

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

    - **End** External_Reference

  - **End** Reference_List

- **End** Product_Delivery_Manifest

- **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 Occurs 1 Times**

  description: **The identification area consists of attributes that identify and name an object.**
  role: **Concrete**
    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**
        - **Alias - Occurs 1 to * Times**

          description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
          role: **Concrete**
          attribute: **alternate_id** value: **value** ^{Optional}
          attribute: **alternate_title** value: **value** ^{Optional}
          attribute: **comment** value: **value** ^{Optional}
        - **End** Alias
    - **End** Alias_List
    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**
      attribute: **author_list** value: **value** ^{Optional}
      attribute: **editor_list** value: **value** ^{Optional}
      attribute: **publication_year** value: **value**
      attribute: **keywords** value: **value** ^{Optional}
      attribute: **description** value: **value**
    - **End** Citation_Information
    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**
        - **Modification_Detail Occurs 1 Times**

          description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
          role: **Concrete**
          attribute: **modification_date** value: **value**
          attribute: **version_id** value: **value**
          attribute: **description** value: **value**
        - **End** Modification_Detail
    - **End** Modification_History
      attribute: **logical_identifier** value: **value**
      attribute: **version_id** value: **value**
      attribute: **title** value: **value**
      attribute: **information_model_version** value: **0.7.0.0.j**
      attribute: **product_class** value: **value**
- **End** Identification_Area
- **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: **file_name** value: **value**
      attribute: **directory_path_name** value: **value** ^{Optional}
      attribute: **local_identifier** value: **value** ^{Optional}
      attribute: **creation_date_time** value: **value** ^{Optional}
      attribute: **file_size** value: **value** ^{Optional}
      attribute: **records** value: **value** ^{Optional}
      attribute: **maximum_record_bytes** value: **value** ^{Optional}
      attribute: **md5_checksum** value: **value** ^{Optional}
      attribute: **external_standard_id** value: **ENCAPSULATED_POSTSCRIPT, GIF, HTML, JPG, LaTEX, MICROSOFT_WORD, PDF, PDF-A, PNG, POSTSCRIPT, RICH_TEXT, TEXT, TIFF**
      attribute: **encoding_type** value: **BINARY, CHARACTER**
      attribute: **comment** 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: **starting_point_identifier** value: *value* Optional
  attribute: **format_type** value: **HTML, PDF, PDF-A, TEXT**
  attribute: **description** value: *value* Optional
  - **End** Document_Format
- **End** Document_Format_Set
- **Document_Description Occurs 1 Times**

  description: **The Document_Description class describes a document.**
  role: **Concrete**
  attribute: **revision_id** value: *value* Optional
  attribute: **document_name** value: *value* Optional
  attribute: **doi** value: *value* Optional
  attribute: **author_list** value: *value* Optional
  attribute: **editor_list** value: *value* Optional
  attribute: **publication_date** value: *value*
  attribute: **acknowledgement_text** value: *value* Optional
  attribute: **copyright** value: *value* Optional
  attribute: **description** value: *value* Optional
- **End** Document_Description
- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**
  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: *value* Optional
    attribute: **lidvid_reference** value: *value* Optional
    attribute: **reference_type** value: *value*
    attribute: **comment** value: *value* Optional
  - **End** Internal_Reference
  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: *value*
    attribute: **description** value: *value* Optional
  - **End** External_Reference
- **End** Reference_List
- **End** Product_Document

- **Product_File_Repository**

  description: **The Product File Repository class consists of a single text file. This product is used to register a file in a repository.**
  role: **Concrete**
  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**
    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**
      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: *value* Optional

- attribute: **alternate_title** value: ***value*** ^{Optional}
  - attribute: **comment** value: ***value*** ^{Optional}
  - **End** Alias
- **End** Alias_List
- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**

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

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

  attribute: **publication_year** value: ***value***

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

  attribute: **description** value: ***value***
- **End** Citation_Information
- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**
  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**
    attribute: **modification_date** value: ***value***
    attribute: **version_id** value: ***value***
    attribute: **description** value: ***value***
  - **End** Modification_Detail
- **End** Modification_History
  attribute: **logical_identifier** value: ***value***
  attribute: **version_id** value: ***value***
  attribute: **title** value: ***value***
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: ***value***
- **End** Identification_Area
- **File_Area_Binary Occurs 1 Times**

  description: **The File Area Binary class describes a file that contains an encoded byte stream.**
  role: **Concrete**
  - **Encoded_Binary - Occurs 0 to * Times**

    description: **The Encoded Binary class describes a binary encoded byte stream.This class is used to describe files in the repository that are being registered using Product_File_Repository.**
    role: **Concrete**
    attribute: **local_identifier** value: ***value*** ^{Optional}
    attribute: **offset** value: ***value***
    attribute: **external_standard_id** value: **System**
    attribute: **encoding_type** value: **BINARY**
    attribute: **description** value: ***value*** ^{Optional}
  - **End** Encoded_Binary
  - **File Occurs 1 Times**

    description: **The File class consists of attributes that describe a file in a data store.**
    role: **Concrete**
    attribute: **file_name** value: ***value***
    attribute: **local_identifier** value: ***value*** ^{Optional}
    attribute: **creation_date_time** value: ***value*** ^{Optional}
    attribute: **file_size** value: ***value*** ^{Optional}
    attribute: **records** value: ***value*** ^{Optional}
    attribute: **maximum_record_bytes** value: ***value*** ^{Optional}
    attribute: **md5_checksum** value: ***value*** ^{Optional}
    attribute: **comment** value: ***value*** ^{Optional}
  - **End** File
- **End** File_Area_Binary
- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**
  - **Internal_Reference - Occurs 0 to * Times**

description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
role: **Concrete**

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

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

attribute: **reference_type** value: **value**

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

- **End** Internal_Reference

- **External_Reference - Occurs 0 to * Times**

  description: **The External_Reference class is used to reference a source outside the PDS registry system.**
  role: **Concrete**

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

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

  - **End** External_Reference

- **End** Reference_List

- **End** Product_File_Repository

- **Product_File_Text**

  description: **The Product File Text 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**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

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

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

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

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

        - **End** Alias

      - **End** Alias_List

    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**

      attribute: **author_list** value: **value** Optional

      attribute: **editor_list** value: **value** Optional

      attribute: **publication_year** value: **value**

      attribute: **keywords** value: **value** Optional

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

      - **End** Citation_Information

    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**

      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
        role: **Concrete**

        attribute: **modification_date** value: **value**

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

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

        - **End** Modification_Detail

      - **End** Modification_History

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

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

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

attribute: **information_model_version** value: **0.7.0.0.j**
attribute: **product_class** value: ***value***

- **End** Identification_Area

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**

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

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

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

    - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: ***value***

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

    - **End** External_Reference

- **End** Reference_List

- **File_Area_Text Occurs 1 Times**

  description: **The File Area Text class describes a file that contains a text stream object.**
  role: **Concrete**

  - **Stream_Text Occurs 1 Times**

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

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

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

    - **End** Stream_Text

  - **File Occurs 1 Times**

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

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

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

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

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

    attribute: **maximum_record_bytes** value: ***value*** Optional

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

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

    - **End** File

- **End** File_Area_Text

- **End** Product_File_Text

- **Product_Instrument_Host_PDS3**

  description: **An Instrument Host product describes an instrument host. This product captures the PDS3 catalog instrument host information.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

- **Alias - Occurs 1 to * Times**

  description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
  role: **Concrete**
  attribute: **alternate_id** value: **value** ^{Optional}
  attribute: **alternate_title** value: **value** ^{Optional}
  attribute: **comment** value: **value** ^{Optional}
  - **End** Alias
- **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**
  attribute: **author_list** value: **value** ^{Optional}
  attribute: **editor_list** value: **value** ^{Optional}
  attribute: **publication_year** value: **value**
  attribute: **keywords** value: **value** ^{Optional}
  attribute: **description** value: **value**
- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**
  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**
    attribute: **modification_date** value: **value**
    attribute: **version_id** value: **value**
    attribute: **description** value: **value**
    - **End** Modification_Detail
- **End** Modification_History
  attribute: **logical_identifier** value: **value**
  attribute: **version_id** value: **value**
  attribute: **title** value: **value**
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: **value**
- **End** Identification_Area

- **Instrument_Host_PDS3 Occurs 1 Times**

  description: **The Instrument Host class provides a description of the phyiscal object upon which an instrument is mounted. This class captures the PDS3 catalog Instrument Host information.**
  role: **Concrete**
  attribute: **instrument_host_name** value: **value**
  attribute: **instrument_host_desc** value: **value**
  attribute: **instrument_host_id** value: **value**
  attribute: **instrument_host_type** value: **value**
- **End** Instrument_Host_PDS3

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**
  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: **value** ^{Optional}
    attribute: **lidvid_reference** value: **value** ^{Optional}
    attribute: **reference_type** value: **value**
    attribute: **comment** value: **value** ^{Optional}
  - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**

- attribute: **reference_text** value: *value*
  - attribute: **description** value: *value* ^{Optional}
  - **End** External_Reference
- **End** Reference_List
- **End** Product_Instrument_Host_PDS3

- **Product_Instrument_PDS3**

  description: **An Instrument product describes an instrument. This product captures the PDS3 catalog instrument information.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: *value* ^{Optional}
        attribute: **alternate_title** value: *value* ^{Optional}
        attribute: **comment** value: *value* ^{Optional}
      - **End** Alias
    - **End** Alias_List

    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**
      attribute: **author_list** value: *value* ^{Optional}
      attribute: **editor_list** value: *value* ^{Optional}
      attribute: **publication_year** value: *value*
      attribute: **keywords** value: *value* ^{Optional}
      attribute: **description** value: *value*
    - **End** Citation_Information

    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**

      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
        role: **Concrete**
        attribute: **modification_date** value: *value*
        attribute: **version_id** value: *value*
        attribute: **description** value: *value*
      - **End** Modification_Detail
    - **End** Modification_History
      attribute: **logical_identifier** value: *value*
      attribute: **version_id** value: *value*
      attribute: **title** value: *value*
      attribute: **information_model_version** value: **0.7.0.0.j**
      attribute: **product_class** value: *value*
  - **End** Identification_Area

  - **Instrument_PDS3 Occurs 1 Times**

    description: **The Instrument class provides a description of a phyiscal object that collects data. This class captures the PDS3 catalog Instrument information.**
    role: **Concrete**
    attribute: **instrument_name** value: *value*
    attribute: **instrument_desc** value: *value*
    attribute: **instrument_id** value: *value*

attribute: **instrument_serial_number** value: *value*
attribute: **instrument_type** value: *value*
attribute: **instrument_version_id** value: *value*

- **End** Instrument_PDS3

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

    - **Internal_Reference - Occurs 0 to * Times**

      description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
      role: **Concrete**

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

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

      attribute: **reference_type** value: *value*

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

      - **End** Internal_Reference

    - **External_Reference - Occurs 0 to * Times**

      description: **The External_Reference class is used to reference a source outside the PDS registry system.**
      role: **Concrete**

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

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

      - **End** External_Reference

  - **End** Reference_List

- **End** Product_Instrument_PDS3

- **Product_Mission_PDS3**

  description: **An Mission product describes a mission. This product captures the PDS3 catalog mission information.**
  role: **Concrete**

    - **Identification_Area Occurs 1 Times**

      description: **The identification area consists of attributes that identify and name an object.**
      role: **Concrete**

        - **Alias_List - Occurs 0 to 1 Times**

          description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
          role: **Concrete**

            - **Alias - Occurs 1 to * Times**

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

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

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

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

              - **End** Alias

          - **End** Alias_List

        - **Citation_Information - Occurs 0 to 1 Times**

          description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
          role: **Concrete**

          attribute: **author_list** value: *value* Optional

          attribute: **editor_list** value: *value* Optional

          attribute: **publication_year** value: *value*

          attribute: **keywords** value: *value* Optional

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

          - **End** Citation_Information

        - **Modification_History - Occurs 0 to 1 Times**

          description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
          role: **Concrete**

            - **Modification_Detail Occurs 1 Times**

              description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first**

- **registered.**
  role: **Concrete**
  attribute: **modification_date** value: ***value***
  attribute: **version_id** value: ***value***
  attribute: **description** value: ***value***
  - **End** Modification_Detail
- **End** Modification_History
  attribute: **logical_identifier** value: ***value***
  attribute: **version_id** value: ***value***
  attribute: **title** value: ***value***
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: ***value***
- **End** Identification_Area
- **Mission_PDS3 Occurs 1 Times**

  description: **The Mission PDS3 class describes an activity involved in the collection of data. This class captures the PDS3 catalog Mission information.**
  role: **Concrete**
  attribute: **mission_name** value: ***value***
  attribute: **mission_desc** value: ***value***
  attribute: **mission_objectives_summary** value: ***value***
  attribute: **mission_start_date** value: ***value***
  attribute: **mission_stop_date** value: ***value***
- **End** Mission_PDS3
- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**
    - **Internal_Reference - Occurs 0 to * Times**

      description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
      role: **Concrete**
      attribute: **lid_reference** value: ***value*** Optional
      attribute: **lidvid_reference** value: ***value*** Optional
      attribute: **reference_type** value: ***value***
      attribute: **comment** value: ***value*** Optional
    - **End** Internal_Reference
    - **External_Reference - Occurs 0 to * Times**

      description: **The External_Reference class is used to reference a source outside the PDS registry system.**
      role: **Concrete**
      attribute: **reference_text** value: ***value***
      attribute: **description** value: ***value*** Optional
    - **End** External_Reference
  - **End** Reference_List
- **End** Product_Mission_PDS3

- **Product_Observational**

  description: **A Product_Observational is a set of one or more information objects produced by an observing system.**
  role: **Concrete**
    - **Identification_Area Occurs 1 Times**

      description: **The identification area consists of attributes that identify and name an object.**
      role: **Concrete**
        - **Alias_List - Occurs 0 to 1 Times**

          description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
          role: **Concrete**
            - **Alias - Occurs 1 to * Times**

              description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
              role: **Concrete**
              attribute: **alternate_id** value: ***value*** Optional
              attribute: **alternate_title** value: ***value*** Optional
              attribute: **comment** value: ***value*** Optional
            - **End** Alias
        - **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**
  attribute: **author_list** value: ***value*** Optional
  attribute: **editor_list** value: ***value*** Optional
  attribute: **publication_year** value: ***value***
  attribute: **keywords** value: ***value*** Optional
  attribute: **description** value: ***value***
- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**

  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**
    attribute: **modification_date** value: ***value***
    attribute: **version_id** value: ***value***
    attribute: **description** value: ***value***
  - **End** Modification_Detail
- **End** Modification_History
  attribute: **logical_identifier** value: ***value***
  attribute: **version_id** value: ***value***
  attribute: **title** value: ***value***
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: ***value***
- **End** Identification_Area

- **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**

  - **Time_Coordinates Occurs 1 Times**

    description: **The Time_Coordinates class provides a list of time coordinates.**
    role: **Concrete**
    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: **solar_longitude** value: ***value*** Optional
  - **End** Time_Coordinates

  - **Primary_Result_Description - Occurs 0 to 1 Times**

    description: **The Primary_Result_Description class provides a high-level description of the types of products included in the collection or bundle**
    role: **Concrete**
    attribute: **type** value: **Anaglyph, Aperture, Astrometry, B-Field_Vectors, Color, Column_Density, Comet_Nuclear_Properties, Count, Count_Rate, Data_Number, Digital_Elevation_Model, E-Field_Vectors, Electron, Environment, Filter_Curve, Filtered, Flux, Frequency, Geometry, Gravity_Model, Grism, Hardware_Temperature, High-Speed, Image, Image, Impact_Characteristics, Instrument, Ion, Lightcurve, Lines, Magnetometry, Magnitude, Magnitude, Map, Mass, Morphology, Null_Result, Parameters, Photometric, Photometry, Point_Spread_Function, Polarimetry, Pressure, Production_Rate, Pulse_Heights, Radiance, Radiometry, Shape_Model, Spectrometry, Spectrophotometry, Spectroscopy, Spectrum, Spherical_Harmonics, Spherical_Harmonics, Spin_State, Thermal, Time-Of-Flight, Triangular_Plate** Optional
    attribute: **purpose** value: **Calibration, Checkout, Engineering, Navigation, Science**
    attribute: **data_regime** value: **Dust, Dust_Particle_Counts, Electric_Field, Electrons, Far_Infrared, Gamma_Ray, Impacts, Infrared, Ions, Magnetic_Field, Mass_Spectra, Microwave, Millimeter, Near_Infrared, Optical, Particles, Radio, Sub-Millimeter, Ultraviolet, Visible, X-Ray**
    attribute: **reduction_level** value: **Analytic, Calibrated, Derived, Raw**
    attribute: **description** value: ***value*** Optional
  - **End** Primary_Result_Description

  - **Investigation_Area - Occurs 1 to * Times**

    description: **The Investigation_Area class provides iformation about an investigation (mission, observing campaign or other coordinated, large-scale data collection effort).**

role: **Concrete**

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

attribute: **type** value: **Individual_Investigation, Mission, Observing_Campaign, Other_Investigation**

- **Internal_Reference Occurs 1 Times**

  description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**

  role: **Concrete**

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

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

  attribute: **reference_type** value: ***value***

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

- **End** Internal_Reference

- **End** Investigation_Area

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

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

  role: **Concrete**

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

    description: **The Observing System Component class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. Each subsystem is categorized as either a sensor or a source. If the observing system includes both a sensor and a source, Observing System Component occurs twice (once for each type) otherwise it only occurs once.**

    role: **Concrete**

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

    attribute: **observing_system_component_type** value: **Analyst, Artificial_Illumination, Ground-based_Laboratory, Ground-based_Observatory, Ground-based_Telescope, Instrument, Literature_Search, PDS_Archived_Data, Spacecraft**

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

    - **Internal_Reference - Occurs 0 to 1 Times**

      description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**

      role: **Concrete**

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

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

      attribute: **reference_type** value: ***value***

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

    - **End** Internal_Reference

    - **External_Reference - Occurs 0 to * Times**

      description: **The External_Reference class is used to reference a source outside the PDS registry system.**

      role: **Concrete**

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

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

    - **End** External_Reference

  - **End** Observing_System_Component

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

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

- **End** Observing_System

- **Target_Identification - Occurs 1 to * Times**

  description: **The Target_Identification class provides detailed target identification information.**

  role: **Concrete**

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

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

  attribute: **type** value: ***value***

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

  - **Internal_Reference - Occurs 0 to 1 Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**

    role: **Concrete**

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

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

    attribute: **reference_type** value: ***value***

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

  - **End** Internal_Reference

- **End** Target_Identification

- **Geometry - Occurs 0 to * Times**

  description: **The Geometry class groups objects associated with geometry information.**
  role: **Concrete**
  attribute: **local_identifier** value: **value** ^{Optional}

  - **Vector - Occurs 0 to * Times**

    description: **The Vector class provides the components of either a velocity or position vector.**
    role: **Concrete**
    attribute: **name** value: **value**
    attribute: **local_identifier** value: **value** ^{Optional}
    attribute: **type** value: **POSITION, VELOCITY**
    attribute: **vector_components** value: **value**
    attribute: **description** value: **value**

    - **Vector_Component - Occurs 1 to * Times**

      description: **The Vector_Component class provides a component of a vector.**
      role: **Concrete**
      attribute: **name** value: **value** ^{Optional}
      attribute: **sequence_number** value: **value**
      attribute: **unit** value: **value** ^{Optional}
      attribute: **value** value: **value**
      attribute: **description** value: **value** ^{Optional}
    - **End** Vector_Component
  - **End** Vector
- **End** Geometry
- **Cartography - Occurs 0 to 1 Times**

  description: **The Cartography class is a placeholder for soon forthcoming Imaging cartography classes.**
  role: **Concrete**
- **End** Cartography
- **Mission_Area - Occurs 0 to * Times**

  description: **The mission area allows the insertion of mission specific metadata.**
  role: **Concrete**
- **End** Mission_Area
  attribute: **comment** value: **value** ^{Optional}
- **Node_Area - Occurs 0 to * Times**

  description: **The node area allows the insertion of node specific metadata.**
  role: **Concrete**
- **End** Node_Area
- **End** Observation_Area
- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: **value** ^{Optional}
    attribute: **lidvid_reference** value: **value** ^{Optional}
    attribute: **reference_type** value: **value**
    attribute: **comment** value: **value** ^{Optional}
  - **End** Internal_Reference
  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: **value**
    attribute: **description** value: **value** ^{Optional}
  - **End** External_Reference
- **End** Reference_List
- **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**

  - **Array_2D_Image - Occurs 0 to * Times**

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* ^{Optional}
attribute: **offset** value: *value*
attribute: **axes** value: **2**
attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
attribute: **encoding_type** value: **BINARY**
attribute: **description** value: *value* ^{Optional}

- **Display_2D_Image - Occurs 0 to 1 Times**

- **Element_Array Occurs 1 Times**

  description: **The Display_2D_Image class provides attributes to enable the display of a 2 dimensional image.**
  description: **The Element Array class is used as a component of the array class and defines an element of the array.**
  role: **Concrete**
  role: **Concrete**
  attribute: **line_display_direction** value: **DOWN, UP**
  attribute: **sample_display_direction** value: **RIGHT**
  attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
  attribute: **unit** value: *value* ^{Optional}
  attribute: **scaling_factor** value: *value* ^{Optional}
  attribute: **value_offset** value: *value* ^{Optional}
- **End** Display_2D_Image
- **End** Element_Array
- **Axis_Array Occurs 2 Times**

  description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
  role: **Concrete**
  attribute: **axis_name** value: *value*
  attribute: **sequence_number** value: *value*
  attribute: **elements** value: *value*
  attribute: **unit** value: *value* ^{Optional}

    - **Band_Bin_Set - Occurs 0 to 1 Times**

      description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging class.**
      role: **Concrete**
    - **End** Band_Bin_Set
- **End** Axis_Array
- **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: **saturated_constant** value: *value* ^{Optional}
  attribute: **missing_constant** value: *value* ^{Optional}
  attribute: **error_constant** value: *value* ^{Optional}
  attribute: **invalid_constant** value: *value* ^{Optional}
  attribute: **unknown_constant** value: *value* ^{Optional}
  attribute: **not_applicable_constant** value: *value* ^{Optional}
- **End** Special_Constants
- **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* ^{Optional}
  attribute: **maximum** value: *value* ^{Optional}
  attribute: **minimum** value: *value* ^{Optional}
  attribute: **mean** value: *value* ^{Optional}
  attribute: **standard_deviation** value: *value* ^{Optional}
  attribute: **bit_mask** value: *value* ^{Optional}
  attribute: **median** value: *value* ^{Optional}
  attribute: **md5_checksum** value: *value* ^{Optional}

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

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

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

- **End** Object_Statistics
- **End** Array_2D_Image

- **Array_2D_Map - Occurs 0 to * Times**

    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*** ^{Optional}
    attribute: **offset** value: ***value***
    attribute: **axes** value: **2**
    attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
    attribute: **encoding_type** value: **BINARY**
    attribute: **description** value: ***value*** ^{Optional}

    - **Element_Array Occurs 1 Times**

        description: **The Element Array class is used as a component of the array class and defines an element of the array.**
        role: **Concrete**
        attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
        attribute: **unit** value: ***value*** ^{Optional}

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

        attribute: **value_offset** value: ***value*** ^{Optional}
    - **End** Element_Array

    - **Axis_Array Occurs 2 Times**

        description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
        role: **Concrete**
        attribute: **axis_name** value: ***value***
        attribute: **sequence_number** value: ***value***
        attribute: **elements** value: ***value***
        attribute: **unit** value: ***value*** ^{Optional}

        - **Band_Bin_Set - Occurs 0 to 1 Times**

            description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging class.**
            role: **Concrete**
        - **End** Band_Bin_Set
    - **End** Axis_Array

    - **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: **saturated_constant** value: ***value*** ^{Optional}

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

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

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

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

        attribute: **not_applicable_constant** value: ***value*** ^{Optional}
    - **End** Special_Constants

    - **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*** ^{Optional}

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

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

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

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

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

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

        attribute: **md5_checksum** value: ***value*** ^{Optional}

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

- attribute: **minimum_scaled_value** value: **_value_** ^{Optional}
  - attribute: **description** value: **_value_** ^{Optional}
- **End** Object_Statistics
- **End** Array_2D_Map

- **Array_2D_Spectrum - Occurs 0 to * Times**

  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_** ^{Optional}
  attribute: **offset** value: **_value_**
  attribute: **axes** value: **2**
  attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: **_value_** ^{Optional}

  - **Element_Array Occurs 1 Times**

    description: **The Element Array class is used as a component of the array class and defines an element of the array.**
    role: **Concrete**
    attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
    attribute: **unit** value: **_value_** ^{Optional}
    attribute: **scaling_factor** value: **_value_** ^{Optional}
    attribute: **value_offset** value: **_value_** ^{Optional}
  - **End** Element_Array

  - **Axis_Array Occurs 2 Times**

    description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
    role: **Concrete**
    attribute: **axis_name** value: **_value_**
    attribute: **sequence_number** value: **_value_**
    attribute: **elements** value: **_value_**
    attribute: **unit** value: **_value_** ^{Optional}

    - **Band_Bin_Set - Occurs 0 to 1 Times**

      description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging class.**
      role: **Concrete**
    - **End** Band_Bin_Set
  - **End** Axis_Array

  - **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: **saturated_constant** value: **_value_** ^{Optional}
    attribute: **missing_constant** value: **_value_** ^{Optional}
    attribute: **error_constant** value: **_value_** ^{Optional}
    attribute: **invalid_constant** value: **_value_** ^{Optional}
    attribute: **unknown_constant** value: **_value_** ^{Optional}
    attribute: **not_applicable_constant** value: **_value_** ^{Optional}
  - **End** Special_Constants

  - **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_** ^{Optional}
    attribute: **maximum** value: **_value_** ^{Optional}
    attribute: **minimum** value: **_value_** ^{Optional}
    attribute: **mean** value: **_value_** ^{Optional}
    attribute: **standard_deviation** value: **_value_** ^{Optional}
    attribute: **bit_mask** value: **_value_** ^{Optional}
    attribute: **median** value: **_value_** ^{Optional}
    attribute: **md5_checksum** value: **_value_** ^{Optional}
    attribute: **maximum_scaled_value** value: **_value_** ^{Optional}

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

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

- **End** Object_Statistics
- **End** Array_2D_Spectrum

- **Array_3D_Image - Occurs 0 to * Times**

  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*** ^{Optional}
  attribute: **offset** value: ***value***
  attribute: **axes** value: **3**
  attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: ***value*** ^{Optional}

  - **Element_Array Occurs 1 Times**

    description: **The Element Array class is used as a component of the array class and defines an element of the array.**
    role: **Concrete**
    attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
    attribute: **unit** value: ***value*** ^{Optional}

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

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

    - **End** Element_Array

  - **Axis_Array Occurs 3 Times**

    description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
    role: **Concrete**
    attribute: **axis_name** value: ***value***
    attribute: **sequence_number** value: ***value***
    attribute: **elements** value: ***value***
    attribute: **unit** value: ***value*** ^{Optional}

    - **Band_Bin_Set - Occurs 0 to 1 Times**

      description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging class.**
      role: **Concrete**
      - **End** Band_Bin_Set

  - **End** Axis_Array

  - **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: **saturated_constant** value: ***value*** ^{Optional}

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

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

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

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

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

    - **End** Special_Constants

  - **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*** ^{Optional}

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

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

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

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

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

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

    attribute: **md5_checksum** value: ***value*** ^{Optional}

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

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

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

- **End** Object_Statistics
- **End** Array_3D_Image

- **Array_3D_Movie - Occurs 0 to * Times**

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*** ^{Optional}
attribute: **offset** value: ***value***
attribute: **axes** value: **3**
attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
attribute: **encoding_type** value: **BINARY**
attribute: **description** value: ***value*** ^{Optional}

- **Element_Array Occurs 1 Times**

  description: **The Element Array class is used as a component of the array class and defines an element of the array.**
  role: **Concrete**
  attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**

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

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

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

  - **End** Element_Array

- **Axis_Array Occurs 3 Times**

  description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
  role: **Concrete**
  attribute: **axis_name** value: ***value***
  attribute: **sequence_number** value: ***value***
  attribute: **elements** value: ***value***
  attribute: **unit** value: ***value*** ^{Optional}

  - **Band_Bin_Set - Occurs 0 to 1 Times**

    description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging class.**
    role: **Concrete**
    - **End** Band_Bin_Set
- **End** Axis_Array

- **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: **saturated_constant** value: ***value*** ^{Optional}

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

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

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

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

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

  - **End** Special_Constants

- **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*** ^{Optional}

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

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

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

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

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

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

  attribute: **md5_checksum** value: ***value*** ^{Optional}

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

- attribute: **minimum_scaled_value** value: **value** ^{Optional}
  - attribute: **description** value: **value** ^{Optional}
- **End** Object_Statistics
- **End** Array_3D_Movie

- **Array_3D_Spectrum - Occurs 0 to * Times**

  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** ^{Optional}
  attribute: **offset** value: **value**
  attribute: **axes** value: **3**
  attribute: **axis_index_order** value: **LAST_INDEX_FASTEST**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: **value** ^{Optional}

  - **Element_Array Occurs 1 Times**

    description: **The Element Array class is used as a component of the array class and defines an element of the array.**
    role: **Concrete**
    attribute: **data_type** value: **IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
    attribute: **unit** value: **value** ^{Optional}
    attribute: **scaling_factor** value: **value** ^{Optional}
    attribute: **value_offset** value: **value** ^{Optional}
  - **End** Element_Array

  - **Axis_Array Occurs 3 Times**

    description: **The Axis Array class is used as a component of the array class and defines an axis of the array.**
    role: **Concrete**
    attribute: **axis_name** value: **value**
    attribute: **sequence_number** value: **value**
    attribute: **elements** value: **value**
    attribute: **unit** value: **value** ^{Optional}

    - **Band_Bin_Set - Occurs 0 to 1 Times**

      description: **The Band_Bin_Set class is a placeholder for a soon forthcoming Imaging class.**
      role: **Concrete**
    - **End** Band_Bin_Set
  - **End** Axis_Array

  - **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: **saturated_constant** value: **value** ^{Optional}
    attribute: **missing_constant** value: **value** ^{Optional}
    attribute: **error_constant** value: **value** ^{Optional}
    attribute: **invalid_constant** value: **value** ^{Optional}
    attribute: **unknown_constant** value: **value** ^{Optional}
    attribute: **not_applicable_constant** value: **value** ^{Optional}
  - **End** Special_Constants

  - **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** ^{Optional}
    attribute: **maximum** value: **value** ^{Optional}
    attribute: **minimum** value: **value** ^{Optional}
    attribute: **mean** value: **value** ^{Optional}
    attribute: **standard_deviation** value: **value** ^{Optional}
    attribute: **bit_mask** value: **value** ^{Optional}
    attribute: **median** value: **value** ^{Optional}
    attribute: **md5_checksum** value: **value** ^{Optional}
    attribute: **maximum_scaled_value** value: **value** ^{Optional}

- attribute: **minimum_scaled_value** value: ***value*** ^{Optional}
- attribute: **description** value: ***value*** ^{Optional}
  - **End** Object_Statistics
- **End** Array_3D_Spectrum

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

  description: **The Header class describes a data object header.**
  role: **Concrete**
  attribute: **name** value: ***value*** ^{Optional}
  attribute: **local_identifier** value: ***value*** ^{Optional}
  attribute: **bytes** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **external_standard_id** value: **ASCII, FITS, ISIS2, ISIS3, ISIS_HISTORY, ODL, PDS1, PDS2, PDS3, TIFF, VICAR**
  attribute: **encoding_type** value: ***value***
  attribute: **description** value: ***value*** ^{Optional}
- **End** Header

- **Header_Binary - Occurs 0 to * Times**

  description: **The Header Binary class describes a data object header.**
  role: **Concrete**
  attribute: **name** value: ***value*** ^{Optional}
  attribute: **local_identifier** value: ***value*** ^{Optional}
  attribute: **bytes** value: ***value***
  attribute: **offset** value: ***value***
  attribute: **external_standard_id** value: **TIFF**
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: ***value*** ^{Optional}
- **End** Header_Binary

- **Parsable_Byte_Stream - Occurs 0 to * Times**

  description: **The Parsable Byte Stream class defines byte streams that have standard parsing rules. The Parsable Byte Stream class is the parent class for all parsable byte streams.**
  role: **Concrete**
  attribute: **name** value: ***value*** ^{Optional}
  attribute: **local_identifier** value: ***value*** ^{Optional}
  attribute: **offset** value: ***value***
  attribute: **external_standard_id** value: ***value***
  attribute: **encoding_type** value: ***value***
  attribute: **description** value: ***value*** ^{Optional}
- **End** Parsable_Byte_Stream

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

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

- **Table_Binary - Occurs 0 to * Times**

  description: **The Table Binary class is an extension of table base and defines a simple binary table.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value*** ^{Optional}
  attribute: **offset** value: ***value***
  attribute: **records** value: ***value***
  attribute: **encoding_type** value: **BINARY**
  attribute: **description** value: ***value*** ^{Optional}

  - **Uniformly_Sampled - Occurs 0 to 1 Times**

    description: **The Uniformly_Sampled class provdes parameters for a uniformly sampled table.**
    role: **Concrete**
    attribute: **sampling_parameter_name** value: ***value***
    attribute: **sampling_parameter_interval** value: ***value***
    attribute: **sampling_parameter_unit** value: ***value***
    attribute: **first_sampling_parameter_value** value: ***value***
    attribute: **last_sampling_parameter_value** value: ***value***
    attribute: **sampling_parameter_scale** value: **EXPONENTIAL, LINEAR, LOGARITHMIC** ^{Optional}

- **End** Uniformly_Sampled
- **Record_Binary Occurs 1 Times**

  description: **The Record_Binary class is a component of the table class and defines a record of the table.**
  role: **Concrete**
  attribute: **record_length** value: *value*
  attribute: **fields** value: *value*

  - **Field_Binary - Occurs 1 to * Times**

    description: **The Field_Binary class defines a field of the record.**
    role: **Concrete**
    attribute: **name** value: *value*
    attribute: **field_number** value: *value* Optional
    attribute: **field_location** value: *value*
    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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, ComplexLSB16, ComplexLSB8, ComplexMSB16, ComplexMSB8, IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**
    attribute: **field_length** value: *value* Optional
    attribute: **field_format** value: *value* Optional
    attribute: **unit** value: *value* Optional
    attribute: **scaling_factor** value: *value* Optional
    attribute: **value_offset** value: *value* Optional
    attribute: **description** value: *value* Optional

    - **Field_Statistics - Occurs 0 to 1 Times**

      description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
      role: **Concrete**
      attribute: **local_identifier** value: *value* Optional
      attribute: **maximum** value: *value* Optional
      attribute: **minimum** value: *value* Optional
      attribute: **mean** value: *value* Optional
      attribute: **standard_deviation** value: *value* Optional
      attribute: **median** value: *value* Optional
      attribute: **description** value: *value* Optional
    - **End** Field_Statistics
    - **Packed_Data_Fields - Occurs 0 to 1 Times**

      description: **The Packed_Data_Fields class contains field definitions for extracting packed data from the associated byte string field.**
      role: **Concrete**
      attribute: **description** value: *value* Optional

      - **Field_Bit - Occurs 1 to * Times**

        description: **The Field_Bit class provides parameters for extracting one field out of a string of bytes which contains packed data (that is, data values either smaller than a single byte, or crossing byte boundaries, or both.**
        role: **Concrete**
        attribute: **name** value: *value*
        attribute: **start_bit** value: *value*
        attribute: **stop_bit** value: *value*
        attribute: **data_type** value: **SignedBitString, UnsignedBitString**
        attribute: **field_format** value: *value* Optional
        attribute: **unit** value: *value* Optional
        attribute: **scaling_factor** value: *value* Optional
        attribute: **value_offset** value: *value* Optional
        attribute: **description** value: *value* Optional

        - **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: **saturated_constant** value: ***value*** Optional

    attribute: **missing_constant** value: ***value*** Optional

    attribute: **error_constant** value: ***value*** Optional

    attribute: **invalid_constant** value: ***value*** Optional

    attribute: **unknown_constant** value: ***value*** Optional

    attribute: **not_applicable_constant** value: ***value*** Optional

- **End** Special_Constants
- **End** Field_Bit

- **End** Packed_Data_Fields

- **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: **saturated_constant** value: ***value*** Optional

  attribute: **missing_constant** value: ***value*** Optional

  attribute: **error_constant** value: ***value*** Optional

  attribute: **invalid_constant** value: ***value*** Optional

  attribute: **unknown_constant** value: ***value*** Optional

  attribute: **not_applicable_constant** value: ***value*** Optional

- **End** Special_Constants

- **End** Field_Binary

- **Group_Field_Binary - Occurs 1 to * Times**

  description: **The Group_Field_Binary class allows a group of table fields.**
  role: **Concrete**
  attribute: **repetitions** value: ***value***
  attribute: **group_location** value: ***value***
  attribute: **fields** value: ***value***
  attribute: **group_length** value: ***value***

  - **Field_Binary - Occurs 1 to * Times**

    description: **The Field_Binary class defines a field of the record.**
    role: **Concrete**
    attribute: **name** value: ***value***

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

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

    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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, ComplexLSB16, ComplexLSB8, ComplexMSB16, ComplexMSB8, IEEE754LSBDouble, IEEE754LSBSingle, IEEE754MSBDouble, IEEE754MSBSingle, SignedByte, SignedLSB2, SignedLSB4, SignedLSB8, SignedMSB2, SignedMSB4, SignedMSB8, UnsignedByte, UnsignedLSB2, UnsignedLSB4, UnsignedLSB8, UnsignedMSB2, UnsignedMSB4, UnsignedMSB8**

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

    attribute: **field_format** value: ***value*** Optional

    attribute: **unit** value: ***value*** Optional

    attribute: **scaling_factor** value: ***value*** Optional

    attribute: **value_offset** value: ***value*** Optional

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

    - **Field_Statistics - Occurs 0 to 1 Times**

      description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
      role: **Concrete**

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

      attribute: **maximum** value: ***value*** Optional

      attribute: **minimum** value: ***value*** Optional

      attribute: **mean** value: ***value*** Optional

      attribute: **standard_deviation** value: ***value*** Optional

      attribute: **median** value: ***value*** Optional

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

- **End** Field_Statistics
- **Packed_Data_Fields - Occurs 0 to 1 Times**

  description: **The Packed_Data_Fields class contains field definitions for extracting packed data from the associated byte string field.**
  role: **Concrete**

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

  - **Field_Bit - Occurs 1 to * Times**

    description: **The Field_Bit class provides parameters for extracting one field out of a string of bytes which contains packed data (that is, data values either smaller than a single byte, or crossing byte boundaries, or both.**
    role: **Concrete**
    attribute: **name** value: **value**
    attribute: **start_bit** value: **value**
    attribute: **stop_bit** value: **value**
    attribute: **data_type** value: **SignedBitString, UnsignedBitString**
    attribute: **field_format** value: **value** Optional
    attribute: **unit** value: **value** Optional
    attribute: **scaling_factor** value: **value** Optional
    attribute: **value_offset** value: **value** Optional
    attribute: **description** value: **value** Optional

    - **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: **saturated_constant** value: **value** Optional
      attribute: **missing_constant** value: **value** Optional
      attribute: **error_constant** value: **value** Optional
      attribute: **invalid_constant** value: **value** Optional
      attribute: **unknown_constant** value: **value** Optional
      attribute: **not_applicable_constant** value: **value** Optional
    - **End** Special_Constants
  - **End** Field_Bit
- **End** Packed_Data_Fields
- **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: **saturated_constant** value: **value** Optional
  attribute: **missing_constant** value: **value** Optional
  attribute: **error_constant** value: **value** Optional
  attribute: **invalid_constant** value: **value** Optional
  attribute: **unknown_constant** value: **value** Optional
  attribute: **not_applicable_constant** value: **value** Optional
- **End** Special_Constants
- **End** Field_Binary
- **End** Group_Field_Binary
- **End** Record_Binary
- **End** Table_Binary
- **Table_Character - Occurs 0 to * Times**

  description: **The Table Character class is an extension of table base and defines a simple character table.**
  role: **Concrete**
  attribute: **local_identifier** value: **value** Optional
  attribute: **record_delimiter** value: **0x0A, 0x0D, 0x0D0x0A** Optional
  attribute: **offset** value: **value**
  attribute: **records** value: **value**
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **description** value: **value** Optional

  - **Uniformly_Sampled - Occurs 0 to 1 Times**

    description: **The Uniformly_Sampled class provdes parameters for a uniformly sampled table.**
    role: **Concrete**
    attribute: **sampling_parameter_name** value: **value**
    attribute: **sampling_parameter_interval** value: **value**
    attribute: **sampling_parameter_unit** value: **value**

attribute: **first_sampling_parameter_value** value: ***value***
attribute: **last_sampling_parameter_value** value: ***value***
attribute: **sampling_parameter_scale** value: **EXPONENTIAL, LINEAR, LOGARITHMIC** ^{Optional}
- **End** Uniformly_Sampled

- **Record_Character Occurs 1 Times**

  description: **The Record_Character class is a component of the table class and defines a record of the table.**
  role: **Concrete**
  attribute: **record_length** value: ***value***
  attribute: **fields** value: ***value***

  - **Field_Character - Occurs 1 to * Times**

    description: **The Field_Character class defines a field of the record.**
    role: **Concrete**
    attribute: **name** value: ***value***
    attribute: **field_number** value: ***value*** ^{Optional}
    attribute: **field_location** value: ***value***
    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** ^{Optional}
    attribute: **field_format** value: ***value*** ^{Optional}
    attribute: **unit** value: ***value*** ^{Optional}
    attribute: **scaling_factor** value: ***value*** ^{Optional}
    attribute: **value_offset** value: ***value*** ^{Optional}
    attribute: **description** value: ***value*** ^{Optional}

    - **Field_Statistics - Occurs 0 to 1 Times**

      description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
      role: **Concrete**
      attribute: **local_identifier** value: ***value*** ^{Optional}
      attribute: **maximum** value: ***value*** ^{Optional}
      attribute: **minimum** value: ***value*** ^{Optional}
      attribute: **mean** value: ***value*** ^{Optional}
      attribute: **standard_deviation** value: ***value*** ^{Optional}
      attribute: **median** value: ***value*** ^{Optional}
      attribute: **description** value: ***value*** ^{Optional}
      - **End** Field_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: **saturated_constant** value: ***value*** ^{Optional}
      attribute: **missing_constant** value: ***value*** ^{Optional}
      attribute: **error_constant** value: ***value*** ^{Optional}
      attribute: **invalid_constant** value: ***value*** ^{Optional}
      attribute: **unknown_constant** value: ***value*** ^{Optional}
      attribute: **not_applicable_constant** value: ***value*** ^{Optional}
      - **End** Special_Constants
  - **End** Field_Character

  - **Group_Field_Character - Occurs 1 to * Times**

    description: **The Group_Field_Character class allows a group of table fields.**
    role: **Concrete**
    attribute: **repetitions** value: ***value***
    attribute: **group_location** value: ***value***
    attribute: **fields** value: ***value***
    attribute: **group_length** value: ***value***

    - **Field_Character - Occurs 0 to * Times**

      description: **The Field_Character class defines a field of the record.**
      role: **Concrete**
      attribute: **name** value: ***value***

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

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

attribute: **data_type** value: ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** ^{Optional}

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

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

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

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

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

- **Field_Statistics - Occurs 0 to 1 Times**

  description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
  role: **Concrete**

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

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

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

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

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

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

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

- **End** Field_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: **saturated_constant** value: ***value*** ^{Optional}

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

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

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

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

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

- **End** Special_Constants
- **End** Field_Character
- **End** Group_Field_Character
- **End** Record_Character
- **End** Table_Character

- **Table_Delimited - Occurs 0 to * Times**

description: **The Table_Delimited class defines a simple table (spreadsheet) with delimited fields and records.**
role: **Concrete**

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

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

attribute: **field_delimiter** value: **0x09, 0x2C, 0x3B, 0x7C**

attribute: **record_delimiter** value: **0x0A, 0x0D, 0x0D0x0A**

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

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

attribute: **external_standard_id** value: **PDS_CSV**

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

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

- **Uniformly_Sampled - Occurs 0 to 1 Times**

  description: **The Uniformly_Sampled class provdes parameters for a uniformly sampled table.**
  role: **Concrete**
  attribute: **sampling_parameter_name** value: ***value***
  attribute: **sampling_parameter_interval** value: ***value***
  attribute: **sampling_parameter_unit** value: ***value***
  attribute: **first_sampling_parameter_value** value: ***value***
  attribute: **last_sampling_parameter_value** value: ***value***
  attribute: **sampling_parameter_scale** value: **EXPONENTIAL, LINEAR, LOGARITHMIC** ^{Optional}
- **End** Uniformly_Sampled

- **Record_Delimited Occurs 1 Times**

  description: **The Record_Delimited class is a component of the delimited table (spreadsheet) class and defines a record of the delimited table.**
  role: **Concrete**
  attribute: **maximum_record_length** value: ***value*** Optional
  attribute: **fields** value: ***value***

  - **Field_Delimited - Occurs 1 to * Times**

    description: **The Field_Delimited class defines a field of the record.**
    role: **Concrete**
    attribute: **name** value: ***value***
    attribute: **field_number** value: ***value*** Optional
    attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** Optional
    attribute: **field_format** value: ***value*** Optional
    attribute: **unit** value: ***value*** Optional
    attribute: **scaling_factor** value: ***value*** Optional
    attribute: **value_offset** value: ***value*** Optional
    attribute: **description** value: ***value*** Optional

    - **Field_Statistics - Occurs 0 to 1 Times**

      description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
      role: **Concrete**
      attribute: **local_identifier** value: ***value*** Optional
      attribute: **maximum** value: ***value*** Optional
      attribute: **minimum** value: ***value*** Optional
      attribute: **mean** value: ***value*** Optional
      attribute: **standard_deviation** value: ***value*** Optional
      attribute: **median** value: ***value*** Optional
      attribute: **description** value: ***value*** Optional
    - **End** Field_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: **saturated_constant** value: ***value*** Optional
      attribute: **missing_constant** value: ***value*** Optional
      attribute: **error_constant** value: ***value*** Optional
      attribute: **invalid_constant** value: ***value*** Optional
      attribute: **unknown_constant** value: ***value*** Optional
      attribute: **not_applicable_constant** value: ***value*** Optional
    - **End** Special_Constants
  - **End** Field_Delimited
  - **Group_Field_Delimited - Occurs 1 to * Times**

    description: **The FIeld_Group_Delimited class allows a group of delimited fields.**
    role: **Concrete**
    attribute: **repetitions** value: ***value***
    attribute: **fields** value: ***value***

    - **Field_Delimited - Occurs 1 to * Times**

      description: **The Field_Delimited class defines a field of the record.**
      role: **Concrete**
      attribute: **name** value: ***value***
      attribute: **field_number** value: ***value*** Optional
      attribute: **data_type** value: **ASCII_AnyURI, ASCII_Boolean, ASCII_DOI, ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_UTC, ASCII_Date_Time_YMD, ASCII_Date_YMD, ASCII_File_Name, 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_length** value: ***value*** Optional

attribute: **field_format** value: ***value*** Optional

attribute: **unit** value: ***value*** Optional

attribute: **scaling_factor** value: ***value*** Optional

attribute: **value_offset** value: ***value*** Optional

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

- **Field_Statistics - Occurs 0 to 1 Times**

  description: **The Field Statistics class provides a set of metrics for a column formed by a field in a repeating record.**
  role: **Concrete**
  attribute: **local_identifier** value: ***value*** Optional

  attribute: **maximum** value: ***value*** Optional

  attribute: **minimum** value: ***value*** Optional

  attribute: **mean** value: ***value*** Optional

  attribute: **standard_deviation** value: ***value*** Optional

  attribute: **median** value: ***value*** Optional

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

- **End** Field_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: **saturated_constant** value: ***value*** Optional

  attribute: **missing_constant** value: ***value*** Optional

  attribute: **error_constant** value: ***value*** Optional

  attribute: **invalid_constant** value: ***value*** Optional

  attribute: **unknown_constant** value: ***value*** Optional

  attribute: **not_applicable_constant** value: ***value*** Optional

- **End** Special_Constants
- **End** Field_Delimited
- **End** Group_Field_Delimited
- **End** Record_Delimited
- **End** Table_Delimited
- **File Occurs 1 Times**

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

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

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

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

  attribute: **maximum_record_bytes** value: ***value*** Optional

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

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

- **End** File
- **End** File_Area_Observational
- **End** Product_Observational

- **Product_Proxy_PDS3**

  description: **The Product Proxy PDS class defines a product with enough information to to register a PDS3 data product.**
  role: **Concrete**
  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**
    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**
      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: ***value*** Optional

attribute: **alternate_title** value: **_value_** ^{Optional}

attribute: **comment** value: **_value_** ^{Optional}

- **End** Alias

- **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**

  attribute: **author_list** value: **_value_** ^{Optional}

  attribute: **editor_list** value: **_value_** ^{Optional}

  attribute: **publication_year** value: **_value_**

  attribute: **keywords** value: **_value_** ^{Optional}

  attribute: **description** value: **_value_**

- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**

  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**

    attribute: **modification_date** value: **_value_**

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

    attribute: **description** value: **_value_**

    - **End** Modification_Detail

- **End** Modification_History

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

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

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

  attribute: **information_model_version** value: **0.7.0.0.j**

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

- **End** Identification_Area

- **File_Area_Binary - Occurs 1 to * Times**

  description: **The File Area Binary class describes a file that contains an encoded byte stream.**
  role: **Concrete**

  - **Encoded_Binary - Occurs 0 to * Times**

    description: **The Encoded Binary class describes a binary encoded byte stream.This class is used to describe files in the repository that are being registered using Product_File_Repository.**
    role: **Concrete**

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

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

    attribute: **external_standard_id** value: **System**

    attribute: **encoding_type** value: **BINARY**

    attribute: **description** value: **_value_** ^{Optional}

    - **End** Encoded_Binary

  - **File Occurs 1 Times**

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

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

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

    attribute: **creation_date_time** value: **_value_** ^{Optional}

    attribute: **file_size** value: **_value_** ^{Optional}

    attribute: **records** value: **_value_** ^{Optional}

    attribute: **maximum_record_bytes** value: **_value_** ^{Optional}

    attribute: **md5_checksum** value: **_value_** ^{Optional}

    attribute: **comment** value: **_value_** ^{Optional}

    - **End** File

- **End** File_Area_Binary

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
role: **Concrete**

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

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

attribute: **reference_type** value: **value**

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

- **End** Internal_Reference

- **External_Reference - Occurs 0 to * Times**

  description: **The External_Reference class is used to reference a source outside the PDS registry system.**
  role: **Concrete**
  attribute: **reference_text** value: **value**

  attribute: **description** value: **value** ^{Optional}
  - **End** External_Reference
- **End** Reference_List
- **End** Product_Proxy_PDS3

- **Product_Service**

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

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: **value** ^{Optional}

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

        attribute: **comment** value: **value** ^{Optional}
        - **End** Alias
    - **End** Alias_List

    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**
      attribute: **author_list** value: **value** ^{Optional}

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

      attribute: **publication_year** value: **value**

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

      attribute: **description** value: **value**
    - **End** Citation_Information

    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**

      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
        role: **Concrete**
        attribute: **modification_date** value: **value**
        attribute: **version_id** value: **value**
        attribute: **description** value: **value**
      - **End** Modification_Detail
    - **End** Modification_History
      attribute: **logical_identifier** value: **value**
      attribute: **version_id** value: **value**

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

attribute: **information_model_version** value: **0.7.0.0.j**

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

- **End** Identification_Area

- **File_Area_Service_Description - Occurs 0 to * Times**

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

  - **Service_Description - Occurs 0 to * Times**

    description: **The Service Description class defines a file that contains a standardized service specification.**
    role: **Concrete**

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

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

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

    attribute: **external_standard_id** value: **WADL, WSDL**

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

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

    - **End** Service_Description

  - **File Occurs 1 Times**

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

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

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

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

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

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

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

    attribute: **md5_checksum** value: *value* ^{Optional}

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

    - **End** File

- **End** File_Area_Service_Description

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**

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

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

    attribute: **reference_type** value: *value*

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

    - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**

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

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

    - **End** External_Reference

  - **End** Reference_List

- **End** Product_Service

- **Product_Software**

  description: **Product Software is a product consisting of a set of one or more software formats.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**

role: **Concrete**

- **Alias - Occurs 1 to * Times**

  description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
  role: **Concrete**
  attribute: **alternate_id** value: ***value*** ^{Optional}
  attribute: **alternate_title** value: ***value*** ^{Optional}
  attribute: **comment** value: ***value*** ^{Optional}
  - **End** Alias
- **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**
  attribute: **author_list** value: ***value*** ^{Optional}
  attribute: **editor_list** value: ***value*** ^{Optional}
  attribute: **publication_year** value: ***value***
  attribute: **keywords** value: ***value*** ^{Optional}
  attribute: **description** value: ***value***
- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**

  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**
    attribute: **modification_date** value: ***value***
    attribute: **version_id** value: ***value***
    attribute: **description** value: ***value***
    - **End** Modification_Detail
- **End** Modification_History
  attribute: **logical_identifier** value: ***value***
  attribute: **version_id** value: ***value***
  attribute: **title** value: ***value***
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: ***value***
- **End** Identification_Area

- **Software_Desc Occurs 1 Times**

  description: **The Software Desc class describes a software product**
  role: **Concrete**
  attribute: **name** value: ***value***
  attribute: **version_id** value: ***value***
  attribute: **author_list** value: ***value*** ^{Optional}
  attribute: **programmers_manual_identifier** value: ***value***
  attribute: **software_id** value: ***value***
  attribute: **software_type** value: ***value***
  attribute: **users_manual_identifier** value: ***value***
  attribute: **description** value: ***value***
- **End** Software_Desc

- **Software_Binary - Occurs 0 to * Times**

  description: **The Software Script class provides a description of a software code that is stored as a compiled binary file.**
  role: **Concrete**
  attribute: **files** value: ***value***
  attribute: **os_version** value: ***value***
  attribute: **program_notes_identifier** value: ***value***
  attribute: **supported_architecture** value: ***value***
  attribute: **supported_os** value: ***value***
  attribute: **sw_format_type** value: ***value***
  attribute: **system_requirements** value: ***value***
- **End** Software_Binary

- **Software_Script - Occurs 0 to * Times**

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

role: **Concrete**
attribute: **files** value: **value**
attribute: **install_notes** value: **value**
attribute: **supported_environment** value: **value**
attribute: **system_requirements** value: **value**
- **End** Software_Script

- **Software_Source - Occurs 0 to * Times**

  description: **The Software Script class provides a description of a software code that is stored as source code.**
  role: **Concrete**
  attribute: **compile_notes** value: **value**
  attribute: **files** value: **value**
  attribute: **os_version** value: **value**
  attribute: **program_notes_identifier** value: **value**
  attribute: **software_dialect** value: **value**
  attribute: **software_language** value: **value**
  attribute: **supported_architecture** value: **value**
  attribute: **supported_os** value: **value**
  attribute: **sw_format_type** value: **value**
  attribute: **system_requirements** value: **value**
- **End** Software_Source

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: **value** Optional
    attribute: **lidvid_reference** value: **value** Optional
    attribute: **reference_type** value: **value**
    attribute: **comment** value: **value** Optional
    - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: **value**
    attribute: **description** value: **value** Optional
    - **End** External_Reference
  - **End** Reference_List
- **End** Product_Software

- **Product_SPICE_Kernel**

  description: **The Product SPICE Kernel class defines a SPICE kernel product.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: **value** Optional
        attribute: **alternate_title** value: **value** Optional
        attribute: **comment** value: **value** Optional
        - **End** Alias
      - **End** Alias_List

    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in**

journal articles, abstract services, and other reference contexts.
role: **Concrete**
attribute: **author_list** value: **value** Optional
attribute: **editor_list** value: **value** Optional
attribute: **publication_year** value: **value**
attribute: **keywords** value: **value** Optional
attribute: **description** value: **value**
- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**
      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
        role: **Concrete**
        attribute: **modification_date** value: **value**
        attribute: **version_id** value: **value**
        attribute: **description** value: **value**
      - **End** Modification_Detail
- **End** Modification_History
  attribute: **logical_identifier** value: **value**
  attribute: **version_id** value: **value**
  attribute: **title** value: **value**
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: **value**
- **End** Identification_Area

- **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**
      - **Time_Coordinates Occurs 1 Times**

        description: **The Time_Coordinates class provides a list of time coordinates.**
        role: **Concrete**
        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: **solar_longitude** value: **value** Optional
      - **End** Time_Coordinates

      - **Primary_Result_Description - Occurs 0 to 1 Times**

        description: **The Primary_Result_Description class provides a high-level description of the types of products included in the collection or bundle**
        role: **Concrete**
        attribute: **type** value: **Anaglyph, Aperture, Astrometry, B-Field_Vectors, Color, Column_Density, Comet_Nuclear_Properties, Count, Count_Rate, Data_Number, Digital_Elevation_Model, E-Field_Vectors, Electron, Environment, Filter_Curve, Filtered, Flux, Frequency, Geometry, Gravity_Model, Grism, Hardware_Temperature, High-Speed, Image, Image, Impact_Characteristics, Instrument, Ion, Lightcurve, Lines, Magnetometry, Magnitude, Magnitude, Map, Mass, Morphology, Null_Result, Parameters, Photometric, Photometry, Point_Spread_Function, Polarimetry, Pressure, Production_Rate, Pulse_Heights, Radiance, Radiometry, Shape_Model, Spectrometry, Spectrophotometry, Spectroscopy, Spectrum, Spherical_Harmonics, Spherical_Harmonics, Spin_State, Thermal, Time-Of-Flight, Triangular_Plate** Optional
        attribute: **purpose** value: **Calibration, Checkout, Engineering, Navigation, Science**
        attribute: **data_regime** value: **Dust, Dust_Particle_Counts, Electric_Field, Electrons, Far_Infrared, Gamma_Ray, Impacts, Infrared, Ions, Magnetic_Field, Mass_Spectra, Microwave, Millimeter, Near_Infrared, Optical, Particles, Radio, Sub-Millimeter, Ultraviolet, Visible, X-Ray**
        attribute: **reduction_level** value: **Analytic, Calibrated, Derived, Raw**
        attribute: **description** value: **value** Optional
      - **End** Primary_Result_Description

      - **Investigation_Area - Occurs 1 to * Times**

        description: **The Investigation_Area class provides iformation about an investigation (mission, observing campaign or other coordinated, large-scale data collection effort).**
        role: **Concrete**
        attribute: **name** value: **value**
        attribute: **type** value: **Individual_Investigation, Mission, Observing_Campaign, Other_Investigation**

- **Internal_Reference Occurs 1 Times**

  description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
  role: **Concrete**
  attribute: **lid_reference** value: ***value*** ^{Optional}
  attribute: **lidvid_reference** value: ***value*** ^{Optional}
  attribute: **reference_type** value: ***value***
  attribute: **comment** value: ***value*** ^{Optional}
  - **End** Internal_Reference
- **End** Investigation_Area
- **Observing_System - Occurs 0 to * Times**

  description: **The Observing System class describes the entire suite used to collect the data.**
  role: **Concrete**
  - **Observing_System_Component - Occurs 1 to * Times**

    description: **The Observing System Component class references one or more subsystems used to collect data. A subsystem can be an instrument_host, instrument, or any other similar product. Each subsystem is categorized as either a sensor or a source. If the observing system includes both a sensor and a source, Observing System Component occurs twice (once for each type) otherwise it only occurs once.**
    role: **Concrete**
    attribute: **name** value: ***value***
    attribute: **observing_system_component_type** value: **Analyst, Artificial_Illumination, Ground-based_Laboratory, Ground-based_Observatory, Ground-based_Telescope, Instrument, Literature_Search, PDS_Archived_Data, Spacecraft**
    attribute: **description** value: ***value*** ^{Optional}
    - **Internal_Reference - Occurs 0 to 1 Times**

      description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
      role: **Concrete**
      attribute: **lid_reference** value: ***value*** ^{Optional}
      attribute: **lidvid_reference** value: ***value*** ^{Optional}
      attribute: **reference_type** value: ***value***
      attribute: **comment** value: ***value*** ^{Optional}
      - **End** Internal_Reference
    - **External_Reference - Occurs 0 to * Times**

      description: **The External_Reference class is used to reference a source outside the PDS registry system.**
      role: **Concrete**
      attribute: **reference_text** value: ***value***
      attribute: **description** value: ***value*** ^{Optional}
      - **End** External_Reference
  - **End** Observing_System_Component
    attribute: **name** value: ***value*** ^{Optional}
    attribute: **description** value: ***value*** ^{Optional}
- **End** Observing_System
- **Target_Identification - Occurs 1 to * Times**

  description: **The Target_Identification class provides detailed target identification information.**
  role: **Concrete**
  attribute: **name** value: ***value***
  attribute: **alternate_designation** value: ***value*** ^{Optional}
  attribute: **type** value: ***value***
  attribute: **description** value: ***value*** ^{Optional}
  - **Internal_Reference - Occurs 0 to 1 Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: ***value*** ^{Optional}
    attribute: **lidvid_reference** value: ***value*** ^{Optional}
    attribute: **reference_type** value: ***value***
    attribute: **comment** value: ***value*** ^{Optional}
    - **End** Internal_Reference
- **End** Target_Identification
- **Geometry - Occurs 0 to * Times**

  description: **The Geometry class groups objects associated with geometry information.**

role: **Concrete**

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

- **Vector - Occurs 0 to * Times**

  description: **The Vector class provides the components of either a velocity or position vector.**
  role: **Concrete**

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

  attribute: **local_identifier** value: ***value*** ^{Optional}
  attribute: **type** value: **POSITION, VELOCITY**
  attribute: **vector_components** value: ***value***
  attribute: **description** value: ***value***

  - **Vector_Component - Occurs 1 to * Times**

    description: **The Vector_Component class provides a component of a vector.**
    role: **Concrete**

    attribute: **name** value: ***value*** ^{Optional}
    attribute: **sequence_number** value: ***value***

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

    attribute: **description** value: ***value*** ^{Optional}
  - **End** Vector_Component
- **End** Vector

- **End** Geometry
- **Cartography - Occurs 0 to 1 Times**

  description: **The Cartography class is a placeholder for soon forthcoming Imaging cartography classes.**
  role: **Concrete**
- **End** Cartography
- **Mission_Area - Occurs 0 to * Times**

  description: **The mission area allows the insertion of mission specific metadata.**
  role: **Concrete**
- **End** Mission_Area

  attribute: **comment** value: ***value*** ^{Optional}
- **Node_Area - Occurs 0 to * Times**

  description: **The node area allows the insertion of node specific metadata.**
  role: **Concrete**
- **End** Node_Area
- **End** Observation_Area
- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**

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

    attribute: **lidvid_reference** value: ***value*** ^{Optional}
    attribute: **reference_type** value: ***value***

    attribute: **comment** value: ***value*** ^{Optional}
  - **End** Internal_Reference
  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**

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

    attribute: **description** value: ***value*** ^{Optional}
  - **End** External_Reference
- **End** Reference_List
- **File_Area_SPICE_Kernel Occurs 1 Times**

  description: **The File Area SPICE Kernel class describes a file that contains a SPICE Kernel object.**
  role: **Concrete**

  - **SPICE_Kernel Occurs 1 Times**

    description: **The SPICE Kernel class describes a SPICE file.**
    role: **Concrete**

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

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

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

attribute: **external_standard_id** value: **SPICE**

attribute: **kernel_type** value: **CK, DBK, DSK, EK, FK, IK, LSK, MK, PCK, SCLK, SPK**

attribute: **encoding_type** value: **BINARY, CHARACTER**

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

- **End** SPICE_Kernel

- **File Occurs 1 Times**

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

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

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

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

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

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

  attribute: **md5_checksum** value: *value* ^{Optional}

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

  - **End** File
- **End** File_Area_SPICE_Kernel
- **End** Product_SPICE_Kernel

- ## Product_Subscription_PDS3

  description: **The Product_Subscription_PDS3 class provides the list of subscriptions for a PDS3 subscriber.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**

      - **Alias - Occurs 1 to * Times**

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

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

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

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

        - **End** Alias
      - **End** Alias_List

    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**

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

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

      attribute: **publication_year** value: *value*

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

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

      - **End** Citation_Information

    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**

      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
        role: **Concrete**
        attribute: **modification_date** value: *value*

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

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

        - **End** Modification_Detail

- **End** Modification_History
    attribute: **logical_identifier** value: *value*
    attribute: **version_id** value: *value*
    attribute: **title** value: *value*
    attribute: **information_model_version** value: **0.7.0.0.j**
    attribute: **product_class** value: *value*
- **End** Identification_Area
- **Subscriber_PDS3 Occurs 1 Times**

    description: **The Subscriber PDS3 class provides the name of the subscriber and their subscription list.**
    role: **Concrete**
    attribute: **full_name** value: *value*
    attribute: **local_identifier** value: *value* Optional
    attribute: **subscription_id** value: *value*
- **End** Subscriber_PDS3
- **Reference_List - Occurs 0 to 1 Times**

    description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
    role: **Concrete**
    - **Internal_Reference - Occurs 0 to * Times**

        description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
        role: **Concrete**
        attribute: **lid_reference** value: *value* Optional
        attribute: **lidvid_reference** value: *value* Optional
        attribute: **reference_type** value: *value*
        attribute: **comment** value: *value* Optional
    - **End** Internal_Reference
    - **External_Reference - Occurs 0 to * Times**

        description: **The External_Reference class is used to reference a source outside the PDS registry system.**
        role: **Concrete**
        attribute: **reference_text** value: *value*
        attribute: **description** value: *value* Optional
    - **End** External_Reference
- **End** Reference_List
- **End** Product_Subscription_PDS3

- **Product_Target_PDS3**

    description: **A target product describes a target. This product captures a reduced set of the PDS3 catalog target information.**
    role: **Concrete**
    - **Identification_Area Occurs 1 Times**

        description: **The identification area consists of attributes that identify and name an object.**
        role: **Concrete**
        - **Alias_List - Occurs 0 to 1 Times**

            description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
            role: **Concrete**
            - **Alias - Occurs 1 to * Times**

                description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
                role: **Concrete**
                attribute: **alternate_id** value: *value* Optional
                attribute: **alternate_title** value: *value* Optional
                attribute: **comment** value: *value* Optional
            - **End** Alias
        - **End** Alias_List
        - **Citation_Information - Occurs 0 to 1 Times**

            description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
            role: **Concrete**
            attribute: **author_list** value: *value* Optional
            attribute: **editor_list** value: *value* Optional
            attribute: **publication_year** value: *value*

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

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

- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**

  role: **Concrete**

  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**

    role: **Concrete**

    attribute: **modification_date** value: *value*

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

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

  - **End** Modification_Detail

- **End** Modification_History

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

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

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

  attribute: **information_model_version** value: **0.7.0.0.j**

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

- **End** Identification_Area

- **Target_PDS3 Occurs 1 Times**

  description: **The Target class provides a description of a phyiscal object that is the object of data collection. This class captures the PDS3 catalog Target information.**

  role: **Concrete**

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

  attribute: **primary_body_name** value: *value*

  attribute: **target_desc** value: *value*

  attribute: **target_type** value: *value*

- **End** Target_PDS3

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**

  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**

    role: **Concrete**

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

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

    attribute: **reference_type** value: *value*

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

  - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**

    role: **Concrete**

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

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

  - **End** External_Reference

- **End** Reference_List

- **End** Product_Target_PDS3

- **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**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**

      role: **Concrete**

- **Alias - Occurs 1 to * Times**

  description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
  role: **Concrete**
  attribute: **alternate_id** value: **value** Optional
  attribute: **alternate_title** value: **value** Optional
  attribute: **comment** value: **value** Optional
  - **End** Alias
- **End** Alias_List
- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**
  attribute: **author_list** value: **value** Optional
  attribute: **editor_list** value: **value** Optional
  attribute: **publication_year** value: **value**
  attribute: **keywords** value: **value** Optional
  attribute: **description** value: **value**
- **End** Citation_Information
- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**
  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**
    attribute: **modification_date** value: **value**
    attribute: **version_id** value: **value**
    attribute: **description** value: **value**
    - **End** Modification_Detail
- **End** Modification_History
  attribute: **logical_identifier** value: **value**
  attribute: **version_id** value: **value**
  attribute: **title** value: **value**
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: **value**
- **End** Identification_Area
- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**
  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: **value** Optional
    attribute: **lidvid_reference** value: **value** Optional
    attribute: **reference_type** value: **value**
    attribute: **comment** value: **value** Optional
    - **End** Internal_Reference
  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: **value**
    attribute: **description** value: **value** Optional
    - **End** External_Reference
- **End** Reference_List
- **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**
  - **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*** Optional

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

attribute: **external_standard_id** value: **GIF, JPEG, PDF, PNG, TIFF**

attribute: **encoding_type** value: **BINARY**

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

- **End** Encoded_Image

- **File Occurs 1 Times**

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

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

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

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

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

  attribute: **maximum_record_bytes** value: ***value*** Optional

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

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

  - **End** File
- **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**

  - **Alias_List - Occurs 0 to 1 Times**

    description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
    role: **Concrete**

    - **Alias - Occurs 1 to * Times**

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

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

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

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

      - **End** Alias
  - **End** Alias_List

  - **Citation_Information - Occurs 0 to 1 Times**

    description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
    role: **Concrete**

    attribute: **author_list** value: ***value*** Optional

    attribute: **editor_list** value: ***value*** Optional

    attribute: **publication_year** value: ***value***

    attribute: **keywords** value: ***value*** Optional

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

    - **End** Citation_Information

  - **Modification_History - Occurs 0 to 1 Times**

    description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
    role: **Concrete**

    - **Modification_Detail Occurs 1 Times**

      description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
      role: **Concrete**
      attribute: **modification_date** value: ***value***

- attribute: **version_id** value: *value*
- attribute: **description** value: *value*
  - **End** Modification_Detail
- **End** Modification_History
  - attribute: **logical_identifier** value: *value*
  - attribute: **version_id** value: *value*
  - attribute: **title** value: *value*
  - attribute: **information_model_version** value: **0.7.0.0.j**
  - attribute: **product_class** value: *value*
- **End** Identification_Area

- **Update Occurs 1 Times**

  description: **The Update class consists of update information.**
  role: **Concrete**
  attribute: **local_identifier** value: *value* Optional
  attribute: **description** value: *value* Optional

  - **Update_Entry - Occurs 1 to * Times**

    description: **The Update Entry class provides the date and description of an update.**
    role: **Concrete**
    attribute: **date_time** value: *value*
    attribute: **full_name** value: *value*
    attribute: **description** value: *value*

    - **Internal_Reference - Occurs 0 to 1 Times**

      description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
      role: **Concrete**
      attribute: **lid_reference** value: *value* Optional
      attribute: **lidvid_reference** value: *value* Optional
      attribute: **reference_type** value: *value*
      attribute: **comment** value: *value* Optional
    - **End** Internal_Reference
  - **End** Update_Entry
- **End** Update

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: *value* Optional
    attribute: **lidvid_reference** value: *value* Optional
    attribute: **reference_type** value: *value*
    attribute: **comment** value: *value* Optional
  - **End** Internal_Reference
  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: *value*
    attribute: **description** value: *value* Optional
  - **End** External_Reference
- **End** Reference_List
- **End** Product_Update

- **Product_XML_Schema**

  description: **The Product_XML_Schema describes a resource used for the PDS4 implementation into XML.**
  role: **Concrete**

  - **Identification_Area Occurs 1 Times**

    description: **The identification area consists of attributes that identify and name an object.**
    role: **Concrete**

    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**

role: **Concrete**

- **Alias - Occurs 1 to * Times**

  description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
  role: **Concrete**
  attribute: **alternate_id** value: **value** ^{Optional}
  attribute: **alternate_title** value: **value** ^{Optional}
  attribute: **comment** value: **value** ^{Optional}
  - **End** Alias
- **End** Alias_List

- **Citation_Information - Occurs 0 to 1 Times**

  description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
  role: **Concrete**
  attribute: **author_list** value: **value** ^{Optional}
  attribute: **editor_list** value: **value** ^{Optional}
  attribute: **publication_year** value: **value**
  attribute: **keywords** value: **value** ^{Optional}
  attribute: **description** value: **value**
- **End** Citation_Information

- **Modification_History - Occurs 0 to 1 Times**

  description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
  role: **Concrete**

  - **Modification_Detail Occurs 1 Times**

    description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**
    role: **Concrete**
    attribute: **modification_date** value: **value**
    attribute: **version_id** value: **value**
    attribute: **description** value: **value**
    - **End** Modification_Detail
- **End** Modification_History
  attribute: **logical_identifier** value: **value**
  attribute: **version_id** value: **value**
  attribute: **title** value: **value**
  attribute: **information_model_version** value: **0.7.0.0.j**
  attribute: **product_class** value: **value**
- **End** Identification_Area

- **Reference_List - Occurs 0 to 1 Times**

  description: **The Reference_List class provides lists general references and cross-references for the product. References cited elsewhere in the label need not be repeated here.**
  role: **Concrete**

  - **Internal_Reference - Occurs 0 to * Times**

    description: **The Internal_Reference class is used to cross-reference other products in the PDS registry system.**
    role: **Concrete**
    attribute: **lid_reference** value: **value** ^{Optional}
    attribute: **lidvid_reference** value: **value** ^{Optional}
    attribute: **reference_type** value: **value**
    attribute: **comment** value: **value** ^{Optional}
  - **End** Internal_Reference

  - **External_Reference - Occurs 0 to * Times**

    description: **The External_Reference class is used to reference a source outside the PDS registry system.**
    role: **Concrete**
    attribute: **reference_text** value: **value**
    attribute: **description** value: **value** ^{Optional}
  - **End** External_Reference
- **End** Reference_List

- **File_Area_XML_Schema Occurs 1 Times**

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

- **XML_Schema Occurs 1 Times**

  description: **The XML Schema class defines a resource used for the PDS4 implementation into XML.**
  role: **Concrete**
  attribute: **name** value: **value** Optional
  attribute: **local_identifier** value: **value** Optional
  attribute: **offset** value: **value**
  attribute: **external_standard_id** value: **Schematron, XML_Catalog, XML_Schema**
  attribute: **encoding_type** value: **CHARACTER**
  attribute: **description** value: **value** Optional
- **End** XML_Schema
- **File Occurs 1 Times**

  description: **The File class consists of attributes that describe a file in a data store.**
  role: **Concrete**
  attribute: **file_name** value: **value**
  attribute: **local_identifier** value: **value** Optional
  attribute: **creation_date_time** value: **value** Optional
  attribute: **file_size** value: **value** Optional
  attribute: **records** value: **value** Optional
  attribute: **maximum_record_bytes** value: **value** Optional
  attribute: **md5_checksum** value: **value** Optional
  attribute: **comment** value: **value** Optional
- **End** File
- **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**
    - **Alias_List - Occurs 0 to 1 Times**

      description: **The Alias_List class provides a list of paired alternate names and identifications for this product in this or some other archive or data system.**
      role: **Concrete**
      - **Alias - Occurs 1 to * Times**

        description: **The Alias class provides a single alternate name and identification for this product in this or some other archive or data system.**
        role: **Concrete**
        attribute: **alternate_id** value: **value** Optional
        attribute: **alternate_title** value: **value** Optional
        attribute: **comment** value: **value** Optional
      - **End** Alias
    - **End** Alias_List
    - **Citation_Information - Occurs 0 to 1 Times**

      description: **The Citation_Information class provides specific fields often used in citing the product in journal articles, abstract services, and other reference contexts.**
      role: **Concrete**
      attribute: **author_list** value: **value** Optional
      attribute: **editor_list** value: **value** Optional
      attribute: **publication_year** value: **value**
      attribute: **keywords** value: **value** Optional
      attribute: **description** value: **value**
    - **End** Citation_Information
    - **Modification_History - Occurs 0 to 1 Times**

      description: **The Modification_History class tracks the history of changes made to the product once it enters the registry system.**
      role: **Concrete**
      - **Modification_Detail Occurs 1 Times**

        description: **The Modification_Detail class provides the details of one round of modification for the product. The first, required, instance of this class documents the date the product was first registered.**

- role: **Concrete**
  - attribute: **modification_date** value: *value*
  - attribute: **version_id** value: *value*
  - attribute: **description** value: *value*
  - **End** Modification_Detail
- **End** Modification_History
  - attribute: **logical_identifier** value: *value*
  - attribute: **version_id** value: *value*
  - attribute: **title** value: *value*
  - attribute: **information_model_version** value: **0.7.0.0.j**
  - attribute: **product_class** value: *value*
- **End** Identification_Area
  - attribute: **container_type** value: **GZIP, LZIP, TAR, ZIP**

- **Zipped_Member_Entry - Occurs 0 to * Times**

  description: **The Zipped Member Entry class provides a member reference to a product.**
  role: **Concrete**
  attribute: **lidvid_reference** value: *value*
  attribute: **file_specification_name** value: *value*
  attribute: **reference_type** value: **contained_product, manifest_product**
  attribute: **md5_checksum** value: *value*
- **End** Zipped_Member_Entry

- **File Occurs 1 Times**

  description: **The File class consists of attributes that describe a file in a data store.**
  role: **Concrete**
  attribute: **file_name** value: *value*
  attribute: **local_identifier** value: *value* Optional
  attribute: **creation_date_time** value: *value* Optional
  attribute: **file_size** value: *value* Optional
  attribute: **records** value: *value* Optional
  attribute: **maximum_record_bytes** value: *value* Optional
  attribute: **md5_checksum** value: *value* Optional
  attribute: **comment** value: *value* Optional
- **End** File
- **End** Product_Zipped

- **Telemetry_Parameters**

  description: **The Telemetry_Parameters class contains downlink-related attributes used primarily during mission operations.**
  role: **Concrete**
  attribute: **application_process_id** value: *value* Optional

  attribute: **application_process_name** value: *value* Optional

  attribute: **earth_received_start_date_time** value: *value* Optional

  attribute: **earth_received_stop_date_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_format_id** value: *value* Optional

  attribute: **telemetry_provider_id** value: *value* Optional

  attribute: **telemetry_source_name** value: *value* Optional

  attribute: **telemetry_source_type** value: **DATA_PRODUCT, SFDU** Optional
- **End** Telemetry_Parameters

---

8. **PDS4 Attribute Definitions - Wed Apr 11 17:26:38 PDT 2012**

Generated from the PDS4 Information Model Version 0.7.0.0.j

- **abstract_desc**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**
  - description: **The abstract desc attribute provides a summary of a text, scientific article, or document.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **acknowledgement_text**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Description**
  version: **0.7.0.j**
    - description: **The acknowledgement_text attribute is a character string which recognizes another's contribution, authority, or right.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **affiliation_type**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.j**
    - description: **The affiliation type data attribute describes the type of relationship an individual has with the PDS.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      Affiliate
      The PDS_Affiliate has affiliation type AFFILIATE
      Data_Provider
      The PDS_Affiliate has affiliation type DATA PROVIDER
      Manager
      The PDS_Affiliate has affiliation type MANAGER
      Technical_Staff
      The PDS_Affiliate has affiliation type TECHNICAL STAFF

- **alternate_designation**

  steward: **pds**
  name space id: **pds:**
  class: **Target_Identification**
  version: **0.7.0.j**
    - description: **The alternate_designation attribute provides a known alternate name or identifier.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **alternate_id**

  steward: **pds**
  name space id: **pds:**
  class: **Alias**
  version: **0.7.0.j**
    - description: **The alternate_id attribute provides an additional identifier supplied by the data provider.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **alternate_telephone_number**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.j**
    - description: **The telephone_number attribute provides a telephone number in international notation in compliance with the E.164 telephone number format recommendation.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **alternate_title**

  steward: **pds**
  name space id: **pds:**
  class: **Alias**
  version: **0.7.0.j**
    - description: **The alternate _title attribute provides an alternate title for the product.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **application_process_id**

  steward: **img**
  name space id: **img:**

class: **Telemetry_Parameters**
version: **0.7.0.0.j**
- description: **The application_process_id attribute identifies the process, or source, which created the data.**
- value_data_type: **ASCII_Integer**
- minimum_value: **0**
- maximum_value: **2147483647**

- **application_process_name**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.0.j**
    - description: **The application_process_name attribute provides the name associated with the source or process which created the data.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **127**

- **archive_status**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**
    - 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.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      ARCHIVED
      Archive status of the PDS3 data set is ARCHIVED (passed peer review with all liens resolved. Available through the Data Set Catalog and at NSSDC).
      ARCHIVED_ACCUMULATING
      'Archive status of the PDS3 data set is ARCHIVED_ACCUMULATING (some parts of the data set are ARCHIVED, but other parts are in earlier stages of the archiving process and/or have not yet been delivered to PDS; use with caution). '
      IN_LIEN_RESOLUTION
      Archive status of the PDS3 data set is IN_LIEN_RESOLUTION (peer review completed; liens are in the process of being resolved; use with caution).
      IN_LIEN_RESOLUTION_ACCUMULATING
      Archive status of the PDS3 data set is IN_LIEN_RESOLUTION_ACCUMULATING (some parts of the data set are IN LIEN RESOLUTION, but other parts are in earlier stages of the archiving process and/or have not yet been delivered to PDS; use with caution).
      IN_PEER_REVIEW
      Archive status of the PDS3 data set is IN_PEER_REVIEW (under peer review at the curation node but evaluation is not complete; use with caution).
      IN_PEER_REVIEW_ACCUMULATING
      Archive status of the PDS3 data set is IN_PEER_REVIEW_ACCUMULATING (some parts of the data set are IN PEER REVIEW, but other parts are in earlier stages of the archiving process and/or have not yet been delivered to PDS; use with caution).
      IN_QUEUE
      Archive status of the PDS3 data set is IN_QUEUE (received at the curation node but no action has been taken by the curation node; use with caution).
      IN_QUEUE_ACCUMULATING
      Archive status of the PDS3 data set is IN_QUEUE_ACCUMULATING (some parts of the data set are IN QUEUE, but other parts have not yet been delivered to PDS; use with caution).
      LOCALLY_ARCHIVED
      Archive status of the PDS3 data set is LOCALLY_ARCHIVED (passed peer review with all liens resolved; considered archived by the curation node but awaiting completion of the standard archiving process; possible TBD items include the arrival of the archive volume at NSSDC and ingestion of catalog information into the Data Set Catalog).
      LOCALLY_ARCHIVED_ACCUMULATING
      'Archive status of the PDS3 data set is LOCALLY_ARCHIVED_ACCUMULATING (some parts of the data set are LOCALLY ARCHIVED, but other parts are in earlier stages of the archiving process and/or have not yet been delivered to PDS; use with caution).'
      PRE_PEER_REVIEW
      'Archive status of the PDS3 data set is PRE_PEER_REVIEW (being prepared for peer review under the direction of the curation node; use with caution).'
      PRE_PEER_REVIEW_ACCUMULATING
      'Archive status of the PDS3 data set is PRE_PEER_REVIEW_ACCUMULATING (some parts of the data set are in PRE PEER REVIEW, but other parts are IN QUEUE and/or have not yet been delivered to PDS; use with caution).'
      SAFED

Archive status of the PDS3 data set is SAFED (the data set has been received by the PDS with no evaluation; data will not be formally archived).
SUPERSEDED
'Archive status of the PDS3 data set is SUPERSEDED (this data set has been replaced by a newer version, implying that the data set is not to be used unless the requester has specific reasons; when a data set has been superseded the Engineering Node, will notify NSSDC that their databases need to be updated to advise users of the new status and the location of the replacement data set).'

- **archive_status**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    ARCHIVED
    Archive status of the PDS3 volume is ARCHIVED (passed peer review with all liens resolved. Available through the Data Set Catalog and at NSSDC).
    ARCHIVED_ACCUMULATING
    Archive status of the PDS3 volume is ARCHIVED_ACCUMULATING (some parts of the volume are ARCHIVED, but other parts are in earlier stages of the archiving process and/or have not yet been delivered to PDS; use with caution).
    IN_LIEN_RESOLUTION
    Archive status of the PDS3 volume is IN_LIEN_RESOLUTION (peer review completed; liens are in the process of being resolved; use with caution).
    IN_LIEN_RESOLUTION_ACCUMULATING
    Archive status of the PDS3 volume is IN_LIEN_RESOLUTION_ACCUMULATING (some parts of the volume are IN LIEN RESOLUTION, but other parts are in earlier stages of the archiving process and/or have not yet been delivered to PDS; use with caution).
    IN_PEER_REVIEW
    Archive status of the PDS3 volume is IN_PEER_REVIEW (under peer review at the curation node but evaluation is not complete; use with caution).
    IN_PEER_REVIEW_ACCUMULATING
    Archive status of the PDS3 volume is IN_PEER_REVIEW_ACCUMULATING (some parts of the volume are IN PEER REVIEW, but other parts are in earlier stages of the archiving process and/or have not yet been delivered to PDS; use with caution).
    IN_QUEUE
    Archive status of the PDS3 volume is IN_QUEUE (received at the curation node but no action has been taken by the curation node; use with caution).
    IN_QUEUE_ACCUMULATING
    Archive status of the PDS3 volume is IN_QUEUE_ACCUMULATING (some parts of the volume are IN QUEUE, but other parts have not yet been delivered to PDS; use with caution).
    LOCALLY_ARCHIVED
    Archive status of the PDS3 volume is LOCALLY_ARCHIVED (passed peer review with all liens resolved; considered archived by the curation node but awaiting completion of the standard archiving process; possible TBD items include the arrival of the archive volume at NSSDC and ingestion of catalog information into the Data Set Catalog).
    LOCALLY_ARCHIVED_ACCUMULATING
    Archive status of the PDS3 volume is LOCALLY_ARCHIVED_ACCUMULATING (some parts of the volume are LOCALLY ARCHIVED, but other parts are in earlier stages of the archiving process and/or have not yet been delivered to PDS; use with caution).
    PRE_PEER_REVIEW
    Archive status of the PDS3 volume is PRE_PEER_REVIEW (being prepared for peer review under the direction of the curation node; use with caution).
    PRE_PEER_REVIEW_ACCUMULATING
    Archive status of the PDS3 volume is PRE_PEER_REVIEW_ACCUMULATING (some parts of the volume are in PRE PEER REVIEW, but other parts are IN QUEUE and/or have not yet been delivered to PDS; use with caution).
    SAFED
    Archive status of the PDS3 volume is SAFED (the volume has been received by the PDS with no evaluation; data will not be formally archived).
    SUPERSEDED
    Archive status of the PDS3 volume is SUPERSEDED (this volume has been replaced by a newer version, implying that the volume is not to be used unless the requester has specific reasons; when a volume has been superseded the Engineering Node, will notify NSSDC that their databases need to be updated to advise users of the new status and the location of the replacement volume).

- **archive_status_note**

  steward: **ops**

name space id: **pds:**
class: **Volume_PDS3**
version: **0.7.0.0.j**
- description: **The archive status note attribute provides a comment about the archive status.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **attribute_concept**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
  - description: **The attribute_concept attribute provides the type of information (classification) conveyed by the attribute – e.g., stop_date_time has attribute_concept = date_time.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    ADDRESS
    The attribute has been classified as being an ADDRESS
    ANGLE
    The attribute has been classified as being an ANGLE
    ATTRIBUTE
    The attribute has been classified as being an ATTRIBUTE
    BIT
    The attribute has been classified as being a BIT
    CHECKSUM
    The attribute has been classified as being a CHECKSUM
    COLLECTION
    The attribute has been classified as being a COLLECTION
    CONSTANT
    The attribute has been classified as being a CONSTANT
    COSINE
    The attribute has been classified as being a COSINE
    COUNT
    The attribute has been classified as being a COUNT
    DELIMITER
    The attribute has been classified as being a DELIMITER
    DESCRIPTION
    The attribute has been classified as being a DESCRIPTION
    DEVIATION
    The attribute has been classified as being a DEVIATION
    DIRECTION
    The attribute has been classified as being a DIRECTION
    DISTANCE
    The attribute has been classified as being a DISTANCE
    DOI
    The attribute has been classified as being a DOI
    DURATION
    The attribute has been classified as being a DURATION
    FACTOR
    The attribute has been classified as being a FACTOR
    FLAG
    The attribute has been classified as being a FLAG
    FORMAT
    The attribute has been classified as being a FORMAT
    GROUP
    The attribute has been classified as being a GROUP
    HOME
    The attribute has been classified as being a HOME
    ID
    The attribute has been classified as being an ID
    LATITUDE
    The attribute has been classified as being a LATITUDE
    LENGTH
    The attribute has been classified as being a LENGTH
    LIST
    The attribute has been classified as being a LIST
    LOCATION
    The attribute has been classified as being a LOCATION
    LOGICAL
    The attribute has been classified as being a LOGICAL
    LONGITUDE

The attribute has been classified as being a LONGITUDE
MASK
The attribute has been classified as being a MASK
MAXIMUM
The attribute has been classified as being a MAXIMUM
MEAN
The attribute has been classified as being a MEAN
MEDIAN
The attribute has been classified as being a MEDIAN
MINIMUM
The attribute has been classified as being a MINIMUM
NAME
The attribute has been classified as being a NAME
NOTE
The attribute has been classified as being a NOTE
NUMBER
The attribute has been classified as being a NUMBER
OFFSET
The attribute has been classified as being an OFFSET
ORDER
The attribute has been classified as being an ORDER
PARALLEL
The attribute has been classified as being a PARALLEL
PASSWORD
The attribute has been classified as being a PASSWORD
PATH
The attribute has been classified as being a PATH
PATTERN
The attribute has been classified as being a PATTERN
PIXEL
The attribute has been classified as being a PIXEL
QUATERNION
The attribute has been classified as being a QUATERNION
RADIUS
The attribute has been classified as being a RADIUS
RATIO
The attribute has been classified as being a RATIO
REFERENCE
The attribute has been classified as being a REFERENCE
RESOLUTION
The attribute has been classified as being a RESOLUTION
ROLE
The attribute has been classified as being a ROLE
ROTATION
The attribute has been classified as being a ROTATION
SCALE
The attribute has been classified as being a SCALE
SEQUENCE
The attribute has been classified as being a SEQUENCE
SET
The attribute has been classified as being a SET
SIZE
The attribute has been classified as being a SIZE
STATUS
The attribute has been classified as being a STATUS
SUMMARY
The attribute has been classified as being a SUMMARY
SYNTAX
The attribute has been classified as being a SYNTAX
TEMPERATURE
The attribute has been classified as being a TEMPERATURE
TEXT
The attribute has been classified as being a TEXT
TITLE
The attribute has been classified as being a TITLE
TYPE
The attribute has been classified as being a TYPE
UNIT
The attribute has been classified as being a UNIT
UNKNOWN
VALUE
The attribute has been classified as being a VALUE
VECTOR
The attribute has been classified as being a VECTOR

- **author_list**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Desc**
  version: **0.7.0.j**
    - description: **The author_list attribute lists the composers of a work.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **author_list**

  steward: **pds**
  name space id: **pds:**
  class: **Citation_Information**
  version: **0.7.0.j**
    - description: **The author_list attribute lists the composers of a work.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **author_list**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Description**
  version: **0.7.0.j**
    - description: **The author_list attribute lists the composers of a work.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **axes**

  steward: **pds**
  name space id: **pds:**
  class: **Array**
  version: **0.7.0.j**
    - description: **The axes attribute provides a count of the axes.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **1**
    - maximum_value: **16**

- **axes**

  steward: **pds**
  name space id: **pds:**
  class: **Array_2D**
  version: **0.7.0.j**
    - description: **The axes attribute provides a count of the axes.**
    - value_data_type: **ASCII_Integer** - Enumerated
    - minimum_value: **1**
    - maximum_value: **16**
    - permissible value
      2
      Array_2D has 2 axes

- **axes**

  steward: **pds**
  name space id: **pds:**
  class: **Array_3D**
  version: **0.7.0.j**
    - description: **The axes attribute provides a count of the axes.**
    - value_data_type: **ASCII_Integer** - Enumerated
    - minimum_value: **1**
    - maximum_value: **16**
    - permissible value
      3
      Array_2D has 3 axes

- **axis_index_order**

  steward: **pds**
  name space id: **pds:**
  class: **Array**
  version: **0.7.0.j**
    - description: **The axis_index_order attribute provides the axis index that varies fastest with respect to storage order.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated

- minimum_characters: **1**
- maximum_characters: **255**
- permissible value
  LAST_INDEX_FASTEST

- **axis_name**

  steward: **pds**
  name space id: **pds:**
  class: **Axis_Array**
  version: **0.7.0.0.j**
  - description: **The axis_name attribute provides a word or combination of words by which the axis is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **bit_mask**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.0.j**
  - description: **The bit_mask element is a series of binary digits identifying the active bits in a value.**
  - value_data_type: **ASCII_Numeric_Base2**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **bit_string**

  steward: **pds**
  name space id: **pds:**
  class: **Digital_Object**
  version: **0.7.0.0.j**
  - description: **The bit string attribute is a sequence of digital bits. It is the content of a digital object.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **bundle_type**

  steward: **pds**
  name space id: **pds:**
  class: **Bundle**
  version: **0.7.0.0.j**
  - description: **The bundle_type attribute provides a classification for the bundle.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    Archive
    Supplemental

- **bytes**

  steward: **pds**
  name space id: **pds:**
  class: **Header**
  version: **0.7.0.0.j**
  - description: **The bytes attribute provides the number of bytes in the object.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **bytes**

  steward: **pds**
  name space id: **pds:**
  class: **Header_Binary**
  version: **0.7.0.0.j**
  - description: **The bytes attribute provides the number of bytes in the object.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **citation_text**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**
  - description: **The citation_text attribute provides a character string containing a literature or other citation in**

sufficient detail that the material could be located in PDS or elsewhere.
- value_data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **class_name**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
  - description: **The class_name attribute provides the common name by which the class is identified, as well as the class within which the attribute is used.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **collection_type**

  steward: **pds**
  name space id: **pds:**
  class: **Collection**
  version: **0.7.0.0.j**
  - description: **The collection_type attribute provides a classification for the collection.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    Browse
    Calibration
    Context
    Data
    Document
    Geometry
    Miscellaneous
    SPICE
    Schema

- **comment**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute**
  version: **0.7.0.0.j**
  - description: **The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **comment**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
  - description: **The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **comment**

  steward: **ops**
  name space id: **pds:**
  class: **Ingest_DD**
  version: **0.7.0.0.j**
  - description: **The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **comment**

  steward: **pds**
  name space id: **pds:**
  class: **Alias**
  version: **0.7.0.0.j**

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

- **comment**

  steward: **pds**
  name space id: **pds:**
  class: **File**
  version: **0.7.0.0.j**
  - description: **The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **comment**

  steward: **pds**
  name space id: **pds:**
  class: **Internal_Reference**
  version: **0.7.0.0.j**
  - description: **The comment attribute provides one or more remarks or thoughts relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **comment**

  steward: **pds**
  name space id: **pds:**
  class: **Observation_Area**
  version: **0.7.0.0.j**
  - description: **The comment attribute is a character string expressing one or more remarks or thoughts relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **compile_notes**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**
  - description: **The compile notes attribute provides a brief statement giving particulars about the compilation of the software source.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **conceptual_domain**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain_Full**
  version: **0.7.0.0.j**
  - description: **The conceptual_domain attribute provides the domain to which the value has been assigned.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    BOOLEAN
    INTEGER
    NAME
    NUMERIC
    REAL
    SHORT_STRING
    TEXT
    TIME
    TYPE
    UNKNOWN

- **confidence_level_note**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**

version: **0.7.0.0.j**
- 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.**
- value_data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **constant_value**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Association**
  version: **0.7.0.0.j**
    - description: **The constant value attribute provides the value to be used if an attribute is static.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **container_type**

  steward: **ops**
  name space id: **pds:**
  class: **Product_Zipped**
  version: **0.7.0.0.j**
    - description: **The container type attribute indicates the method used to package the components.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      GZIP
      Product_Zipped is in container type GZIP
      LZIP
      Product_Zipped is in container type LZIP
      TAR
      Product_Zipped is in container type TAR
      ZIP
      Product_Zipped is in container type ZIP

- **copyright**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Description**
  version: **0.7.0.0.j**
    - 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.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **creation_date_time**

  steward: **pds**
  name space id: **pds:**
  class: **File**
  version: **0.7.0.0.j**
    - description: **The creation_date_time attribute provides a date and time when the object was created.**
    - value_data_type: **ASCII_Date_Time**
    - format: **YYYY-MM-DDTHH:MM:SS.SSS/YYYY-DOYTHH:MM:SS.SSS**

- **curating_node_id**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.0.j**
    - 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.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **data_regime**

  steward: **pds**
  name space id: **pds:**
  class: **Primary_Result_Description**
  version: **0.7.0.0.j**

- description: **The data_regime attribute provides the wavelength (or an analogous concept for things like particle detectors) of the observations, stated as a category.**
- value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  Dust
  Dust_Particle_Counts
  Electric_Field
  Electrons
  Far_Infrared
  Gamma_Ray
  Impacts
  Infrared
  Ions
  Magnetic_Field
  Mass_Spectra
  Microwave
  Millimeter
  Near_Infrared
  Optical
  Particles
  Radio
  Sub-Millimeter
  Ultraviolet
  Visible
  X-Ray

- **data_set_desc**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**
    - description: **The data_set_desc attribute describes the content and type of a data set and provides information required to use the data (such as binning information).**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **data_set_id**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**
    - description: **The data set id provides a formal name used to refer to a data set.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **data_set_name**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**
    - 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**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **data_set_release_date**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**
    - 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.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **data_set_terse_desc**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**
  - description: **A one line description of the data set**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **data_type**

  steward: **pds**
  name space id: **pds:**
  class: **Element_Array**
  version: **0.7.0.0.j**
  - description: **The data_type attribute provides the hardware representation used to store a value.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    IEEE754LSBDouble
    Values of Array_Element are stored as 64-bit IEEE binary floating point numbers with the least signiificant byte first
    IEEE754LSBSingle
    Values of Array_Element are stored as 32-bit IEEE binary floating point numbers with the least signiificant byte first
    IEEE754MSBDouble
    Values of Array_Element are stored as 64-bit IEEE binary floating point numbers with the most signiificant byte first
    IEEE754MSBSingle
    Values of Array_Element are stored as 32-bit IEEE binary floating point numbers with the most signiificant byte first
    SignedByte
    Values of Array_Element are stored as 8-bit signed binary integers
    SignedLSB2
    Values of Array_Element are stored as 16-bit signed binary integers with the the less significant byte first
    SignedLSB4
    Values of Array_Element are stored as 32-bit signed binary integers with the the less significant byte first
    SignedLSB8
    Values of Array_Element are stored as 64-bit signed binary integers with the the less significant byte first
    SignedMSB2
    Values of Array_Element are stored as 16-bit signed binary integers with the more significant byte first
    SignedMSB4
    Values of Array_Element are stored as twos-complement 32-bit binary integers with the most signiificant byte first
    SignedMSB8
    Values of Array_Element are stored as twos-complement 64-bit binary integers with the most signiificant byte first
    UnsignedByte
    Values of Array_Element are stored as 8-bit unsigned binary integers
    UnsignedLSB2
    Values of Array_Element are stored as 16-bit unsigned binary integers with the the less significant byte first
    UnsignedLSB4
    Values of Array_Element are stored as 32-bit unsigned binary integers with the least significant byte first
    UnsignedLSB8
    Values of Array_Element are stored as 64-bit unsigned binary integers with the least significant byte first
    UnsignedMSB2
    Values of Array_Element are stored as 16-bit unsigned binary integers with the more significant byte first
    UnsignedMSB4
    Values of Array_Element are stored as 32-bit unsigned binary integers with the most significant byte first
    UnsignedMSB8
    Values of Array_Element are stored as 64-bit unsigned binary integers with the most significant byte first

- **data_type**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.0.j**
  - description: **The data_type attribute provides the hardware representation used to store a value.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    ASCII_AnyURI
    Values in Table_Binary_Field have data type ASCII_AnyURI
    ASCII_Boolean
    ASCII_DOI
    Values in Table_Binary_Field have data type ASCII_DOI
    ASCII_Date_DOY

Values in Table_Binary_Field have data type ASCII_Date_DOY
ASCII_Date_Time_DOY
Values in Table_Binary_Field have data type ASCII_Date_Time_DOY
ASCII_Date_Time_UTC
Values in Table_Binary_Field have data type ASCII_Date_Time_UTC
ASCII_Date_Time_YMD
Values in Table_Binary_Field have data type ASCII_Date_Time_YMD
ASCII_Date_YMD
Values in Table_Binary_Field have data type ASCII_Date_YMD
ASCII_File_Name
Values in Table_Binary_Field have data type ASCII_File_Name
ASCII_File_Specification_Name
Values in Table_Binary_Field have data type ASCII_File_Specification_Name
ASCII_Integer
Values in Table_Bonary_Field have data type ASCII_Integer
ASCII_LID
Values in Table_Binary_Field have data type ASCII_LID
ASCII_LIDVID
Values in Table_Binary_Field have data type ASCII_LIDVID
ASCII_MD5_Checksum
Values in Table_Binary_Field have data type ASCII_MD5_Checksum
ASCII_NonNegative_Integer
Values in Table_Binary_Field have data type ASCII_NonNegative_Integer
ASCII_Numeric_Base16
Values in Table_Binary_Field have data type ASCII_Numeric_Base16
ASCII_Numeric_Base2
Values in Table_Binary_Field have data type ASCII_Numeric_Base2
ASCII_Real
Values in Table_Binary_Field have data type ASCII_Real
ASCII_Short_String_Collapsed
Values in Table_Binary_Field have data type ASCII_Short_String_Collapsed
ASCII_Short_String_Preserved
Values in Table_Binary_Field have data type ASCII_Short_String_Preserved
ASCII_Text_Preserved
Values in Table_Binary_Field have data type ASCII_Text_Preserved
ASCII_Time
Values in Table_Binary_Field have data type ASCII_Time
ASCII_VID
Values in Table_Binary_Field have data type ASCII_VID
ComplexLSB16
Values in Table_Binary_Field have data type ComplexLSB16
ComplexLSB8
Values in Table_Binary_Field have data type ComplexLSB8
ComplexMSB16
Values in Table_Binary_Field have data type ComplexMSB16
ComplexMSB8
Values in Table_Binary_Field have data type ComplexMSB8
IEEE754LSBDouble
Values in Table_Binary_Field have data type IEEE754LSBDouble
IEEE754LSBSingle
Values in Table_Binary_Field have data type IEEE754LSBSingle
IEEE754MSBDouble
Values in Table_Binary_Field have data type IEEE754MSBDouble
IEEE754MSBSingle
Values in Table_Binary_Field have data type IEEE754MSBSingle
SignedByte
Values in Table_Binary_Field have data type SignedByte
SignedLSB2
Values in Table_Binary_Field have data type SignedLSB2
SignedLSB4
Values in Table_Binary_Field have data type SignedLSB4
SignedLSB8
Values in Table_Binary_Field have data type SignedLSB8
SignedMSB2
Values in Table_Binary_Field have data type SignedMSB2
SignedMSB4
Values in Table_Binary_Field have data type SignedMSB4
SignedMSB8
Values in Table_Binary_Field have data type SignedMSB8
UnsignedByte
Values in Table_Binary_Field have data type UnsignedByte
UnsignedLSB2
Values in Table_Binary_Field have data type UnsignedLSB2
UnsignedLSB4

Values in Table_Binary_Field have data type UnsignedLSB4
UnsignedLSB8
Values in Table_Binary_Field have data type UnsignedLSB8
UnsignedMSB2
Values in Table_Binary_Field have data type UnsignedMSB2
UnsignedMSB4
Values in Table_Binary_Field have data type UnsignedMSB4
UnsignedMSB8
Values in Table_Binary_Field have data type UnsignedMSB8

- **data_type**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Bit**
  version: **0.7.0.0.j**
    - description: **The data_type attribute provides the hardware representation used to store a value.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
    SignedBitString
    UnsignedBitString

- **data_type**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.0.j**
    - description: **The data_type attribute provides the hardware representation used to store a value.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
    ASCII_AnyURI
    Values in Table_Character_Field have data type ASCII_AnyURI
    ASCII_Boolean
    ASCII_DOI
    Values in Table_Character_Field have data type ASCII_DOI
    ASCII_Date_DOY
    Values in Table_Character_Field have data type ASCII_Date_DOY
    ASCII_Date_Time_DOY
    Values in Table_Character_Field have data type ASCII_Date_Time_DOY
    ASCII_Date_Time_UTC
    Values in Table_Character_Field have data type ASCII_Date_Time_UTC
    ASCII_Date_Time_YMD
    Values in Table_Character_Field have data type ASCII_Date_Time_YMD
    ASCII_Date_YMD
    Values in Table_Character_Field have data type ASCII_Date_YMD
    ASCII_File_Name
    Values in Table_Character_Field have data type ASCII_File_Name
    ASCII_File_Specification_Name
    Values in Table_Character_Field have data type ASCII_File_Specification_Name
    ASCII_Integer
    Values in Table_Character_Field have data type ASCII_Integer
    ASCII_LID
    Values in Table_Character_Field have data type ASCII_LID
    ASCII_LIDVID
    Values in Table_Character_Field have data type ASCII_LIDVID
    ASCII_MD5_Checksum
    Values in Table_Character_Field have data type ASCII_MD5_Checksum
    ASCII_NonNegative_Integer
    Values in Table_Character_Field have data type ASCII_NonNegative_Integer
    ASCII_Numeric_Base16
    Values in Table_Character_Field have data type ASCII_Numeric_Base16
    ASCII_Numeric_Base2
    Values in Table_Character_Field have data type ASCII_Numeric_Base2
    ASCII_Real
    Values in Table_Character_Field have data type ASCII_Real
    ASCII_Short_String_Collapsed
    Values in Table_Character_Field have data type ASCII_Short_String_Collapsed
    ASCII_Short_String_Preserved
    Values in Table_Character_Field have data type ASCII_Short_String_Preserved
    ASCII_Text_Preserved
    Values in Table_Character_Field have data type ASCII_Text_Preserved

ASCII_Time
Values in Table_Character_Field have data type ASCII_Time
ASCII_VID
Values in Table_Character_Field have data type ASCII_VID

- **data_type**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.0.j**
    - description: **The data_type attribute provides the hardware representation used to store a value.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
    ASCII_AnyURI
    The delimited field has data type ASCII_AnyURI
    ASCII_Boolean
    ASCII_DOI
    The delimited field has data type ASCII_DOI
    ASCII_Date_DOY
    The delimited field has data type ASCII_Date_DOY
    ASCII_Date_Time_DOY
    The delimited field has data type ASCII_Date_Time_DOY
    ASCII_Date_Time_UTC
    The delimited field has data type ASCII_Dae_Time_UTC
    ASCII_Date_Time_YMD
    The delimited field has data type ASCII_Date_Time_YMD
    ASCII_Date_YMD
    The delimited field has data type ASCII_Date_YMD
    ASCII_File_Name
    The delimited field has data type ASCII_File_Name
    ASCII_File_Specification_Name
    The delimited field has data type ASCII_Filke_Specification_Name
    ASCII_Integer
    The delimited field has data type ASCII_Integer
    ASCII_LID
    The delimited field has data type ASCII_LID
    ASCII_LIDVID
    The delimited field has data type ASCII_LIDVID
    ASCII_MD5_Checksum
    The delimited field has data type ASCII_MD5_Checksum
    ASCII_NonNegative_Integer
    The delimited field has data type ASCII_NonNegative_Integer
    ASCII_Numeric_Base16
    The delimited field has data type ASCII_Numeric_Base16
    ASCII_Numeric_Base2
    The delimited field has data type ASCII_Numeric_Base2
    ASCII_Real
    The delimited field has data type ASCII_Real
    ASCII_Short_String_Collapsed
    The delimited field has data type ASCII_Short_String_Collapsed
    ASCII_Short_String_Preserved
    The delimited field has data type ASCII_Short_String_Preserved
    ASCII_Text_Preserved
    The delimited field has data type ASCII_Text_Preserved
    ASCII_Time
    The delimited field has data type ASCII_Time
    ASCII_VID
    The delimited field has data type ASCII_VID

- **date_time**

  steward: **pds**
  name space id: **pds:**
  class: **Update_Entry**
  version: **0.7.0.0.j**
    - description: **The date_time attribute provides the date and time of an event.**
    - value_data_type: **ASCII_Date_Time**
    - format: **YYYY-MM-DDTHH:MM:SS.SSS/YYYY-DOYTHH:MM:SS.SSS**

- **definition**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute**

version: **0.7.0.0.j**
  - description: **The definition attribute provides a statement, picture in words, or account that defines the term.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **definition**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
  - description: **The definition attribute provides a statement, picture in words, or account that defines the term.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **definition**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Class**
  version: **0.7.0.0.j**
  - description: **The definition attribute provides a statement, picture in words, or account that defines the term.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **definition**

  steward: **pds**
  name space id: **pds:**
  class: **Terminological_Entry**
  version: **0.7.0.0.j**
  - description: **The definition attribute provides a statement, picture in words, or account that defines the term.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **ops**
  name space id: **pds:**
  class: **Node**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Guest**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Desc**
  version: **0.7.0.0.j**

- description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
- value_data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **description**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_Set_PDS3**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Archive_Bundle**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Array**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Bundle**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Citation_Information**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**

name space id: **pds:**
class: **Detector**
version: **0.7.0.0.j**
- description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
- value_data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Description**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Format**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Encoded_Byte_Stream**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **External_Reference**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Bit**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**
- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**
- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Statistics**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**
- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**
- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument_Host**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**
- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Investigation**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**
- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Modification_Detail**
  version: **0.7.0.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**

- value_data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.0.j**
    - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Observing_System**
  version: **0.7.0.0.j**
    - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Observing_System_Component**
  version: **0.7.0.0.j**
    - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Packed_Data_Fields**
  version: **0.7.0.0.j**
    - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Parsable_Byte_Stream**
  version: **0.7.0.0.j**
    - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Primary_Result_Description**
  version: **0.7.0.0.j**
    - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
    - value_data_type: **ASCII_Text_Preserved**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion**

version: **0.7.0.0.j**

- description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
- value_data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion_Component**
  version: **0.7.0.0.j**

  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Resource**
  version: **0.7.0.0.j**

  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Base**
  version: **0.7.0.0.j**

  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Target**
  version: **0.7.0.0.j**

  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Target_Identification**
  version: **0.7.0.0.j**

  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Update**
  version: **0.7.0.0.j**

  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

steward: **pds**
name space id: **pds:**
class: **Update_Entry**
version: **0.7.0.j**
- description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
- value_data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Vector**
  version: **0.7.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **description**

  steward: **pds**
  name space id: **pds:**
  class: **Vector_Component**
  version: **0.7.0.j**
  - description: **The description attribute provides a statement, picture in words, or account that describes or is otherwise relevant to the object.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **directory_path_name**

  steward: **pds**
  name space id: **pds:**
  class: **Document_File**
  version: **0.7.0.j**
  - description: **The directory_path_name attribute provides a sequence of names that locates a directory in a hierarchy of directories.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **document_name**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Description**
  version: **0.7.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **doi**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Description**
  version: **0.7.0.j**
  - description: **The doi attribute provides the Digital Object Identifier for an object, assigned by the appropriate DOI System Registration Agency.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **earth_received_start_date_time**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.j**
  - description: **The earth_received_start_date_time attribute provides the earliest time at which any component telemetry data for a particular product was received.**
  - value_data_type: **ASCII_Date_Time_UTC**
  - format: **YYYY-MM-DDTHH:MM:SS.SSSZ**

- **earth_received_stop_date_time**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.j**
  - description: **The earth_received_stop_date_time attribute provides the latest time at which any component telemetry data for a particular product was received.**
  - value_data_type: **ASCII_Date_Time_UTC**
  - format: **YYYY-MM-DDTHH:MM:SS.SSSZ**

- **editor_list**

  steward: **pds**
  name space id: **pds:**
  class: **Citation_Information**
  version: **0.7.0.j**
  - description: **The editor_list attribute lists the editors of a work.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **editor_list**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Description**
  version: **0.7.0.j**
  - description: **The editor_list attribute lists the editors of a work.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **electronic_mail_address**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **electronic_mail_address**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Guest**
  version: **0.7.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **elements**

  steward: **pds**
  name space id: **pds:**
  class: **Axis_Array**
  version: **0.7.0.j**
  - description: **The elements attribute provides the count of the number of elements along an array axis.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **encoding_type**

  steward: **ops**
  name space id: **pds:**
  class: **Delivery_Manifest**
  version: **0.7.0.j**
  - description: **The encoding_type attribute provides the storage format (binary or character).**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**

- permissible value
  CHARACTER

- **encoding_type**

  steward: **ops**
  name space id: **pds:**
  class: **Service_Description**
  version: **0.7.0.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      CHARACTER

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Array**
  version: **0.7.0.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      BINARY
      The values of an array are stored as binary numbers

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Document_File**
  version: **0.7.0.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      BINARY
      The Document_File has encoding type BINARY
      CHARACTER
      The Document_File has encoding type CHARACTER

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Encoded_Byte_Stream**
  version: **0.7.0.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      BINARY
      The Encoded_Byte_Stream follows encoding type BINARY

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Inventory**
  version: **0.7.0.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      CHARACTER

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Parsable_Byte_Stream**
  version: **0.7.0.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**

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

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **SPICE_Kernel**
  version: **0.7.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      BINARY
      CHARACTER

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Stream_Text**
  version: **0.7.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      CHARACTER

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Base**
  version: **0.7.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Binary**
  version: **0.7.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      BINARY

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Character**
  version: **0.7.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      CHARACTER

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Delimited**
  version: **0.7.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      CHARACTER

- **encoding_type**

  steward: **pds**
  name space id: **pds:**
  class: **XML_Schema**
  version: **0.7.0.j**
    - description: **The encoding_type attribute provides the storage format (binary or character).**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      CHARACTER

- **enumeration_flag**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.j**
    - description: **The enumeration_flag attribute indicates whether there is an enumerated set of permissible values.**
    - value_data_type: **ASCII_Boolean**

- **error_constant**

  steward: **pds**
  name space id: **pds:**
  class: **Special_Constants**
  version: **0.7.0.j**
    - description: **The error_constant attribute provides a value that indicates the original value was in error.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **expected_packets**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.j**
    - description: **The expected_packets attribute provides the total number of telemetry packets which constitute a complete data product, i.e., a data product without missing data.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **0**
    - maximum_value: **2147483647**

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **Document_File**
  version: **0.7.0.j**
    - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      ENCAPSULATED_POSTSCRIPT
      The Document_File is governed by the external standard ENCAPSULATED_POSTSCRIPT
      GIF
      The Document_File is governed by the external standard GIF
      HTML
      The Document_File is governed by the external standard HTML
      JPG
      The Document_File is governed by the external standard JPEG
      LaTEX
      The Document_File is governed by the external standard LaTEX
      MICROSOFT_WORD
      The Document_File is governed by the external standard MICROSOFT_WORD
      PDF
      The Document_File is governed by the external standard PDF
      PDF-A
      The Document_File is governed by the external standard PDF-A
      PNG
      The Document_File is governed by the external standard PNG
      POSTSCRIPT
      The Document_File is governed by the external standard POSTSCRIPT
      RICH_TEXT

The Document_File is governed by the external standard RICH_TEXT

TEXT

The Document_File is governed by the external standard TEXT

TIFF

The Document_File is governed by the external standard TIFF

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **Encoded_Binary**
  version: **0.7.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible value

    System

    The Encoded_Binary is governed by the external standard System

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **Encoded_Byte_Stream**
  version: **0.7.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **Encoded_Image**
  version: **0.7.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values

    GIF

    The Encoded_Image is governed by the external standard GIF

    JPEG

    The Encoded_Image is governed by the external standard JPEG

    PDF

    The Encoded_Image is governed by the external standard PDF

    PNG

    The Encoded_Image is governed by the external standard PNG

    TIFF

    The Encoded_Image is governed by the external standard TIFF

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **File_PDF**
  version: **0.7.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values

    PDF

    The File_PDF is governed by the external standard PDF

    PDF-A

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **Header**
  version: **0.7.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS**

governance.
- value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  ASCII
  The Header is governed by the external standard ASCII
  FITS
  The Header is governed by the external standard FITS
  ISIS2
  The Header is governed by the external standard ISIS2
  ISIS3
  The Header is governed by the external standard ISIS3
  ISIS_HISTORY
  The Header is governed by the external standard ISIS_HISTORY
  ODL
  The Header is governed by the external standard ODL
  PDS1
  The Header is governed by the external standard PDS1
  PDS2
  The Header is governed by the external standard PDS2
  PDS3
  The Header is governed by the external standard PDS3
  TIFF
  The Header is governed by the external standard TIFF
  VICAR
  The Header is governed by the external standard VICAR

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **Header_Binary**
  version: **0.7.0.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible value
    TIFF
    The Header_Binary is governed by the external standard TIFF

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **Parsable_Byte_Stream**
  version: **0.7.0.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **SPICE_Kernel**
  version: **0.7.0.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible value
    SPICE
    SPICE_Kernel_Text is governed by the the external standard SPICE

- **external_standard_id**

  steward: **pds**
  name space id: **pds:**
  class: **Service_Description**
  version: **0.7.0.0.j**
  - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**

- value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  WADL

WSDL

1.
- **external_standard_id**

    steward: **pds**
    name space id: **pds:**
    class: **Table_Delimited**
    version: **0.7.0.0.j**
    - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
      PDS_CSV

- **external_standard_id**

    steward: **pds**
    name space id: **pds:**
    class: **XML_Schema**
    version: **0.7.0.0.j**
    - description: **The external_standard_id attribute provides the formal name of a standard not under PDS governance.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      Schematron
      XML_Catalog
      XML_Schema
      XML_Schema is governed by the external standard XML_Schema

- **field_delimiter**

    steward: **pds**
    name space id: **pds:**
    class: **Table_Delimited**
    version: **0.7.0.0.j**
    - description: **The field_delimiter attribute provides the character or characters that indicate the end of a character string.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      0x09
      0x2C
      Fields in the delimited table are delimited by ASCII commas
      0x3B
      Fields in the delimited table are delimited by ASCII semi-colons
      0x7C
      Fields in the delimited table are delimited by ASCII vertical bar characters ('|')

- **field_format**

    steward: **pds**
    name space id: **pds:**
    class: **Field_Binary**
    version: **0.7.0.0.j**
    - description: **The field_format attribute gives the magnitude and precision of the data value, providing a display format.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **field_format**

    steward: **pds**
    name space id: **pds:**
    class: **Field_Bit**
    version: **0.7.0.0.j**

- description: **The field_format attribute gives the magnitude and precision of the data value, providing a display format.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **field_format**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.j**
  - description: **The field_format attribute gives the magnitude and precision of the data value, providing a display format.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **field_format**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.j**
  - description: **The field_format attribute gives the magnitude and precision of the data value, providing a display format.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **field_length**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.j**
  - description: **The field_length attribute sets an upper, inclusive bound on the number of bytes in the field**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**
  - specified_unit_id: **byte**

- **field_length**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.j**
  - description: **The field_length attribute sets an upper, inclusive bound on the number of bytes in the field**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**
  - specified_unit_id: **byte**

- **field_length**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.j**
  - description: **The field_length attribute sets an upper, inclusive bound on the number of bytes in the field**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**
  - specified_unit_id: **byte**

- **field_location**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.j**
  - description: **The field_location attribute provides the starting byte for a field within a record, counting from 1.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**

- specified_unit_id: **byte**

- **field_location**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.0.j**
  - description: **The field_location attribute provides the starting byte for a field within a record, counting from 1.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**
  - specified_unit_id: **byte**

- **field_number**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.0.j**
  - description: **The field_number attribute provides the position of a field, within a series of fields, counting from 1.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **field_number**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.0.j**
  - description: **The field_number attribute provides the position of a field, within a series of fields, counting from 1.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **field_number**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.0.j**
  - description: **The field_number attribute provides the position of a field, within a series of fields, counting from 1.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **fields**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Binary**
  version: **0.7.0.0.j**
  - description: **The fields attribute provides a count of the fields**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **fields**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Character**
  version: **0.7.0.0.j**
  - description: **The fields attribute provides a count of the fields**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **fields**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Delimited**
  version: **0.7.0.0.j**
  - description: **The fields attribute provides a count of the fields**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **fields**

steward: **pds**
name space id: **pds:**
class: **Record_Binary**
version: **0.7.0.0.j**
- description: **The fields attribute provides a count of the fields**
- value_data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **fields**

  steward: **pds**
  name space id: **pds:**
  class: **Record_Character**
  version: **0.7.0.0.j**
  - description: **The fields attribute provides a count of the fields**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **fields**

  steward: **pds**
  name space id: **pds:**
  class: **Record_Delimited**
  version: **0.7.0.0.j**
  - description: **The fields attribute provides a count of the fields**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **file_name**

  steward: **pds**
  name space id: **pds:**
  class: **File**
  version: **0.7.0.0.j**
  - description: **The file_name attribute provides the name of a file.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **file_size**

  steward: **pds**
  name space id: **pds:**
  class: **File**
  version: **0.7.0.0.j**
  - description: **The file_size attribute provides the size of the file.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **-2147483648**
  - maximum_value: **2147483647**

- **file_specification_name**

  steward: **pds**
  name space id: **pds:**
  class: **Bundle_Member_Entry**
  version: **0.7.0.0.j**
  - description: **The file_specification_name attribute provides the file_name prepended by the directory_path to the file.**
  - value_data_type: **ASCII_File_Specification_Name**
  - minimum_characters: **1**
  - maximum_characters: **255**
  - format: **dir1/dir2/file_name.file_extension**

- **file_specification_name**

  steward: **pds**
  name space id: **pds:**
  class: **Zipped_Member_Entry**
  version: **0.7.0.0.j**
  - description: **The file_specification_name attribute provides the file_name prepended by the directory_path to the file.**
  - value_data_type: **ASCII_File_Specification_Name**
  - minimum_characters: **1**
  - maximum_characters: **255**
  - format: **dir1/dir2/file_name.file_extension**

- **files**

steward: **ops**
name space id: **pds:**
class: **Software_Binary**
version: **0.7.0.0.j**
- description: **The files attribute provides the number of files.**
- value_data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **files**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Script**
  version: **0.7.0.0.j**
  - description: **The files attribute provides the number of files.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **files**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**
  - description: **The files attribute provides the number of files.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **first_sampling_parameter_value**

  steward: **pds**
  name space id: **pds:**
  class: **Uniformly_Sampled**
  version: **0.7.0.0.j**
  - description: **The first_sampling_parameter_value element provides the first value in an ascending series and is therefore the minimum value at which a given data item was sampled.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **format_type**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Format**
  version: **0.7.0.0.j**
  - description: **The format type attribute indicates the digital format used.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    HTML
    The Document_Format uses format HTML
    PDF
    The Document_Format uses format PDF
    PDF-A
    The Document_Format uses format PDF-A
    TEXT
    The Document_Format uses format TEXT

- **formation_rule**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.0.j**
  - description: **The formation_rule attribute provides a 'user friendly' instruction for forming values.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **full_name**

  steward: **ops**
  name space id: **pds:**
  class: **Ingest_DD**
  version: **0.7.0.0.j**

- description: **The full_name attribute provides the complete name for a person performing the role of lexicographer.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**
- **full_name**

  steward: **ops**
  name space id: **pds:**
  class: **Subscriber_PDS3**
  version: **0.7.0.j**
  - description: **The full_name attribute provides the complete name for a person and includes titles and suffixes.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**
- **full_name**

  steward: **pds**
  name space id: **pds:**
  class: **Update_Entry**
  version: **0.7.0.j**
  - description: **The full_name attribute provides the complete name for a person and includes titles and suffixes.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**
- **group_length**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Binary**
  version: **0.7.0.j**
  - description: **The group_length attribute provides the length, in bytes, of a single repetition of a set of fields constituting one instance of the Group_Field_Field class. It should include any unused bytes occuring before or after individual fields. The total length of bytes occupied by the group within a single record must be repetitions * group_length.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**
  - specified_unit_id: **byte**
- **group_length**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Character**
  version: **0.7.0.j**
  - description: **The group_length attribute provides the length, in bytes, of a single repetition of a set of fields constituting one instance of the Group_Field_Field class. It should include any unused bytes occuring before or after individual fields. The total length of bytes occupied by the group within a single record must be repetitions * group_length.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**
  - specified_unit_id: **byte**
- **group_location**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Binary**
  version: **0.7.0.j**
  - description: **The group_location attribute provides the starting position for a Group_Field_Binary within the containing Record_Binary or Group_Field_Binary class, in bytes. Location 1 indicates the first byte of the containing class.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**
  - specified_unit_id: **byte**
- **group_location**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Character**

version: **0.7.0.0.j**
- description: **The group_location attribute provides the starting position for a Group_Field_Binary within the containing Record_Binary or Group_Field_Binary class, in bytes. Location 1 indicates the first byte of the containing class.**
- value_data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**
- unit_of_measure_type: **UnitOfMeasure_Storage**
- specified_unit_id: **byte**

- **information_model_version**

  steward: **pds**
  name space id: **pds:**
  class: **Identification_Area**
  version: **0.7.0.0.j**
  - description: **The information_model_version attribute provides the version identification of the PDS Information Model on which the label and schema are based.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible value
    0.7.0.0.j

- **install_notes**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Script**
  version: **0.7.0.0.j**
  - description: **The install notes attribute provides a brief statement giving particulars about the installation of the software.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **institution_name**

  steward: **ops**
  name space id: **pds:**
  class: **Node**
  version: **0.7.0.0.j**
  - description: **The institution_name attribute provides the name of the associated institution.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**
  - pattern: **[a-zA-Z]{1}([-/, ._a-zA-Z0-9]*)**

- **institution_name**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.0.j**
  - description: **The institution_name attribute provides the name of the associated institution.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**
  - pattern: **[a-zA-Z]{1}([-/, ._a-zA-Z0-9]*)**

- **instrument_desc**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_PDS3**
  version: **0.7.0.0.j**
  - description: **The instrument_desc attribute describes a given instrument.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **instrument_host_desc**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_Host_PDS3**
  version: **0.7.0.0.j**
  - description: **The instrument_host_desc provides a description of an instrument host**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**

- maximum_characters: **2147483647**

- **instrument_host_id**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_Host_PDS3**
  version: **0.7.0.j**
  - description: **The instrument_host_id attribute provides a unique identifier for the host on which an instrument is located. This host can be either a spacecraft or an earth base (e.g. earth).**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **instrument_host_name**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_Host_PDS3**
  version: **0.7.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **instrument_host_type**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_Host_PDS3**
  version: **0.7.0.j**
  - description: **The instrument_host_type attribute provides the type of host on which an instrument is based. For example instrument is located on a spacecraft instrument_host_type attribute would have the value SPACECRAFT.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **instrument_id**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_PDS3**
  version: **0.7.0.j**
  - description: **The instrument id provides a formal name used to refer to an instrument.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **instrument_name**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_PDS3**
  version: **0.7.0.j**
  - description: **The instrument_name attribute provides a unique name for an instrument.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **instrument_serial_number**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_PDS3**
  version: **0.7.0.j**
  - description: **TBD_description**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **instrument_type**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_PDS3**
  version: **0.7.0.j**
  - description: **The instrument_type attribute identifies the type of an instrument. Example values: POLARIMETER SPECTROMETER**

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

- **instrument_version_id**

  steward: **ops**
  name space id: **pds:**
  class: **Instrument_PDS3**
  version: **0.7.0.0.j**
    - description: **TBD_description**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **invalid_constant**

  steward: **pds**
  name space id: **pds:**
  class: **Special_Constants**
  version: **0.7.0.0.j**
    - description: **The invalid_constant attribute provides a value that indicates the original value was outside the valid range for the parameter.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **kernel_type**

  steward: **pds**
  name space id: **pds:**
  class: **SPICE_Kernel**
  version: **0.7.0.0.j**
    - description: **The kernel_type attribute identifies the type of SPICE kernel.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      CK
      DBK
      DSK
      EK
      SPICE_Kernel_Text is type EK (events kernel)
      FK
      SPICE_Kernel_Text is type FK (frames kernel)
      IK
      SPICE_Kernel_Text is type IK (instrument kernel)
      LSK
      SPICE_Kernel_Text is type LSK (leap seconds kernel)
      MK
      SPICE_Kernel_Text is type MK (meta kernel, a kernel of APICE kenrels to be used together)
      PCK
      SPICE_Kernel_Text is type PCL (planetary constants kernel)
      SCLK
      SPICE_Kernel_Text is type SCLK (clock conversion kernel)
      SPK

- **keywords**

  steward: **pds**
  name space id: **pds:**
  class: **Citation_Information**
  version: **0.7.0.0.j**
    - description: **The keywords attribute provides one or more words to be used for keyword search.**
    - value_data_type: **ASCII_Text_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **2147483647**

- **language**

  steward: **pds**
  name space id: **pds:**
  class: **Terminological_Entry**
  version: **0.7.0.0.j**
    - description: **The language attribute provides the language used for definition and designation of the term.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value

English
Values in Terminological_Entry are in ENGLISH

- **last_modification_date_time**

  steward: **ops**
  name space id: **pds:**
  class: **Ingest_DD**
  version: **0.7.0.j**
    - description: **The last_modification_date_time attribute gives the most recent date and time that a change was made.**
    - value_data_type: **ASCII_Date_Time_YMD**
    - format: **YYYY-MM-DDTHH:MM:SS.SSS**

- **last_sampling_parameter_value**

  steward: **pds**
  name space id: **pds:**
  class: **Uniformly_Sampled**
  version: **0.7.0.j**
    - description: **The last_sampling_parameter_value element provides the last value in an ascending series and is therefore the maximum value at which a given data item was sampled.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**

- **lid_reference**

  steward: **pds**
  name space id: **pds:**
  class: **Bundle_Member_Entry**
  version: **0.7.0.j**
    - description: **The lid_reference attribute provides the logical_identifier for a product.**
    - value_data_type: **ASCII_LID**
    - minimum_characters: **14**
    - maximum_characters: **255**
    - format: **urn:nasa:pds:xxxx**

- **lid_reference**

  steward: **pds**
  name space id: **pds:**
  class: **Internal_Reference**
  version: **0.7.0.j**
    - description: **The lid_reference attribute provides the logical_identifier for a product.**
    - value_data_type: **ASCII_LID**
    - minimum_characters: **14**
    - maximum_characters: **255**
    - format: **urn:nasa:pds:xxxx**

- **lidvid_reference**

  steward: **pds**
  name space id: **pds:**
  class: **Bundle_Member_Entry**
  version: **0.7.0.j**
    - description: **The lidvid_reference attribute provides the logical_identifier plus version_id, which uniquely identifies a product.**
    - value_data_type: **ASCII_LIDVID**
    - minimum_characters: **19**
    - maximum_characters: **255**
    - format: **urn:nasa:pds:xxxx::M.n**

- **lidvid_reference**

  steward: **pds**
  name space id: **pds:**
  class: **Internal_Reference**
  version: **0.7.0.j**
    - description: **The lidvid_reference attribute provides the logical_identifier plus version_id, which uniquely identifies a product.**
    - value_data_type: **ASCII_LIDVID**
    - minimum_characters: **19**
    - maximum_characters: **255**
    - format: **urn:nasa:pds:xxxx::M.n**

- **lidvid_reference**

  steward: **pds**
  name space id: **pds:**
  class: **Zipped_Member_Entry**

version: **0.7.0.0.j**
- description: **The lidvid_reference attribute provides the logical_identifier plus version_id, which uniquely identifies a product.**
- value_data_type: **ASCII_LIDVID**
- minimum_characters: **19**
- maximum_characters: **255**
- format: **urn:nasa:pds:xxxx::M.n**

- **line_display_direction**

  steward: **pds**
  name space id: **pds:**
  class: **Display_2D_Image**
  version: **0.7.0.0.j**
  - description: **The line_display_direction element is the preferred orientation of lines within an image for viewing on a display device. Note that if this keyword is present in a label, the sample_display_direction keyword must also be present and must contain a value orthogonal to the value selected for this keyword.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    DOWN
    UP

- **local_identifier**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Association**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_identifier**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_identifier**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_identifier**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Class**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_identifier**

  steward: **ops**
  name space id: **pds:**
  class: **Ingest_DD**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**

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

- **local_identifier**

  steward: **ops**
  name space id: **pds:**
  class: **Subscriber_PDS3**
  version: **0.7.0.0.j**
    - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Array**
  version: **0.7.0.0.j**
    - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Encoded_Byte_Stream**
  version: **0.7.0.0.j**
    - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Statistics**
  version: **0.7.0.0.j**
    - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **File**
  version: **0.7.0.0.j**
    - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Geometry**
  version: **0.7.0.0.j**
    - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**

version: **0.7.0.0.j**
- description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Parsable_Byte_Stream**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Base**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Update**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Vector**
  version: **0.7.0.0.j**
  - description: **The local_identifier attribute provides a character string which uniquely identifies the containing object within the label.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **local_mean_solar_time**

  steward: **pds**
  name space id: **pds:**
  class: **Time_Coordinates**
  version: **0.7.0.0.j**
  - description: **The local_mean_solar_time attribute provides the hour angle of the fictitious mean Sun at a fixed point on a rotating solar system body.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **8**
  - maximum_characters: **255**

- **local_true_solar_time**

steward: **pds**
name space id: **pds:**
class: **Time_Coordinates**
version: **0.7.0.j**

- description: **The local_true_solar_time (LTST) attribute provides the local time on a rotating solar system body where LTST is 12 h at the sub-solar point (SSP) and increases 1 h for each 15 degree increase in east longitude away from the SSP for prograde rotation.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **8**
- maximum_characters: **255**

- **logical_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Identification_Area**
  version: **0.7.0.j**

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

- **maximum**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Statistics**
  version: **0.7.0.j**

  - description: **The maximum attribute provides the largest stored value which actually appears in the (repeating) field; empty and Special_Constant field values are excluded.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **maximum**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.j**

  - description: **The maximum attribute provides the largest stored value which actually appears in the (repeating) field; empty and Special_Constant field values are excluded.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **maximum_characters**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.j**

  - description: **The maximum_characters attribute provides the upper, inclusive bound on the number of characters.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **maximum_occurrences**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Association**
  version: **0.7.0.j**

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

- **maximum_record_bytes**

  steward: **pds**
  name space id: **pds:**
  class: **File**
  version: **0.7.0.j**

  - description: **The maximum_record_bytes atrribute provides the maximum number of bytes that may be contained in a record.**
  - value_data_type: **ASCII_Integer**

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

- **maximum_record_length**

  steward: **pds**
  name space id: **pds:**
  class: **Record_Delimited**
  version: **0.7.0.0.j**
    - description: **The maximum_record_length attribute provides the upper, inclusive bound on the length of a record, including any record delimiter.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **1**
    - maximum_value: **2147483647**
    - unit_of_measure_type: **UnitOfMeasure_Storage**
    - specified_unit_id: **byte**

- **maximum_scaled_value**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.0.j**
    - description: **The maximum_scaled_value attribute provides the maximum value after application of scaling_value and value_offset (see their definitions; maximum_scaled_value is the maximum of Ov).**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**

- **maximum_value**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.0.j**
    - description: **The maximum_value attribute provides the upper, inclusive bound on the value.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **md5_checksum**

  steward: **pds**
  name space id: **pds:**
  class: **File**
  version: **0.7.0.0.j**
    - description: **The md5_checksum attribute is the 32-character hexadecimal number computed for a file using the MD5 algorithm.**
    - value_data_type: **ASCII_MD5_Checksum**
    - minimum_characters: **32**
    - maximum_characters: **32**
    - pattern: **([a-f0-9]{32})**
    - format: **0123456789abcdef**

- **md5_checksum**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.0.j**
    - description: **The md5_checksum attribute is the 32-character hexadecimal number computed for a file using the MD5 algorithm.**
    - value_data_type: **ASCII_MD5_Checksum**
    - minimum_characters: **32**
    - maximum_characters: **32**
    - pattern: **([a-f0-9]{32})**
    - format: **0123456789abcdef**

- **md5_checksum**

  steward: **pds**
  name space id: **pds:**
  class: **Zipped_Member_Entry**
  version: **0.7.0.0.j**
    - description: **The md5_checksum attribute is the 32-character hexadecimal number computed for a file using the MD5 algorithm.**
    - value_data_type: **ASCII_MD5_Checksum**
    - minimum_characters: **32**
    - maximum_characters: **32**
    - pattern: **([a-f0-9]{32})**

- format: **0123456789abcdef**
- **mean**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Statistics**
  version: **0.7.0.j**
  - description: **The mean attribute provides the sum of the field values divided by the number of values (empty or Special_Constants values in the repeating fields are excluded).**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **mean**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.j**
  - description: **The mean attribute provides the sum of the field values divided by the number of values (empty or Special_Constants values in the repeating fields are excluded).**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **median**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Statistics**
  version: **0.7.0.j**
  - description: **The median attribute provides the number separating the higher half of field values from the lower half; empty and Special_Constants values in the repeating fields are excluded.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **median**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.j**
  - description: **The median attribute provides the number separating the higher half of field values from the lower half; empty and Special_Constants values in the repeating fields are excluded.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **medium_type**

  steward: **ops**
  name space id: **pds:**
  class: **NSSDC**
  version: **0.7.0.j**
  - description: **The medium_type attribute identifies the physical storage medium for a data volume. Examples: CD-ROM, CARTRIDGE TAPE.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **medium_type**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.j**
  - description: **The medium_type attribute identifies the physical storage medium for a data volume. Examples: CD-ROM, CARTRIDGE TAPE.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **member_status**

  steward: **pds**
  name space id: **pds:**
  class: **Bundle_Member_Entry**
  version: **0.7.0.j**
  - description: **The member_status attribute indicates whether the collection is primary and whether the**

file_specification_name has been provided for the product_collection label.
- value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  Primary
  Secondary_No_File
  Secondary_With_File

- **minimum**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Statistics**
  version: **0.7.0.0.j**
  - description: **The minimum attribute provides the largest stored value which actually appears in the (repeating) field; empty and Special_Constant field values are excluded.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **minimum**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.0.j**
  - description: **The minimum attribute provides the largest stored value which actually appears in the (repeating) field; empty and Special_Constant field values are excluded.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **minimum_characters**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.0.j**
  - description: **The minimum_characters attribute provides the lower, inclusive bound on the number of characters.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **minimum_occurrences**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Association**
  version: **0.7.0.0.j**
  - description: **The minimum occurences attribute indicates the number of times something may occur and is also called the minimum cardinality.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **minimum_scaled_value**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.0.j**
  - description: **The minimum_scaled_value attribute provides the minimum value after application of scaling_value and value_offset (see their definitions; minimum_scaled_value is the minimum of Ov).**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **minimum_value**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.0.j**
  - description: **The minimum_value attribute provides the lower inclusive bound on the value.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **missing_constant**

steward: **pds**
name space id: **pds:**
class: **Special_Constants**
version: **0.7.0.j**
- description: **The missing_constant attribute provides a value that indicates the original value was missing, such as due to a gap in coverage.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **mission_desc**

  steward: **ops**
  name space id: **pds:**
  class: **Mission_PDS3**
  version: **0.7.0.j**
  - description: **The mission_desc attribute summarizes major aspects of a planetary mission or project, including the number and type of spacecraft, the target body or bodies and major accomplishments.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **mission_name**

  steward: **ops**
  name space id: **pds:**
  class: **Mission_PDS3**
  version: **0.7.0.j**
  - description: **The mission_name attribute identifies a major planetary mission or project. A given planetary mission may be associated with one or more spacecraft.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **mission_objectives_summary**

  steward: **ops**
  name space id: **pds:**
  class: **Mission_PDS3**
  version: **0.7.0.j**
  - description: **The mission_objectives_summary attribute describes the major scientific objectives of a planetary mission or project.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **mission_start_date**

  steward: **ops**
  name space id: **pds:**
  class: **Mission_PDS3**
  version: **0.7.0.j**
  - description: **The mission_start_date attribute provides the date of the beginning of a mission in UTC system format.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **mission_stop_date**

  steward: **ops**
  name space id: **pds:**
  class: **Mission_PDS3**
  version: **0.7.0.j**
  - description: **The mission_stop_date attribute provides the date of the end of a mission in UTC system format.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **modification_date**

  steward: **pds**
  name space id: **pds:**
  class: **Modification_Detail**
  version: **0.7.0.j**
  - description: **The modification_date attribute provides date the modifications were completed**
  - value_data_type: **ASCII_Date_YMD**
  - format: **YYYY-MM-DD**

- **naif_host_id**

steward: **pds**
name space id: **pds:**
class: **Instrument_Host**
version: **0.7.0.j**
- description: **The naif_instrument_id element provides the numeric ID used within the SPICE system to identify the spacecraft, spacecraft structure or science instrument.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **naif_instrument_id**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument**
  version: **0.7.0.j**
  - description: **The naif_instrument_id element provides the numeric ID used within the SPICE system to identify the spacecraft, spacecraft structure or science instrument.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Class**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **ops**
  name space id: **pds:**
  class: **External_Reference_Extended**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **ops**
  name space id: **pds:**
  class: **Node**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    Engineering
    The Node has name ENGINEERING
    Geosciences

The Node has name GEOSCIENCES
Imaging
The Node has name IMAGING
Management
Navigation_Ancillary_Information_Facility
The Node has name NAVIGATION AND ANCILLARY INFORMATION FACILITY
Planetary_Atmospheres
The Node has name PLANETARY ATMOSPHERES
Planetary_Plasma_Interactions
The Node has name PKLANETARY PLASMA INTERACTIONS
Planetary_Rings
The Node has name PLANETARY RINGS
Radio_Science
The Node has name RADIO SCIENCE
Small_Bodies
The Node has name SMALL BODIES

- **name**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Guest**
  version: **0.7.0.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Desc**
  version: **0.7.0.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Detector**
  version: **0.7.0.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Bit**
  version: **0.7.0.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**

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

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Header_Binary**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument_Host**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Investigation**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Investigation_Area**
  version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **pds**

name space id: **pds:**
class: **Observing_System**
version: **0.7.0.j**
  - description: **The name attribute provides a word or combination of words by which the object is known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Observing_System_Component**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Parsable_Byte_Stream**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion_Component**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Resource**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Target**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Target_Identification**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**

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

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Terminological_Entry**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Vector**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name**

  steward: **pds**
  name space id: **pds:**
  class: **Vector_Component**
  version: **0.7.0.j**
    - description: **The name attribute provides a word or combination of words by which the object is known.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name_space_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute**
  version: **0.7.0.j**
    - description: **The name_space_id attribute provides the abbreviation of the XML schema namespace container for this logical grouping of classes and attributes. It is assigned by the steward.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name_space_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.j**
    - description: **The name_space_id attribute provides the abbreviation of the XML schema namespace container for this logical grouping of classes and attributes. It is assigned by the steward.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **name_space_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Class**
  version: **0.7.0.j**
    - description: **The name_space_id attribute provides the abbreviation of the XML schema namespace container for this logical grouping of classes and attributes. It is assigned by the steward.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **not_applicable_constant**

  steward: **pds**
  name space id: **pds:**
  class: **Special_Constants**
  version: **0.7.0.j**
    - description: **The not_applicable_constant attribute provides a value that indicates the parameter is not applicable.**

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

- **nssdc_collection_id**

  steward: **ops**
  name space id: **pds:**
  class: **NSSDC**
  version: **0.7.0.0.j**
    - description: **An NSSDC Collection ID is an NSSDC assigned identifier for a collection of PDS datasets.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **observing_system_component_type**

  steward: **pds**
  name space id: **pds:**
  class: **Observing_System_Component**
  version: **0.7.0.0.j**
    - description: **The Observing System Component Type attribute indicates the type of the observing system component'.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      Analyst
      The observing system component is classified as ANALYST (a person)
      Artificial_Illumination
      The observing system component is classified as ARTIFICIAL ILLUMINATION
      Ground-based_Laboratory
      The observing system component is classified as GROUND-BASED LABORATORY
      Ground-based_Observatory
      The observing system component is classified as GROUND-BASED OBSERVATORY
      Ground-based_Telescope
      The observing system component is classified as GROUND-BASED TELESCOPE
      Instrument
      The observing system component is classified as INSTRUMENT
      Literature_Search
      The observing system component is classified as LITERATURE SEARCH
      PDS_Archived_Data
      The observing system component is classified as PDS ARCHIVED DATA
      Spacecraft
      The observing system component is classified as SPACECRAFT

- **offset**

  steward: **pds**
  name space id: **pds:**
  class: **Array**
  version: **0.7.0.0.j**
    - description: **The offset attribute provides the displacement of the object starting position from the beginning of the parent structure (file, record, etc.). If there is no displacement, offset=0.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **0**
    - maximum_value: **2147483647**
    - unit_of_measure_type: **UnitOfMeasure_Storage**
    - specified_unit_id: **byte**

- **offset**

  steward: **pds**
  name space id: **pds:**
  class: **Encoded_Byte_Stream**
  version: **0.7.0.0.j**
    - description: **The offset attribute provides the displacement of the object starting position from the beginning of the parent structure (file, record, etc.). If there is no displacement, offset=0.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **0**
    - maximum_value: **2147483647**
    - unit_of_measure_type: **UnitOfMeasure_Storage**
    - specified_unit_id: **byte**

- **offset**

  steward: **pds**
  name space id: **pds:**
  class: **Parsable_Byte_Stream**

version: **0.7.0.0.j**
- description: **The offset attribute provides the displacement of the object starting position from the beginning of the parent structure (file, record, etc.). If there is no displacement, offset=0.**
- value_data_type: **ASCII_Integer**
- minimum_value: **0**
- maximum_value: **2147483647**
- unit_of_measure_type: **UnitOfMeasure_Storage**
- specified_unit_id: **byte**

- **offset**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Base**
  version: **0.7.0.0.j**
  - description: **The offset attribute provides the displacement of the object starting position from the beginning of the parent structure (file, record, etc.). If there is no displacement, offset=0.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **0**
  - maximum_value: **2147483647**
  - unit_of_measure_type: **UnitOfMeasure_Storage**
  - specified_unit_id: **byte**

- **os_version**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Binary**
  version: **0.7.0.0.j**
  - description: **The OS version attribute indicates the version of an operating system.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **os_version**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**
  - description: **The OS version attribute indicates the version of an operating system.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **packet_map_mask**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.0.j**
  - description: **The packet_map_mask attribute is a binary or hexadecimal number identifying which of a data file's expected packets were actually received. The digits correspond positionally with the relative packet numbers of the data file. The bits are to be read left to right; i.e., the first (left-most) digit of the number corresponds to the first packet of the data file. A bit value of 1 indicates that the packet was received; a value of 0 indicates that it was not received.**
  - value_data_type: **ASCII_Numeric_Base16**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **pattern**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.0.j**
  - description: **The pattern attribute provides a symbolic instruction for forming values.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **pds4_merge_flag**

  steward: **ops**
  name space id: **pds:**
  class: **Ingest_DD**
  version: **0.7.0.0.j**
  - 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.**

- value_data_type: **ASCII_Boolean**

- **phone_book_flag**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.j**
  - description: **The phone_book_flag attribute indicates whether or not this person should be included in the phone book.**
  - value_data_type: **ASCII_Boolean**

- **postal_address_text**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.j**
  - description: **The postal address text attribute provides a mailing address.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **preferred_flag**

  steward: **ops**
  name space id: **pds:**
  class: **Terminological_Entry**
  version: **0.7.0.j**
  - description: **The preferred_flag indicates whether this entry is preferred over all other entries.**
  - value_data_type: **ASCII_Boolean**

- **primary_body_name**

  steward: **ops**
  name space id: **pds:**
  class: **Target_PDS3**
  version: **0.7.0.j**
  - description: **The primary_body_name attribute identifies the primary body with which a given target body is associated as a secondary body.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **producer_full_name**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.j**
  - description: **The producer_full_name attribute provides the full_name of the individual mainly responsible for the production of the data set. This individual does not have to be registered with the PDS.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **product_class**

  steward: **pds**
  name space id: **pds:**
  class: **Identification_Area**
  version: **0.7.0.j**
  - description: **The product_class attribute provides the high-level classification of the product into a category like "observational product" or "document".**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **program_notes_identifier**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Binary**
  version: **0.7.0.j**
  - description: **The program notes identifier attribute provides an identifier to a brief statement giving particulars about a software program.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **program_notes_identifier**

  steward: **ops**

name space id: **pds:**
class: **Software_Source**
version: **0.7.0.0.j**
- description: **The program notes identifier attribute provides an identifier to a brief statement giving particulars about a software program.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **programmers_manual_identifier**

    steward: **ops**
    name space id: **pds:**
    class: **Software_Desc**
    version: **0.7.0.0.j**
    - description: **The programmers manual identifier attribute provides an identifier to a document giving instruction about the programming of the software.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **publication_date**

    steward: **ops**
    name space id: **pds:**
    class: **Volume_PDS3**
    version: **0.7.0.0.j**
    - description: **The publication_date attribute provides the date on which an item was published.**
    - value_data_type: **ASCII_Date_YMD**
    - format: **YYYY-MM-DD**

- **publication_date**

    steward: **pds**
    name space id: **pds:**
    class: **Document_Description**
    version: **0.7.0.0.j**
    - description: **The publication_date attribute provides the date on which an item was published.**
    - value_data_type: **ASCII_Date_YMD**
    - format: **YYYY-MM-DD**

- **publication_year**

    steward: **pds**
    name space id: **pds:**
    class: **Citation_Information**
    version: **0.7.0.0.j**
    - description: **The publication_year attribute provides the year in which the product should be considered as published. Generally, this will be the year the data were declared "Certified" or "Archived".**
    - value_data_type: **ASCII_Date**
    - format: **YYYY-MM-DD/YYYY-DOY**

- **purpose**

    steward: **pds**
    name space id: **pds:**
    class: **Primary_Result_Description**
    version: **0.7.0.0.j**
    - description: **The purpose attribute provides an indication of the primary purpose of the observations included.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      Calibration
      Checkout
      Engineering
      Navigation
      Science

- **quaternion_components**

    steward: **pds**
    name space id: **pds:**
    class: **Quaternion**
    version: **0.7.0.0.j**
    - description: **The quaternion_components attribute provides a count of quaternion components.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **-2147483648**
    - maximum_value: **2147483647**

- **received_packets**

steward: **img**
name space id: **img:**
class: **Telemetry_Parameters**
version: **0.7.0.0.j**
- description: **The received_packets attribute provides the total number of telemetry packets which constitute a reconstructed data product, cf. expected_packets.**
- value_data_type: **ASCII_Integer**
- minimum_value: **0**
- maximum_value: **2147483647**

- **record_delimiter**

steward: **pds**
name space id: **pds:**
class: **Table_Character**
version: **0.7.0.0.j**
- description: **The record_delimiter attribute provides the character or characters used to indicate the end of a record.**
- value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  0x0A
  0x0D
  0x0D0x0A

- **record_delimiter**

steward: **pds**
name space id: **pds:**
class: **Table_Delimited**
version: **0.7.0.0.j**
- description: **The record_delimiter attribute provides the character or characters used to indicate the end of a record.**
- value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  0x0A
  Records in the delimited table are delimited by ASCII new-line characters
  0x0D
  Records in the delimited table are delimited by ASCII carriage-return characters
  0x0D0x0A
  Records in the delimited table are delimited by ASCII carriage-return line-feed pairs

- **record_length**

steward: **pds**
name space id: **pds:**
class: **Record_Binary**
version: **0.7.0.0.j**
- description: **The record_length attribute provides the length of a record, including a record delimiter if present.**
- value_data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**
- unit_of_measure_type: **UnitOfMeasure_Storage**
- specified_unit_id: **byte**

- **record_length**

steward: **pds**
name space id: **pds:**
class: **Record_Character**
version: **0.7.0.0.j**
- description: **The record_length attribute provides the length of a record, including a record delimiter if present.**
- value_data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**
- unit_of_measure_type: **UnitOfMeasure_Storage**
- specified_unit_id: **byte**

- **records**

steward: **pds**
name space id: **pds:**
class: **File**
version: **0.7.0.0.j**
- description: **The records attribute provides a count of records.**
- value_data_type: **ASCII_Integer**

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

- **records**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Base**
  version: **0.7.0.j**
  - description: **The records attribute provides a count of records.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **records**

  steward: **pds**
  name space id: **pds:**
  class: **Table_Delimited**
  version: **0.7.0.j**
  - description: **The records attribute provides a count of records.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **reduction_level**

  steward: **pds**
  name space id: **pds:**
  class: **Primary_Result_Description**
  version: **0.7.0.j**
  - description: **The reduction_level attribute provides a broad indication of data processing level.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    Analytic
    Calibrated
    Derived
    Raw

- **reference_text**

  steward: **pds**
  name space id: **pds:**
  class: **External_Reference**
  version: **0.7.0.j**
  - description: **The reference_text attribute provides a complete bibliographic citation for a published work.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **reference_type**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Association**
  version: **0.7.0.j**
  - description: **The reference_type attribute provides the name of the association.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    attribute_of

component_of
extension_of
restriction_of
subclass_of

1.
- **reference_type**

  steward: **ops**
  name space id: **pds:**
  class: **Delivery_Manifest**
  version: **0.7.0.j**
  - description: **The reference_type attribute provides the name of the association.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated

- minimum_characters: **1**
- maximum_characters: **255**
- permissible value
  has_member
  The Delivery_Manifest has an association with a member

- **reference_type**

  steward: **pds**
  name space id: **pds:**
  class: **Bundle_Member_Entry**
  version: **0.7.0.0.j**
    - description: **The reference_type attribute provides the name of the association.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      has_browse_collection
      Bundle_Member_Entry defines an association to a browse collection
      has_calibration_collection
      Bundle_Member_Entry defines an association to a calibration collection
      has_context_collection
      Bundle_Member_Entry defines an association to a context collection
      has_data_collection
      Bundle_Member_Entry defines an association to a data collection
      has_document_collection
      Bundle_Member_Entry defines an association to a document collection
      has_geometry_collection
      Bundle_Member_Entry defines an association to a geometry collection
      has_member_collection
      Bundle_Member_Entry defines an association to a member collection
      has_schema_collection
      Bundle_Member_Entry defines an association to a schema collection
      has_spice_kernels_collection

- **reference_type**

  steward: **pds**
  name space id: **pds:**
  class: **Internal_Reference**
  version: **0.7.0.0.j**
    - description: **The reference_type attribute provides the name of the association.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**
    - Extended Permissible Values for: pds:Observing_System_Component/pds:Internal_Reference
      has_instrument
      has_instrument_host
      has_detector
    - Extended Permissible Values for: pds:Product_Collection/pds:Reference_List/pds:Internal_Reference
      has_publication
      has_resource
      has_association
      has_calibration
      has_geometry
      has_spice
      curated_by_node
      has_node
      has_document
      has_investigation
      has_instrument_host
      has_instrument
      has_target
    - Extended Permissible Values for: pds:Product_Context/pds:Reference_List/pds:Internal_Reference
      has_publication
      has_resource
      has_association
      has_document
      has_investigation
      has_instrument_host
      has_instrument
      has_target
    - Extended Permissible Values for: pds:Product_Document/pds:Reference_List/pds:Internal_Reference
      has_association
      has_investigation
      has_instrument_host

has_instrument
has_target
- Extended Permissible Values for: pds:Product_Observational/pds:Reference_List/pds:Internal_Reference
has_publication
has_resource
has_association
has_calibration
has_geometry
has_spice
has_thumbnail
has_node
has_document
has_primary_collection
has_investigation
has_instrument_host
has_instrument
has_target
- Extended Permissible Values for: pds:Product_Operational/pds:Reference_List/pds:Internal_Reference
has_resource
has_association
has_document

- **reference_type**

  steward: **pds**
  name space id: **pds:**
  class: **Inventory**
  version: **0.7.0.0.j**
    - description: **The reference_type attribute provides the name of the association.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
    has_member_LIDVID_Primary
    has_member_LIDVID_Secondary
    has_member_LID_Secondary

- **reference_type**

  steward: **pds**
  name space id: **pds:**
  class: **Zipped_Member_Entry**
  version: **0.7.0.0.j**
    - description: **The reference_type attribute provides the name of the association.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
    contained_product
    Zipped_Member_Entry has an association of the type contained_product
    manifest_product
    Zipped_Member_Entry has an association of the type manifest_product

- **registered_by**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
    - description: **The registered_by attribute provides the name of the person or organization that registered the object.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **registration_authority_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
    - description: **The registration_authority_id attribute provides the name of the organization that registered the object.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible value
    0001_NASA_PDS_1

The Attribute Registration_Authority is 0001_NASA_PDS_1

- **registration_date**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.0.j**
  - description: **The registration_date attribute provides the date of registration within the PDS system.**
  - value_data_type: **ASCII_Date_YMD**
  - format: **YYYY-MM-DD**

- **registration_date**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Guest**
  version: **0.7.0.0.j**
  - description: **The registration_date attribute provides the date of registration within the PDS system.**
  - value_data_type: **ASCII_Date_YMD**
  - format: **YYYY-MM-DD**

- **repetitions**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Binary**
  version: **0.7.0.0.j**
  - description: **The repetitions attribute provides the number of occurrences.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **repetitions**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Character**
  version: **0.7.0.0.j**
  - description: **The repetitions attribute provides the number of occurrences.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **repetitions**

  steward: **pds**
  name space id: **pds:**
  class: **Group_Field_Delimited**
  version: **0.7.0.0.j**
  - description: **The repetitions attribute provides the number of occurrences.**
  - value_data_type: **ASCII_Integer**
  - minimum_value: **1**
  - maximum_value: **2147483647**

- **revision_id**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Description**
  version: **0.7.0.0.j**
  - description: **The revision_id attribute provides the revision level of a document, which may be set outside PDS and may be different from its version_id.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **sample_display_direction**

  steward: **pds**
  name space id: **pds:**
  class: **Display_2D_Image**
  version: **0.7.0.0.j**
  - description: **The sample_display_direction attribute provides the preferred orientation of samples within a line for viewing on a display device. The attribute sample_display_direction must be used with line_display_direction.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible value
    RIGHT

- **sampling_parameter_interval**

  steward: **pds**
  name space id: **pds:**
  class: **Uniformly_Sampled**
  version: **0.7.0.j**
  - description: **The sampling_parameter_interval element identifies the spacing of points at which data are sampled and at which a value for an instrument or dataset parameter is available. This sampling interval can be either the original (raw) sampling or the result of some resampling process. For example, in 48-second magnetometer data the sampling interval is 48. The sampling parameter (time, in the example) is identified by the sampling_parameter_name element.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **-INF**
  - maximum_value: **INF**

- **sampling_parameter_name**

  steward: **pds**
  name space id: **pds:**
  class: **Uniformly_Sampled**
  version: **0.7.0.j**
  - description: **The sampling_parameter_name element provides the name of the parameter which determines the sampling interval of a particular instrument or dataset parameter. For example, magnetic field intensity is sampled in time increments, and a spectrum is sampled in wavelength or frequency.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **sampling_parameter_scale**

  steward: **pds**
  name space id: **pds:**
  class: **Uniformly_Sampled**
  version: **0.7.0.j**
  - description: **The sampling_parameter_scale element specifies whether the sampling interval is linear or something other such as logarithmic.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    EXPONENTIAL
    Values of Uniformly_Sampled are given at uniform spacings of the exponential of an independent variable [e.g., log(1), log(2), log(3), log(4), ...]
    LINEAR
    Values of Uniformly_Sampled are given at uniform (linear) spacings of an independent variable [e.g., 1, 2, 3, 4, ...]
    LOGARITHMIC
    Values of Uniformly_Sampled are given at uniform spacings of the logarithm of an independent variable [e.g., 1, 10, 100, 1000, ...]

- **sampling_parameter_unit**

  steward: **pds**
  name space id: **pds:**
  class: **Uniformly_Sampled**
  version: **0.7.0.j**
  - description: **The sampling_parameter_unit element specifies the unit of measure of associated data sampling parameters.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **saturated_constant**

  steward: **pds**
  name space id: **pds:**
  class: **Special_Constants**
  version: **0.7.0.j**
  - description: **The saturated_constant attribute provides a value that indicates the original value was invalid because of sensor saturation.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **scaling_factor**

  steward: **pds**
  name space id: **pds:**
  class: **Element_Array**
  version: **0.7.0.j**

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

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.j**
  - description: **The scaling_factor attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**
- **scaling_factor**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Bit**
  version: **0.7.0.j**
  - description: **The scaling_factor attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**
- **scaling_factor**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.j**
  - description: **The scaling_factor attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**
- **scaling_factor**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.j**
  - description: **The scaling_factor attribute is the scaling factor to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**
- **sequence_number**

  steward: **pds**
  name space id: **pds:**
  class: **Axis_Array**
  version: **0.7.0.j**
  - description: **The sequence_number attribute provides a number that is used to order axes in an array.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **1**
    - maximum_value: **16**
- **sequence_number**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion_Component**
  version: **0.7.0.j**
  - description: **The sequence_number attribute provides a number that is used to order axes in an array.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **1**
    - maximum_value: **16**

- **sequence_number**

  steward: **pds**
  name space id: **pds:**
  class: **Vector_Component**
  version: **0.7.0.0.j**
    - description: **The sequence_number attribute provides a number that is used to order axes in an array.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **1**
    - maximum_value: **16**

- **serial_number**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument**
  version: **0.7.0.0.j**
    - description: **The serial number element provides the assigned manufacturer's serial number.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **serial_number**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument_Host**
  version: **0.7.0.0.j**
    - description: **TBD_description**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **software_dialect**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**
    - description: **The software dialect attribute indicates the variety of a language used to write the software.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **software_id**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Desc**
  version: **0.7.0.0.j**
    - description: **The software id attribute provides a formal name used to refer to the software.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **software_language**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**
    - description: **The software language attribute identifies the language used to write the software.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **software_type**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Desc**
  version: **0.7.0.0.j**
    - description: **The software type attribute identifies the class of which the software is a member.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **solar_longitude**

  steward: **pds**
  name space id: **pds:**
  class: **Time_Coordinates**

version: **0.7.0.0.j**
  - description: **The solar_longitude attribute provides the angle between the body-Sun line at the time of interest and the body-Sun line at its vernal equinox.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **0**
  - maximum_value: **360**

- **sort_name**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **sort_name**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Guest**
  version: **0.7.0.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **specified_unit_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.0.j**
  - description: **The specified_unit_id attribute provides the units chosen for maximum_value, minimum_value, and permissible_value.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **spice_file_name**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.0.j**
  - description: **The spice_file_name attribute provides the names of the SPICE files used in processing the data.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **standard_deviation**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Statistics**
  version: **0.7.0.0.j**
  - description: **The standard_deviation attribute provides the standard deviation of values in the associated object; empty and Special_Constants values are excluded.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **0**
  - maximum_value: **INF**

- **standard_deviation**

  steward: **pds**
  name space id: **pds:**
  class: **Object_Statistics**
  version: **0.7.0.0.j**
  - description: **The standard_deviation attribute provides the standard deviation of values in the repeating field; empty and Special_Constants field values are excluded.**
  - value_data_type: **ASCII_Real**
  - minimum_value: **0**
  - maximum_value: **INF**

- **start_bit**

  steward: **pds**

name space id: **pds:**
class: **Field_Bit**
version: **0.7.0.0.j**

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

- **start_date**

  steward: **pds**
  name space id: **pds:**
  class: **Investigation**
  version: **0.7.0.0.j**

  - description: **The start_date attribute provides the date when an activity began.**
  - value_data_type: **ASCII_Date_YMD**
  - format: **YYYY-MM-DD**

- **start_date_time**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.0.j**

  - description: **The start_date_time attribute provides the date and time at the beginning of a time interval of interest.**
  - value_data_type: **ASCII_Date_Time**
  - format: **YYYY-MM-DDTHH:MM:SS.SSS/YYYY-DOYTHH:MM:SS.SSS**

- **start_date_time**

  steward: **pds**
  name space id: **pds:**
  class: **Time_Coordinates**
  version: **0.7.0.0.j**

  - description: **The start_date_time attribute provides the date and time at the beginning of a time interval of interest.**
  - value_data_type: **ASCII_Date_Time**
  - format: **YYYY-MM-DDTHH:MM:SS.SSS/YYYY-DOYTHH:MM:SS.SSS**

- **starting_point_identifier**

  steward: **pds**
  name space id: **pds:**
  class: **Document_Format**
  version: **0.7.0.0.j**

  - description: **The starting_point attribute provides the local_identifier of the object to be accessed first.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **steward_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute**
  version: **0.7.0.0.j**

  - description: **The steward_id attribute provides the abbreviation of the organization that manages the set of registered attributes and classes.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values

    atm
    Steward of the attribute is the PDS Atmospheres Discipline Node
    geo
    Steward of the attribute is the PDS Geosciences Discipline Node
    img
    Steward of the attribute is the PDS Imaging support node
    naif
    Steward of the attribute is the PDS Navigation and Ancillary Information support node
    ops
    Steward of the attribute is the PDS operations function
    pds
    Steward of the attribute is the Planetary Data System
    ppi
    Steward of the attribute is the PDS Planetary Plasma Interaction Discipline Node
    rings
    Steward of the attribute is the PDS Rings Discipline Node

rs
Steward of the attribute is the PDS radio science function
sbn
Steward of the attribute is the PDS Small Bodies Discipline Node

- **steward_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
  - description: **The steward attribute indicates the person or organization who manages a set of registered attributes and classes.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    atm
    Steward of the attribute is the PDS Atmospheres Discipline Node
    geo
    Steward of the attribute is the PDS Geosciences Discipline Node
    img
    Steward of the attribute is the PDS Imaging support node
    naif
    Steward of the attribute is the PDS Navigation and Ancillary Information support node
    ops
    Steward of the attribute is the PDS operations function
    pds
    Steward of the attribute is the Planetary Data System
    ppi
    Steward of the attribute is the PDS Planetary Plasma Interaction Discipline Node
    rings
    Steward of the attribute is the PDS Rings Discipline Node
    rs
    Steward of the attribute is the PDS radio science function
    sbn
    Steward of the attribute is the PDS Small Bodies Discipline Node

- **steward_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Class**
  version: **0.7.0.0.j**
  - description: **The steward_id attribute provides the abbreviation of the organization that manages the set of registered attributes and classes.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    atm
    Steward of the class is the PDS Atmospheres Discipline Node
    geo
    Steward of the class is the PDS Geosciences Discipline Node
    img
    Steward of the class is the PDS Imaging support node
    naif
    Steward of the class is the PDS Navigation and Ancillary Information support node
    ops
    Steward of the class is the PDS operations function
    pds
    Steward of the class is the Planetary Data System
    ppi
    Steward of the class is the PDS Planetary Plasma Interaction Discipline Node
    rings
    Steward of the class is the PDS Rings Discipline Node
    rs
    Steward of the class is the PDS radio science function
    sbn
    Steward of the class is the PDS Small Bodies Discipline Node

- **stop_bit**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Bit**
  version: **0.7.0.0.j**

- description: **The stop-bit attribute provides the location of the last bit in this bit field relative to the first bit in the packed_data field. Bits are numbered continuously across byte boundaries. The first bit location in the packed data field is "1".**
- value_data_type: **ASCII_Integer**
- minimum_value: **1**
- maximum_value: **2147483647**

- **stop_date**

  steward: **pds**
  name space id: **pds:**
  class: **Investigation**
  version: **0.7.0.j**
  - description: **The stop_date attribute provides the date when an activity ended.**
  - value_data_type: **ASCII_Date_YMD**
  - format: **YYYY-MM-DD**

- **stop_date_time**

  steward: **ops**
  name space id: **pds:**
  class: **Data_Set_PDS3**
  version: **0.7.0.j**
  - description: **The stop_date_time attribute provides the date and time at the end of a time interval of interest.**
  - value_data_type: **ASCII_Date_Time**
  - format: **YYYY-MM-DDTHH:MM:SS.SSS/YYYY-DOYTHH:MM:SS.SSS**

- **stop_date_time**

  steward: **pds**
  name space id: **pds:**
  class: **Time_Coordinates**
  version: **0.7.0.j**
  - description: **The stop_date_time attribute provides the date and time at the end of a time interval of interest.**
  - value_data_type: **ASCII_Date_Time**
  - format: **YYYY-MM-DDTHH:MM:SS.SSS/YYYY-DOYTHH:MM:SS.SSS**

- **submitter_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute**
  version: **0.7.0.j**
  - description: **The submitter_id attribute provides the name of the author, who submits the item to the steward.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **submitter_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.j**
  - description: **The submitter_id attribute provides the name of the author, who submits the item to the steward.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **submitter_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Class**
  version: **0.7.0.j**
  - description: **The submitter_id attribute provides the name of the author, who submits the item to the steward.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **subscription_id**

  steward: **ops**
  name space id: **pds:**
  class: **Subscriber_PDS3**
  version: **0.7.0.j**
  - description: **The subscriber_id provides the identification of a PDS subscription.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **supported_architecture**

steward: **ops**
name space id: **pds:**
class: **Software_Binary**
version: **0.7.0.0.j**

- description: **The supported architecture attribute identifies the hardware architecture that can process the software.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **supported_architecture**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**

  - description: **The supported architecture attribute identifies the hardware architecture that can process the software.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **supported_environment**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Script**
  version: **0.7.0.0.j**

  - description: **The supported environment attribute identifies the environment that can process the software.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **supported_os**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Binary**
  version: **0.7.0.0.j**

  - description: **The supported OS attribute identifies the Operating System that supports the software.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **supported_os**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**

  - description: **The supported OS attribute identifies the Operating System that supports the software.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **sw_format_type**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Binary**
  version: **0.7.0.0.j**

  - description: **The sw format type attribute classifies the format of the software.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **sw_format_type**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**

  - description: **The sw format type attribute classifies the format of the software.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **system_requirements**

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

class: **Software_Binary**
version: **0.7.0.0.j**
- description: **The system requirements attribute identifies what is necessary to process the software.**
- value_data_type: **ASCII_Text_Preserved**
- minimum_characters: **1**
- maximum_characters: **2147483647**

- **system_requirements**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Script**
  version: **0.7.0.0.j**
  - description: **The system requirements attribute identifies what is necessary to process the software.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **system_requirements**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Source**
  version: **0.7.0.0.j**
  - description: **The system requirements attribute identifies what is necessary to process the software.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **target_desc**

  steward: **ops**
  name space id: **pds:**
  class: **Target_PDS3**
  version: **0.7.0.0.j**
  - description: **The target_desc attribute describes the characteristics of a particular target.**
  - value_data_type: **ASCII_Text_Preserved**
  - minimum_characters: **1**
  - maximum_characters: **2147483647**

- **target_name**

  steward: **ops**
  name space id: **pds:**
  class: **Target_PDS3**
  version: **0.7.0.0.j**
  - description: **The target_name attribute provides a name by which the target is formally known.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **target_type**

  steward: **ops**
  name space id: **pds:**
  class: **Target_PDS3**
  version: **0.7.0.0.j**
  - description: **The target_type attribute identifies the type of a named target.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **team_name**

  steward: **ops**
  name space id: **pds:**
  class: **PDS_Affiliate**
  version: **0.7.0.0.j**
  - description: **The team_name attribute provides the name of a group of individuals.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    Engineering
    Geosciences
    Headquarters
    Imaging
    Management
    National_Space_Science_Data_Center
    Navigation_Ancillary_Information_Facility

Planetary_Atmospheres
Planetary_Plasma_Interactions
Planetary_Rings
Radio_Science
Small_Bodies

- **telemetry_format_id**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.0.j**
    - description: **The telemetry_format_id attribute supplies a telemetry format code.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **4**

- **telemetry_provider_id**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.0.j**
    - description: **The telemetry_provider_id attribute identifies the provider and or version of the telemetry data used in the generation of this data.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **20**

- **telemetry_source_name**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.0.j**
    - description: **The telemetry_source_name attribute identifies the telemetry source used in creation of a data set.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **60**

- **telemetry_source_type**

  steward: **img**
  name space id: **img:**
  class: **Telemetry_Parameters**
  version: **0.7.0.0.j**
    - description: **The telemetry_source_type attribute classifies the source of the telemetry used in creation of this data collection.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      DATA_PRODUCT

SFDU

1.
   - **telephone_number**

     steward: **ops**
     name space id: **pds:**
     class: **PDS_Affiliate**
     version: **0.7.0.0.j**
       - description: **The telephone_number attribute provides a telephone number in international notation in compliance with the E.164 telephone number format recommendation.**
       - value_data_type: **ASCII_Short_String_Collapsed**
       - minimum_characters: **1**
       - maximum_characters: **255**

   - **title**

     steward: **pds**
     name space id: **pds:**
     class: **Identification_Area**
     version: **0.7.0.0.j**
       - description: **The name given to the resource. Typically, a Title will be a name by which the resource is formally known. - Dublin Core - The title is used to refer to an object in a version independent manner.**
       - value_data_type: **UTF8_Short_String_Collapsed**
       - minimum_characters: **1**

- maximum_characters: **255**

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Detector**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      Accelerometer
      Altimeter
      Camera
      Cosmic_Ray_Detector
      Detector_Array
      Dust_Analyzer
      Imaging_Spectrometer
      Magnetometer
      Meteorology
      Naked_Eye
      Other
      Particle_Detector
      Photometer
      Plasma_Analyzer
      Radio_Science
      Radio_Spectrometer
      Radio_Telescope
      Radiometer
      Reflectometer
      Spectrometer

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument_Host**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      Earth_Based
      Rover
      Spacecraft

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Investigation**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      Individual_Investigation
      Mission
      Observing_Campaign
      Other_Investigation

- **type**

  steward: **pds**

name space id: **pds:**
class: **Investigation_Area**
version: **0.7.0.0.j**

- description: **The type attribute provides a classification for the resource.**
- value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  Individual_Investigation
  Mission
  Observing_Campaign
  Other_Investigation

- **type**

steward: **pds**
name space id: **pds:**
class: **Primary_Result_Description**
version: **0.7.0.0.j**

- description: **The type attribute provides a classification for the resource.**
- value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
- minimum_characters: **1**
- maximum_characters: **255**
- permissible values
  Anaglyph
  Aperture
  Astrometry
  B-Field_Vectors
  Color
  Column_Density
  Comet_Nuclear_Properties
  Count
  Count_Rate
  Data_Number
  Digital_Elevation_Model
  E-Field_Vectors
  Electron
  Environment
  Filter_Curve
  Filtered
  Flux
  Frequency
  Geometry
  Gravity_Model
  Grism
  Hardware_Temperature
  High-Speed
  Image
  Image
  Impact_Characteristics
  Instrument
  Ion
  Lightcurve
  Lines
  Magnetometry
  Magnitude
  Magnitude
  Map
  Mass
  Morphology
  Null_Result
  Parameters
  Photometric
  Photometry
  Point_Spread_Function
  Polarimetry
  Pressure
  Production_Rate
  Pulse_Heights
  Radiance
  Radiometry
  Shape_Model
  Spectrometry
  Spectrophotometry

Spectroscopy
Spectrum
Spherical_Harmonics
Spherical_Harmonics
Spin_State
Thermal
Time-Of-Flight
Triangular_Plate

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
    type1
    Quaternion is of TYPE1
    type2
    Quaternion is of TYPE2

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Resource**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Target**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
    Asteroid
    Comet
    Dust
    Dwarf_Planet
    Galaxy
    Globular_Cluster
    Meteorite
    Meteoroid
    Meteoroid_Stream
    Nebula
    Open_Cluster
    Planet
    Planetary_Nebula
    Planetary_System
    Plasma_Cloud
    Ring
    Satellite
    Star
    Star_Cluster
    Sun
    Terrestrial_Sample
    Trans-Neptunian_Object

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Target_Identification**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed**

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

- **type**

  steward: **pds**
  name space id: **pds:**
  class: **Vector**
  version: **0.7.0.0.j**
    - description: **The type attribute provides a classification for the resource.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      POSITION
      Vector is type POSITION
      VELOCITY
      Vector is type VELOCITY

- **unit**

  steward: **pds**
  name space id: **pds:**
  class: **Axis_Array**
  version: **0.7.0.0.j**
    - description: **The unit attribute provides the unit of measurement.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **unit**

  steward: **pds**
  name space id: **pds:**
  class: **Element_Array**
  version: **0.7.0.0.j**
    - description: **The unit attribute provides the unit of measurement.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **unit**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.0.j**
    - description: **The unit attribute provides the unit of measurement.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **unit**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Bit**
  version: **0.7.0.0.j**
    - description: **The unit attribute provides the unit of measurement.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **unit**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.0.j**
    - description: **The unit attribute provides the unit of measurement.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **unit**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.0.j**
    - description: **The unit attribute provides the unit of measurement.**

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

- **unit**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion_Component**
  version: **0.7.0.j**
    - description: **The unit attribute provides the unit of measurement.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **unit**

  steward: **pds**
  name space id: **pds:**
  class: **Vector_Component**
  version: **0.7.0.j**
    - description: **The unit attribute provides the unit of measurement.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **unit_of_measure_type**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.j**
    - description: **The unit_of_measure_type attribute provides the named grouping of units to be used for this attribute - for example UnitofMeasure_Length and UnitofMeasure_Time.**
    - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
    - minimum_characters: **1**
    - maximum_characters: **255**
    - permissible values
      UnitOfMeasure_AmountOfSubstance
      UnitOfMeasure_Angle
      UnitOfMeasure_AngularVelocity
      UnitOfMeasure_Area
      UnitOfMeasure_Frequency
      UnitOfMeasure_Length
      UnitOfMeasure_MapScale
      UnitOfMeasure_Mass
      UnitOfMeasure_Misc
      UnitOfMeasure_None
      UnitOfMeasure_OpticalPathLength
      UnitOfMeasure_Pressure
      UnitOfMeasure_Radiance
      UnitOfMeasure_Rates
      UnitOfMeasure_SolidAngle
      UnitOfMeasure_Storage
      UnitOfMeasure_Temperature
      UnitOfMeasure_Time
      UnitOfMeasure_Velocity
      UnitOfMeasure_Voltage
      UnitOfMeasure_Volume

- **unknown_constant**

  steward: **pds**
  name space id: **pds:**
  class: **Special_Constants**
  version: **0.7.0.j**
    - description: **The unknown_constant attribute provides a value that indicates the original value was unknown.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **url**

  steward: **ops**
  name space id: **pds:**
  class: **External_Reference_Extended**
  version: **0.7.0.j**
    - description: **The url attribute provides a Uniform Resource Identifier (URI) that specifies where a resource is available and the mechanism for retrieving it.**

- value_data_type: **ASCII_AnyURI**

- **url**

  steward: **pds**
  name space id: **pds:**
  class: **Resource**
  version: **0.7.0.j**
  - description: **The url attribute provides a Uniform Resource Identifier (URI) that specifies where a resource is available and the mechanism for retrieving it.**
  - value_data_type: **ASCII_AnyURI**

- **users_manual_identifier**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Desc**
  version: **0.7.0.j**
  - description: **The users manual identifier attribute provides a formal name used to refer to a manual that describes how to use the software.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **value**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Permissible_Value**
  version: **0.7.0.j**
  - description: **The value attribute provides a single, allowed numerical or character string value.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **value**

  steward: **pds**
  name space id: **pds:**
  class: **Quaternion_Component**
  version: **0.7.0.j**
  - description: **The value attribute provides a single, allowed numerical or character string value.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **value**

  steward: **pds**
  name space id: **pds:**
  class: **Vector_Component**
  version: **0.7.0.j**
  - description: **The value attribute provides a single, allowed numerical or character string value.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **value_begin_date**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Permissible_Value**
  version: **0.7.0.j**
  - description: **The value_begin_date attribute provides the first date on which the permissible value is in effect.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **value_data_type**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Value_Domain**
  version: **0.7.0.j**
  - description: **The value_data_type attribute provides the data type used to represent the value.**
  - value_data_type: **ASCII_Short_String_Collapsed** - Enumerated
  - minimum_characters: **1**
  - maximum_characters: **255**
  - permissible values
    ASCII_AnyURI
    ASCII_Boolean

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

- **value_end_date**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Permissible_Value**
  version: **0.7.0.0.j**
    - description: **The value_end_date attribute provides the last date on which the permissible value is in effect.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **value_meaning**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Permissible_Value**
  version: **0.7.0.0.j**
    - description: **The value_meaning attribute provides the meaning, or semantic content, of the associated permissible value.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **value_offset**

  steward: **pds**
  name space id: **pds:**
  class: **Element_Array**
  version: **0.7.0.0.j**
    - description: **The value_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**

- **value_offset**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Binary**
  version: **0.7.0.0.j**
    - description: **The value_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**

- **value_offset**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Bit**
  version: **0.7.0.0.j**
    - description: **The value_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**

- minimum_value: **-INF**
- maximum_value: **INF**

- **value_offset**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Character**
  version: **0.7.0.0.j**
    - description: **The value_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**

- **value_offset**

  steward: **pds**
  name space id: **pds:**
  class: **Field_Delimited**
  version: **0.7.0.0.j**
    - description: **The value_offset attribute is the offset to be applied to each stored value in order to recover an original value. The observed value (Ov) is calculated from the stored value (Sv) thus: Ov = (Sv * scaling_factor) + value_offset.**
    - value_data_type: **ASCII_Real**
    - minimum_value: **-INF**
    - maximum_value: **INF**

- **vector_components**

  steward: **pds**
  name space id: **pds:**
  class: **Vector**
  version: **0.7.0.0.j**
    - description: **The vector_components attribute provides a count of vector components.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **-2147483648**
    - maximum_value: **2147483647**

- **version_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute**
  version: **0.7.0.0.j**
    - description: **The version_id attribute provides the version of the product, expressed in the PDS [m.n] notation.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **version_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Attribute_Full**
  version: **0.7.0.0.j**
    - description: **The version_id attribute provides the version of the product, expressed in the PDS [m.n] notation.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **version_id**

  steward: **ops**
  name space id: **pds:**
  class: **DD_Class**
  version: **0.7.0.0.j**
    - description: **The version_id attribute provides the version of the product, expressed in the PDS [m.n] notation.**
    - value_data_type: **ASCII_Short_String_Collapsed**
    - minimum_characters: **1**
    - maximum_characters: **255**

- **version_id**

  steward: **ops**
  name space id: **pds:**
  class: **Software_Desc**
  version: **0.7.0.0.j**
    - description: **The version_id attribute provides the version of the product, expressed in the PDS [m.n] notation.**
    - value_data_type: **ASCII_Short_String_Collapsed**

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

- **version_id**

  steward: **pds**
  name space id: **pds:**
  class: **Identification_Area**
  version: **0.7.0.j**
  - description: **The version_id attribute provides the version of the product, expressed in the PDS [m.n] notation.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**
  - pattern: **([0-9])(\.){1}([0-9])**

- **version_id**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument**
  version: **0.7.0.j**
  - description: **The version_id attribute provides the version of the product, expressed in the PDS [m.n] notation.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **version_id**

  steward: **pds**
  name space id: **pds:**
  class: **Instrument_Host**
  version: **0.7.0.j**
  - description: **The version_id attribute provides the version of the product, expressed in the PDS [m.n] notation.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **version_id**

  steward: **pds**
  name space id: **pds:**
  class: **Modification_Detail**
  version: **0.7.0.j**
  - description: **The version_id attribute provides the version of the product, expressed in the PDS [m.n] notation.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_de_fullname**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.j**
  - description: **The volume_de_fullname attribute provide the full name of the data engineer.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_format**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.j**
  - description: **The volume_format attribute identifies the logical format used in writing a data volume.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_id**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.j**
  - description: **The volume_id attribute provides a unique identifier for a data volume. Example: MG_1001.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_name**

steward: **ops**
name space id: **pds:**
class: **Volume_PDS3**
version: **0.7.0.0.j**
- description: **The volume_name attribute contains the name of a data volume.**
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **volume_series_name**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_Set_PDS3**
  version: **0.7.0.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_set_id**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.0.j**
  - 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**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_set_id**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_Set_PDS3**
  version: **0.7.0.0.j**
  - 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**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_set_name**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_Set_PDS3**
  version: **0.7.0.0.j**
  - 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.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_size**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.0.j**
  - description: **The volume size attribute provide the number of bytes in the volume.**
  - value_data_type: **ASCII_Short_String_Collapsed**
  - minimum_characters: **1**
  - maximum_characters: **255**

- **volume_version_id**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_PDS3**
  version: **0.7.0.0.j**
  - 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'.
- value_data_type: **ASCII_Short_String_Collapsed**
- minimum_characters: **1**
- maximum_characters: **255**

- **volumes**

  steward: **ops**
  name space id: **pds:**
  class: **Volume_Set_PDS3**
  version: **0.7.0.0.j**
    - description: **The volumes element provides the number of physical data volumes contained in a volume set.**
    - value_data_type: **ASCII_Integer**
    - minimum_value: **0**
    - maximum_value: **2147483647**

- **BOOLEAN**

  version_identifier: **0.7.0.0.j**
  definition: **The values true and false, such that true is not equal to false. - ISO/IEC 11404**

- **CHARACTER**

  version_identifier: **0.7.0.0.j**
  definition: **The value space of a character datatype comprises exactly the members of the character-sets identified by the repertoire-list. - ISO/IEC 11404**

- **COMPLEX**

  version_identifier: **0.7.0.0.j**
  definition: **The value space of the mathematical complex type is the field which is the solution space of all polynomial equations having real coefficients. The value space of a computational complex datatype shall be a subset of the mathematical complex type, characterized by two parametric values, radix and factor, which, taken together, describe the precision to which values of the datatype are distinguishable. - ISO/IEC 11404**

- **ENUMERATED**

  version_identifier: **0.7.0.0.j**
  definition: **The value space of an enumerated datatype is the set comprising exactly the named values in the enumerated-value-list, each of which is designated by a unique enumerated-literal. The order of these values is given by the sequence of their occurrence in the enumerated-value-list, which shall be referred to as the naming sequence of the enumerated datatype. - ISO/IEC 11404**

- **INTEGER**

  version_identifier: **0.7.0.0.j**
  definition: **Mathematically, the infinite ring produced from the additive identity (0) and the multiplicative identity (1) by requiring 0 = 1 and Add(x,1) ? y for any y = x . That is: ..., -2, -1, 0, 1, 2, ... (a denumerably infinite list). - ISO/IEC 11404**

- **OCTET**

  version_identifier: **0.7.0.0.j**
  definition: **Each value of datatype octet is a code, represented by a non-negative integer value in the range [0, 255]. - ISO/IEC 11404**

- **REAL**

  version_identifier: **0.7.0.0.j**
  definition: **The value space of the mathematical real type comprises all values which are the limits of convergent sequences of rational numbers. The value space of a computational real datatype shall be a subset of the mathematical real type. - ISO/IEC 11404**

- **SCALED**

  version_identifier: **0.7.0.0.j**
  definition: **The value space of a scaled datatype is that set of values of the rational datatype which are expressible as a value of datatype Integer divided by radix raised to the power factor. - ISO/IEC 11404**

- **TIME**

  version_identifier: **0.7.0.0.j**
  definition: **The value-space of a date-and-time datatype is the denumerably infinite set of all possible points in time with the resolution (time-unit, radix, factor). The time-literal denotes the date-and-time value specified by the characterstring as interpreted under ISO 8601. - ISO/IEC 11404**

- **TIME_INTERVAL**

  version_identifier: **0.7.0.0.j**
  definition: **All values which are integral multiples of one radix ^ (-factor) unit of the specified timeunit. - ISO/IEC 11404**

- **VOID**

  version_identifier: **0.7.0.0.j**
  definition: **Conceptually, the value space of the void datatype is empty, but a single nominal value is necessary to perform the "presence required" function. - ISO/IEC 11404**

- **COUNT**

  version_identifier: **0.7.0.0.j**

definition: **A numeric value indicating a current total or tally.**

- **DATE**

  version_identifier: **0.7.0.0.j**
  definition: **A representation of time in which the smallest unit of measure is a day.**

- **DATE_TIME**

  version_identifier: **0.7.0.0.j**
  definition: **A value that measures the point of occurrence of an event expressed in date and time in a standard form.**

- **DESCRIPTION**

  version_identifier: **0.7.0.0.j**
  definition: **A free-form, unlimited-length character string that provides a description of the item identified.**

- **DIRECTION**

  version_identifier: **0.7.0.0.j**
  definition: **TBD**

- **FLAG**

  version_identifier: **0.7.0.0.j**
  definition: **A boolean condition indicator, limited to two states.**

- **FORMAT**

  version_identifier: **0.7.0.0.j**
  definition: **A specified or predetermined arrangement of data within a file or on a storage medium.**

- **GROUP**

  version_identifier: **0.7.0.0.j**
  definition: **Names a collection or aggregation of elements. Example: ALT FLAG GROUP**

- **GUID**

  version_identifier: **0.7.0.0.j**
  definition: **A globally unique, immutable, and opaque product identifer.**

- **ID**

  version_identifier: **0.7.0.0.j**
  definition: **A shorthand alphanumeric identifier.**

- **IDENTIFIER**

  version_identifier: **0.7.0.0.j**
  definition: **A shorthand alphanumeric identifier.**

- **LOCAL_IDENTIFIER**

  version_identifier: **0.7.0.0.j**
  definition: **An identifier unique within a product label. When appended to the LID, it provides a global identifier for a component of an product.**

- **LOGICAL_IDENTIFIER**

  version_identifier: **0.7.0.0.j**
  definition: **A unique product identifier without the version. It identifies the set of all versions of a product.**

- **MASK**

  version_identifier: **0.7.0.0.j**
  definition: **An unsigned numeric value representing the bit positions within a value.**

- **NAME**

  version_identifier: **0.7.0.0.j**
  definition: **A literal value representing the common term used to identify an element.**

- **NOTE**

  version_identifier: **0.7.0.0.j**
  definition: **A textual expression of opinion, an observation, or a criticism; a remark.**

- **NUMBER**

  version_identifier: **0.7.0.0.j**
  definition: **A quantity.**

- **QUATERNION**

  version_identifier: **0.7.0.0.j**
  definition: **TBD**

- **RATIO**

  version_identifier: **0.7.0.0.j**
  definition: **The relation between two quantities with respect to the number of times the first contains the second.**

- **SEQUENCE**

  version_identifier: **0.7.0.0.j**

- **SET**

  version_identifier: **0.7.0.0.j**
  definition: **A collection of items having some feature in common or which bear a certain relation to one another, e.g. all even numbers.**

- **SUMMARY**

  version_identifier: **0.7.0.0.j**
  definition: **An abridged description.**

- **TEXT**

  version_identifier: **0.7.0.0.j**
  definition: **A free-form, unlimited length character string.**

- **TYPE**

  version_identifier: **0.7.0.0.j**
  definition: **A literal that indicates membership in a predefined class.**

- **UNIT**

  version_identifier: **0.7.0.0.j**
  definition: **A determinate quantity adopted as a standard of measurement.**

- **VALUE**

  version_identifier: **0.7.0.0.j**
  definition: **The default class word for data element names not terminated with a class word.**

- **VECTOR**

  version_identifier: **0.7.0.0.j**
  definition: **A quantity that has both length and direction which are independent of both the units and of the coordinate system in which each are measured. The vector direction is uniquely defined in terms of an ordered set of components with respect to the particular coordinate system for which those components have been defined.**

- **AdministrationRecord**

  identifier: **DD_0.7.0.0.j**
  administrative_note: Test load from PDS4 Master Model
  administrative_status: Final
  change_description: *In development.
  creation_date: **2009-10-10**
  effective_date: **2009-10-10**
  last_change_date: **2009-10-10**
  origin: **Planetary Data System**
  registration_status: **Preferred**
  unresolved_issue: **Issues still being determined.**
  until_date: **2019-12-31**
  label: **DD_0.7.0.0.j**
  explanatory _comment: This is a test load of a ISO/IEC 11179 Data Dictionary from the PDS4 master model.

- **Steward**

  identifier: **Steward_PDS**
  label: **Steward_PDS**
  contact: **Elizabeth_Rye**
  organization: **RA_0001_NASA_PDS_1**

- **Submitter**

  identifier: **Submitter_PDS**
  label: **Submitter_PDS**
  contact: **Elizabeth_Rye**
  organization: **RA_0001_NASA_PDS_1**

- **RegistrationAuthority**

  Identifier: **RA_0001_NASA_PDS_1**
  organization_mailing_address: **4800 Oak Grove Drive, Pasadena, CA 91109**
  organization_name: **NASA Planetary Data System**
  label: **RA_0001_NASA_PDS_1**
  documentation_language_identifier: **LI_English**
  language_used: **LI_English**
  registrar: **PDS_Registrar**
  registration_authority_identifier: **0001_NASA_PDS_1**

2. **PDS4 Data Type Definitions Wed Apr 11 17:26:38 PDT 2012**

   Generated from the PDS4 Information Model Version 0.7.0.0.j

   - **Data Type:ASCII_AnyURI**

description: **The ASCII AnyURI class indicates a URI or its subclasses URN and URL.**
xml_schema_base_type: **xsd:anyURI**
character_encoding: **UTF-8**

- **Data Type:ASCII_Boolean**

  description: **The ASCII_Boolean class indicates a boolean.**
  xml_schema_base_type: **xsd:boolean**
  character_encoding: **UTF-8**

- **Data Type:ASCII_DOI**

  description: **The ASCII DOI class indicates a digital object identifier (DOI).**
  xml_schema_base_type: **xsd:string**
  formation_rule: **nn.nnnn/nnn**
  character_constraint: **ASCII**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Date**

  description: **The ASCII_Date class indicates a date in either YMD or DOY format.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **YYYY-MM-DD/YYYY-DOY**
  character_constraint: **ASCII**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Date_DOY**

  description: **The ASCII_Date_DOY class indicates a date in DOY format.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **YYYY-DOY**
  character_constraint: **ASCII**
  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.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **YYYY-MM-DDTHH:MM:SS.SSS/YYYY-DOYTHH:MM:SS.SSS**
  character_constraint: **ASCII**
  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.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **YYYY-DOYTHH:MM:SS.SSS**
  character_constraint: **ASCII**
  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.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **YYYY-MM-DDTHH:MM:SS.SSSZ**
  character_constraint: **ASCII**
  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.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **YYYY-MM-DDTHH:MM:SS.SSS**
  character_constraint: **ASCII**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Date_YMD**

  description: **The ASCII_Date_YMD class indicates a date in YMD format.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **YYYY-MM-DD**
  character_constraint: **ASCII**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Directory_Path_Name**

  description: **The ASCII Directory Path Name class indicates a system directory path.**
  xml_schema_base_type: **xsd:token**
  formation_rule: **dir1/dir2/**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **255**
  character_encoding: **UTF-8**

- **Data Type:ASCII_File_Name**

description: **The ASCII File Name class indicates a system file name.**
xml_schema_base_type: **xsd:token**
formation_rule: **file_name.file_extension**
minimum_characters: **1**
character_constraint: **ASCII**
maximum_characters: **255**
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.**
  xml_schema_base_type: **xsd:token**
  formation_rule: **dir1/dir2/file_name.file_extension**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **255**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Identifier**

  description: **The ASCII_Identifier class indicates a identifier.**
  xml_schema_base_type: **xsd:string**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **100**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Integer**

  description: **The ASCII_Integer class indicates an integer.**
  xml_schema_base_type: **xsd:integer**
  maximum_value: **2147483647**
  minimum_value: **-2147483648**
  character_encoding: **UTF-8**

- **Data Type:ASCII_LID**

  description: **The ASCII_LID class indicates a logical identifier.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **urn:nasa:pds:xxxx**
  minimum_characters: **14**
  character_constraint: **ASCII**
  maximum_characters: **255**
  character_encoding: **UTF-8**

- **Data Type:ASCII_LIDVID**

  description: **The ASCII_LIDVID class indicates a logical identifier and version identifier.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **urn:nasa:pds:xxxx::M.n**
  minimum_characters: **19**
  character_constraint: **ASCII**
  maximum_characters: **255**
  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).**
  xml_schema_base_type: **xsd:string**
  formation_rule: **0123456789abcdef**
  minimum_characters: **32**
  character_constraint: **ASCII**
  maximum_characters: **32**
  character_encoding: **UTF-8**

- **Data Type:ASCII_NonNegative_Integer**

  description: **The ASCII_NonNegative_Integer class indicates a non-negative integer.**
  xml_schema_base_type: **xsd:integer**
  maximum_value: **4294967295**
  minimum_value: **0**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Numeric_Base16**

  description: **The ASCII Numeric Base16 class indicates a ASCII encoded string constrained to hexadecimal digits.**
  xml_schema_base_type: **xsd:hexBinary**
  minimum_characters: **1**
  maximum_characters: **255**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Numeric_Base2**

description: **The ASCII Numeric Base2 class indicates a ASCII encoded string constrained to binary digits.**
xml_schema_base_type: **xsd:string**
minimum_characters: **1**
character_constraint: **ASCII**
maximum_characters: **255**
character_encoding: **UTF-8**

- **Data Type:ASCII_Numeric_Base8**

  description: **The ASCII Numeric Base8 class indicates a ASCII encoded string constrained to octal digits.**
  xml_schema_base_type: **xsd:string**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **255**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Real**

  description: **The ASCII_Real class indicates a real.**
  xml_schema_base_type: **xsd:double**
  maximum_value: **INF**
  minimum_value: **-INF**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Short_String_Collapsed**

  description: **The ASCII_Short_String_Collapsed class indicates a limited length, whitespace-collapsed string.**
  xml_schema_base_type: **xsd:token**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **255**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Short_String_Preserved**

  description: **The ASCII_Short_String_Preserved class indicates a limited length, whitespace-preserved string.**
  xml_schema_base_type: **xsd:string**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **255**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Text_Collapsed**

  description: **The ASCII_Text_Collapsed class indicates an unlimited length, whitespace-collapsed text string.**
  xml_schema_base_type: **xsd:token**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **2147483647**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Text_Preserved**

  description: **The ASCII_Text_Preserved class indicates an unlimited length, whitespace-preserved text string.**
  xml_schema_base_type: **xsd:string**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **2147483647**
  character_encoding: **UTF-8**

- **Data Type:ASCII_Time**

  description: **The ASCII_Time class indicates a time value.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **HH:MM:SS.SSS**
  minimum_characters: **1**
  character_constraint: **ASCII**
  maximum_characters: **20**
  character_encoding: **UTF-8**

- **Data Type:ASCII_VID**

  description: **The ASCII_VID class indicates a version identifier.**
  xml_schema_base_type: **xsd:string**
  formation_rule: **M.m**
  minimum_characters: **3**
  character_constraint: **ASCII**
  maximum_characters: **100**
  character_encoding: **UTF-8**

- **Data Type:ComplexLSB16**

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

- **Data Type:ComplexLSB8**

  description: **Complex number consisting of two LSB 4 byte decimal reals.**
- **Data Type:ComplexMSB16**

  description: **Complex number consisting of two MSB 8 byte decimal reals.**
- **Data Type:ComplexMSB8**

  description: **Complex number consisting of two MSB 4 byte decimal reals.**
- **Data Type:Float3Vector**

  description: **The Float3Vector data type class is a prototype of Anne's simple demo schema for float3vector.**
  xml_schema_base_type: **xsd:token**
  character_encoding: **UTF-8**
- **Data Type:IEEE754LSBDouble**

  description: **IEEE 754 LSB double precision floating point**
- **Data Type:IEEE754LSBSingle**

  description: **IEEE 754 LSB single precision floating point**
- **Data Type:IEEE754MSBDouble**

  description: **IEEE 754 MSB double precision floating point**
- **Data Type:IEEE754MSBSingle**

  description: **IEEE 754 MSB single precision floating point**
- **Data Type:SignedBitString**

  description: **Signed Bit String**
- **Data Type:SignedByte**

  description: **Signed 8-bit byte**
- **Data Type:SignedLSB2**

  description: **Signed 2's-complement LSB 2-byte integer**
- **Data Type:SignedLSB4**

  description: **Signed 2's-complement LSB 4-byte integer**
- **Data Type:SignedLSB8**

  description: **Signed 2's-complement LSB 8-byte integer**
- **Data Type:SignedMSB2**

  description: **Signed 2's-complement MSB 2-byte integer**
- **Data Type:SignedMSB4**

  description: **Signed 2's-complement MSB 4-byte integer**
- **Data Type:SignedMSB8**

  description: **Signed 2's-complement MSB 8-byte integer**
- **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.**
  xml_schema_base_type: **xsd:token**
  minimum_characters: **1**
  maximum_characters: **255**
  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.**
  xml_schema_base_type: **xsd:string**
  minimum_characters: **1**
  maximum_characters: **255**
  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.**
  xml_schema_base_type: **xsd:string**
  minimum_characters: **1**
  maximum_characters: **2147483647**
  character_encoding: **UTF-8**
- **Data Type:UnsignedBitString**

  description: **Unsigned Bit String**

- **Data Type:UnsignedByte**

  description: **Unsigned 8-bit byte**
- **Data Type:UnsignedLSB2**

  description: **Unsigned 2's-complement LSB 2-byte integer**
- **Data Type:UnsignedLSB4**

  description: **Unsigned 2's-complement LSB 4-byte integer**
- **Data Type:UnsignedLSB8**

  description: **Unsigned 2's-complement LSB 8-byte integer**
- **Data Type:UnsignedMSB2**

  description: **Unsigned 2's-complement MSB 2-byte integer**
- **Data Type:UnsignedMSB4**

  description: **Unsigned 2's-complement MSB 4-byte integer**
- **Data Type:UnsignedMSB8**

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

3. **Product Index**

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- **Collection_Volume_Set_PDS3**
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- **Product_Context**
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- **Product_Document**
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- **Product_File_Text**
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- **Product_Mission_PDS3**
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- **Product_Target_PDS3**
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4. **Class Index**

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- **Product_Instrument_PDS3**
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- **container_type** - **container_type** in ops:Product_Zipped
- **copyright** - **copyright** in pds:Document_Description
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- **curating_node_id** - **curating_node_id** in ops:Volume_PDS3
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- **data_set_release_date** - **data_set_release_date** in ops:Data_Set_PDS3
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- **definition** - **definition** in ops:DD_Attribute, **definition** in ops:DD_Attribute_Full, **definition** in ops:DD_Class, **definition** in ops:Terminological_Entry
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- **doi** - **doi** in pds:Document_Description
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- **earth_received_stop_date_time** - **earth_received_stop_date_time** in img:Telemetry_Parameters
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- **expected_packets** - **expected_packets** in img:Telemetry_Parameters
- **external_standard_id** - **external_standard_id** in pds:Document_File, **external_standard_id** in pds:Encoded_Binary, **external_standard_id** in pds:Encoded_Byte_Stream, **external_standard_id** in pds:Encoded_Image, **external_standard_id** in pds:File_PDF, **external_standard_id** in pds:Header, **external_standard_id** in pds:Header_Binary, **external_standard_id** in pds:Parsable_Byte_Stream, **external_standard_id** in ops:Service_Description, **external_standard_id** in pds:SPICE_Kernel, **external_standard_id** in pds:Table_Delimited, **external_standard_id** in pds:XML_Schema
- **fields** - **fields** in pds:Group_Field_Binary, **fields** in pds:Group_Field_Character, **fields** in pds:Group_Field_Delimited, **fields** in pds:Record_Binary, **fields** in pds:Record_Character, **fields** in pds:Record_Delimited
- **field_delimiter** - **field_delimiter** in pds:Table_Delimited
- **field_format** - **field_format** in pds:Field_Binary, **field_format** in pds:Field_Bit, **field_format** in pds:Field_Character, **field_format** in pds:Field_Delimited
- **field_length** - **field_length** in pds:Field_Binary, **field_length** in pds:Field_Character, **field_length** in pds:Field_Delimited
- **field_location** - **field_location** in pds:Field_Binary, **field_location** in pds:Field_Character
- **field_number** - **field_number** in pds:Field_Binary, **field_number** in pds:Field_Character, **field_number** in pds:Field_Delimited
- **files** - **files** in ops:Software_Binary, **files** in ops:Software_Script, **files** in ops:Software_Source
- **file_name** - **file_name** in pds:File
- **file_size** - **file_size** in pds:File
- **file_specification_name** - **file_specification_name** in pds:Bundle_Member_Entry, **file_specification_name** in pds:Zipped_Member_Entry
- **first_sampling_parameter_value** - **first_sampling_parameter_value** in pds:Uniformly_Sampled
- **formation_rule** - **formation_rule** in ops:DD_Value_Domain, **formation_rule** in pds:ASCII_Date, **formation_rule** in pds:ASCII_Date_DOY, **formation_rule** in pds:ASCII_Date_Time, **formation_rule** in pds:ASCII_Date_Time_DOY, **formation_rule** in pds:ASCII_Date_Time_UTC, **formation_rule** in pds:ASCII_Date_Time_YMD, **formation_rule** in pds:ASCII_Date_YMD, **formation_rule** in pds:ASCII_Directory_Path_Name, **formation_rule** in pds:ASCII_DOI, **formation_rule** in pds:ASCII_File_Name, **formation_rule** in pds:ASCII_File_Specification_Name, **formation_rule** in pds:ASCII_LID, **formation_rule** in pds:ASCII_LIDVID, **formation_rule** in pds:ASCII_MD5_Checksum, **formation_rule** in pds:ASCII_Time, **formation_rule** in pds:ASCII_VID, **formation_rule** in pds:Character_Data_Type
- **format_type** - **format_type** in pds:Document_Format
- **full_name** - **full_name** in ops:Ingest_DD, **full_name** in ops:Subscriber_PDS3, **full_name** in pds:Update_Entry
- **group_length** - **group_length** in pds:Group_Field_Binary, **group_length** in pds:Group_Field_Character
- **group_location** - **group_location** in pds:Group_Field_Binary, **group_location** in pds:Group_Field_Character
- **information_model_version** - **information_model_version** in pds:Identification_Area
- **install_notes** - **install_notes** in ops:Software_Script
- **institution_name** - **institution_name** in pds:Node, **institution_name** in pds:PDS_Affiliate
- **instrument_desc** - **instrument_desc** in ops:Instrument_PDS3
- **instrument_host_desc** - **instrument_host_desc** in ops:Instrument_Host_PDS3

- **instrument_host_id** - **instrument_host_id** in ops:Instrument_Host_PDS3
- **instrument_host_name** - **instrument_host_name** in ops:Instrument_Host_PDS3
- **instrument_host_type** - **instrument_host_type** in ops:Instrument_Host_PDS3
- **instrument_id** - **instrument_id** in ops:Instrument_PDS3
- **instrument_name** - **instrument_name** in ops:Instrument_PDS3
- **instrument_serial_number** - **instrument_serial_number** in ops:Instrument_PDS3
- **instrument_type** - **instrument_type** in ops:Instrument_PDS3
- **instrument_version_id** - **instrument_version_id** in ops:Instrument_PDS3
- **invalid_constant** - **invalid_constant** in pds:Special_Constants
- **kernel_type** - **kernel_type** in pds:SPICE_Kernel
- **keywords** - **keywords** in pds:Citation_Information
- **language** - **language** in ops:Terminological_Entry
- **last_modification_date_time** - **last_modification_date_time** in ops:Ingest_DD
- **last_sampling_parameter_value** - **last_sampling_parameter_value** in pds:Uniformly_Sampled
- **lidvid_reference** - **lidvid_reference** in pds:Bundle_Member_Entry, **lidvid_reference** in pds:Internal_Reference, **lidvid_reference** in pds:Zipped_Member_Entry
- **lid_reference** - **lid_reference** in pds:Bundle_Member_Entry, **lid_reference** in pds:Internal_Reference
- **line_display_direction** - **line_display_direction** in pds:Display_2D_Image
- **local_identifier** - **local_identifier** in ops:DD_Association, **local_identifier** in ops:DD_Attribute, **local_identifier** in ops:DD_Attribute_Full, **local_identifier** in ops:DD_Class, **local_identifier** in ops:Ingest_DD, **local_identifier** in ops:Subscriber_PDS3, **local_identifier** in pds:Array, **local_identifier** in pds:Encoded_Byte_Stream, **local_identifier** in pds:Field_Statistics, **local_identifier** in pds:File, **local_identifier** in pds:Geometry, **local_identifier** in pds:Object_Statistics, **local_identifier** in pds:Parsable_Byte_Stream, **local_identifier** in pds:Quaternion, **local_identifier** in pds:Table_Base, **local_identifier** in pds:Update, **local_identifier** in pds:Vector
- **local_mean_solar_time** - **local_mean_solar_time** in pds:Time_Coordinates
- **local_true_solar_time** - **local_true_solar_time** in pds:Time_Coordinates
- **logical_identifier** - **logical_identifier** in pds:Identification_Area
- **maximum** - **maximum** in pds:Field_Statistics, **maximum** in pds:Object_Statistics
- **maximum_characters** - **maximum_characters** in ops:DD_Value_Domain, **maximum_characters** in pds:ASCII_AnyURI, **maximum_characters** in pds:ASCII_Date, **maximum_characters** in pds:ASCII_Date_DOY, **maximum_characters** in pds:ASCII_Date_Time, **maximum_characters** in pds:ASCII_Date_Time_DOY, **maximum_characters** in pds:ASCII_Date_Time_UTC, **maximum_characters** in pds:ASCII_Date_Time_YMD, **maximum_characters** in pds:ASCII_Date_YMD, **maximum_characters** in pds:ASCII_Directory_Path_Name, **maximum_characters** in pds:ASCII_DOI, **maximum_characters** in pds:ASCII_File_Name, **maximum_characters** in pds:ASCII_File_Specification_Name, **maximum_characters** in pds:ASCII_Identifier, **maximum_characters** in pds:ASCII_Integer, **maximum_characters** in pds:ASCII_LID, **maximum_characters** in pds:ASCII_LIDVID, **maximum_characters** in pds:ASCII_MD5_Checksum, **maximum_characters** in pds:ASCII_NonNegative_Integer, **maximum_characters** in pds:ASCII_Numeric_Base16, **maximum_characters** in pds:ASCII_Numeric_Base2, **maximum_characters** in pds:ASCII_Numeric_Base8, **maximum_characters** in pds:ASCII_Real, **maximum_characters** in pds:ASCII_Short_String_Collapsed, **maximum_characters** in pds:ASCII_Short_String_Preserved, **maximum_characters** in pds:ASCII_Text_Collapsed, **maximum_characters** in pds:ASCII_Text_Preserved, **maximum_characters** in pds:ASCII_Time, **maximum_characters** in pds:ASCII_VID, **maximum_characters** in pds:Character_Data_Type, **maximum_characters** in pds:UTF8_Short_String_Collapsed, **maximum_characters** in pds:UTF8_Short_String_Preserved, **maximum_characters** in pds:UTF8_Text_Preserved
- **maximum_occurrences** - **maximum_occurrences** in ops:DD_Association
- **maximum_record_bytes** - **maximum_record_bytes** in pds:File
- **maximum_record_length** - **maximum_record_length** in pds:Record_Delimited
- **maximum_scaled_value** - **maximum_scaled_value** in pds:Object_Statistics
- **maximum_value** - **maximum_value** in ops:DD_Value_Domain, **maximum_value** in pds:ASCII_Date_Time, **maximum_value** in pds:ASCII_Date_Time_DOY, **maximum_value** in pds:ASCII_Date_Time_UTC, **maximum_value** in pds:ASCII_Date_Time_YMD, **maximum_value** in pds:ASCII_Identifier, **maximum_value** in pds:ASCII_Integer, **maximum_value** in pds:ASCII_LID, **maximum_value** in pds:ASCII_NonNegative_Integer, **maximum_value** in pds:ASCII_Numeric_Base16, **maximum_value** in pds:ASCII_Numeric_Base2, **maximum_value** in pds:ASCII_Real, **maximum_value** in pds:ASCII_Short_String_Collapsed, **maximum_value** in pds:ASCII_Short_String_Preserved, **maximum_value** in pds:ASCII_Text_Preserved, **maximum_value** in pds:ASCII_Time, **maximum_value** in pds:ASCII_VID, **maximum_value** in pds:Character_Data_Type, **maximum_value** in pds:UTF8_Short_String_Collapsed, **maximum_value** in pds:UTF8_Short_String_Preserved, **maximum_value** in pds:UTF8_Text_Preserved
- **md5_checksum** - **md5_checksum** in pds:File, **md5_checksum** in pds:Object_Statistics, **md5_checksum** in pds:Zipped_Member_Entry
- **mean** - **mean** in pds:Field_Statistics, **mean** in pds:Object_Statistics
- **median** - **median** in pds:Field_Statistics, **median** in pds:Object_Statistics
- **medium_type** - **medium_type** in ops:NSSDC, **medium_type** in ops:Volume_PDS3
- **member_status** - **member_status** in pds:Bundle_Member_Entry
- **minimum** - **minimum** in pds:Field_Statistics, **minimum** in pds:Object_Statistics
- **minimum_characters** - **minimum_characters** in ops:DD_Value_Domain, **minimum_characters** in pds:ASCII_AnyURI, **minimum_characters** in pds:ASCII_Date, **minimum_characters** in pds:ASCII_Date_DOY, **minimum_characters** in pds:ASCII_Date_Time, **minimum_characters** in pds:ASCII_Date_Time_DOY, **minimum_characters** in pds:ASCII_Date_Time_UTC, **minimum_characters** in pds:ASCII_Date_Time_YMD, **minimum_characters** in pds:ASCII_Date_YMD, **minimum_characters** in pds:ASCII_Directory_Path_Name, **minimum_characters** in pds:ASCII_DOI, **minimum_characters** in pds:ASCII_File_Name, **minimum_characters** in pds:ASCII_File_Specification_Name, **minimum_characters** in pds:ASCII_Identifier, **minimum_characters** in pds:ASCII_Integer, **minimum_characters** in pds:ASCII_LID, **minimum_characters** in pds:ASCII_LIDVID, **minimum_characters** in pds:ASCII_MD5_Checksum, **minimum_characters** in pds:ASCII_NonNegative_Integer, **minimum_characters** in pds:ASCII_Numeric_Base16,

minimum_characters in pds:ASCII_Numeric_Base2, **minimum_characters** in pds:ASCII_Numeric_Base8, **minimum_characters** in pds:ASCII_Real, **minimum_characters** in pds:ASCII_Short_String_Collapsed, **minimum_characters** in pds:ASCII_Short_String_Preserved, **minimum_characters** in pds:ASCII_Text_Collapsed, **minimum_characters** in pds:ASCII_Text_Preserved, **minimum_characters** in pds:ASCII_Time, **minimum_characters** in pds:ASCII_VID, **minimum_characters** in pds:Character_Data_Type, **minimum_characters** in pds:UTF8_Short_String_Collapsed, **minimum_characters** in pds:UTF8_Short_String_Preserved, **minimum_characters** in pds:UTF8_Text_Preserved

- **minimum_occurrences** - **minimum_occurrences** in ops:DD_Association
- **minimum_scaled_value** - **minimum_scaled_value** in pds:Object_Statistics
- **minimum_value** - **minimum_value** in ops:DD_Value_Domain, **minimum_value** in pds:ASCII_Date_Time, **minimum_value** in pds:ASCII_Date_Time_DOY, **minimum_value** in pds:ASCII_Date_Time_UTC, **minimum_value** in pds:ASCII_Date_Time_YMD, **minimum_value** in pds:ASCII_Identifier, **minimum_value** in pds:ASCII_Integer, **minimum_value** in pds:ASCII_LID, **minimum_value** in pds:ASCII_NonNegative_Integer, **minimum_value** in pds:ASCII_Numeric_Base16, **minimum_value** in pds:ASCII_Numeric_Base2, **minimum_value** in pds:ASCII_Real, **minimum_value** in pds:ASCII_Short_String_Collapsed, **minimum_value** in pds:ASCII_Short_String_Preserved, **minimum_value** in pds:ASCII_Text_Preserved, **minimum_value** in pds:ASCII_Time, **minimum_value** in pds:ASCII_VID, **minimum_value** in pds:Character_Data_Type, **minimum_value** in pds:UTF8_Short_String_Collapsed, **minimum_value** in pds:UTF8_Short_String_Preserved, **minimum_value** in pds:UTF8_Text_Preserved
- **missing_constant** - **missing_constant** in pds:Special_Constants
- **mission_desc** - **mission_desc** in ops:Mission_PDS3
- **mission_name** - **mission_name** in ops:Mission_PDS3
- **mission_objectives_summary** - **mission_objectives_summary** in ops:Mission_PDS3
- **mission_start_date** - **mission_start_date** in ops:Mission_PDS3
- **mission_stop_date** - **mission_stop_date** in ops:Mission_PDS3
- **modification_date** - **modification_date** in pds:Modification_Detail
- **naif_host_id** - **naif_host_id** in pds:Instrument_Host
- **naif_instrument_id** - **naif_instrument_id** in pds:Instrument
- **name** - **name** in ops:DD_Attribute, **name** in ops:DD_Attribute_Full, **name** in ops:DD_Class, **name** in ops:External_Reference_Extended, **name** in pds:Node, **name** in pds:PDS_Affiliate, **name** in pds:PDS_Guest, **name** in ops:Software_Desc, **name** in pds:Detector, **name** in pds:Field_Binary, **name** in pds:Field_Bit, **name** in pds:Field_Character, **name** in pds:Field_Delimited, **name** in pds:Header_Binary, **name** in pds:Instrument, **name** in pds:Instrument_Host, **name** in pds:Investigation, **name** in pds:Investigation_Area, **name** in pds:Observing_System, **name** in pds:Observing_System_Component, **name** in pds:Parsable_Byte_Stream, **name** in pds:Quaternion, **name** in pds:Quaternion_Component, **name** in pds:Resource, **name** in pds:Target, **name** in pds:Target_Identification, **name** in ops:Terminological_Entry, **name** in pds:Vector, **name** in pds:Vector_Component
- **name_space_id** - **name_space_id** in ops:DD_Attribute, **name_space_id** in ops:DD_Attribute_Full, **name_space_id** in ops:DD_Class
- **not_applicable_constant** - **not_applicable_constant** in pds:Special_Constants
- **nssdc_collection_id** - **nssdc_collection_id** in ops:NSSDC
- **observing_system_component_type** - **observing_system_component_type** in pds:Observing_System_Component
- **offset** - **offset** in pds:Array, **offset** in pds:Encoded_Byte_Stream, **offset** in pds:Parsable_Byte_Stream, **offset** in pds:Table_Base
- **os_version** - **os_version** in ops:Software_Binary, **os_version** in ops:Software_Source
- **packet_map_mask** - **packet_map_mask** in img:Telemetry_Parameters
- **pattern** - **pattern** in ops:DD_Value_Domain, **pattern** in pds:ASCII_Date_DOY, **pattern** in pds:ASCII_Date_Time_DOY, **pattern** in pds:ASCII_Date_Time_YMD, **pattern** in pds:ASCII_Date_YMD, **pattern** in pds:ASCII_DOI, **pattern** in pds:ASCII_Identifier, **pattern** in pds:ASCII_LID, **pattern** in pds:ASCII_MD5_Checksum, **pattern** in pds:ASCII_Numeric_Base16, **pattern** in pds:ASCII_Numeric_Base2, **pattern** in pds:ASCII_Numeric_Base8, **pattern** in pds:ASCII_Time, **pattern** in pds:ASCII_VID, **pattern** in pds:Character_Data_Type, **pattern** in pds:Float3Vector
- **pds4_merge_flag** - **pds4_merge_flag** in ops:Ingest_DD
- **phone_book_flag** - **phone_book_flag** in pds:PDS_Affiliate
- **postal_address_text** - **postal_address_text** in pds:PDS_Affiliate
- **preferred_flag** - **preferred_flag** in ops:Terminological_Entry
- **primary_body_name** - **primary_body_name** in ops:Target_PDS3
- **producer_full_name** - **producer_full_name** in ops:Data_Set_PDS3
- **product_class** - **product_class** in pds:Identification_Area
- **programmers_manual_identifier** - **programmers_manual_identifier** in ops:Software_Desc
- **program_notes_identifier** - **program_notes_identifier** in ops:Software_Binary, **program_notes_identifier** in ops:Software_Source
- **publication_date** - **publication_date** in ops:Volume_PDS3, **publication_date** in pds:Document_Description
- **publication_year** - **publication_year** in pds:Citation_Information
- **purpose** - **purpose** in pds:Primary_Result_Description
- **quaternion_components** - **quaternion_components** in pds:Quaternion
- **received_packets** - **received_packets** in img:Telemetry_Parameters
- **records** - **records** in pds:File, **records** in pds:Table_Base, **records** in pds:Table_Delimited
- **record_delimiter** - **record_delimiter** in pds:Table_Character, **record_delimiter** in pds:Table_Delimited
- **record_length** - **record_length** in pds:Record_Binary, **record_length** in pds:Record_Character
- **reduction_level** - **reduction_level** in pds:Primary_Result_Description
- **reference_text** - **reference_text** in pds:External_Reference
- **reference_type** - **reference_type** in ops:DD_Association, **reference_type** in ops:Delivery_Manifest, **reference_type** in pds:Bundle_Member_Entry, **reference_type** in pds:Internal_Reference, **reference_type** in pds:Inventory, **reference_type** in pds:Zipped_Member_Entry
- **registered_by** - **registered_by** in ops:DD_Attribute_Full
- **registration_authority_id** - **registration_authority_id** in ops:DD_Attribute_Full

- **registration_date** - **registration_date** in pds:PDS_Affiliate, **registration_date** in pds:PDS_Guest
- **repetitions** - **repetitions** in pds:Group_Field_Binary, **repetitions** in pds:Group_Field_Character, **repetitions** in pds:Group_Field_Delimited
- **revision_id** - **revision_id** in pds:Document_Description
- **sample_display_direction** - **sample_display_direction** in pds:Display_2D_Image
- **sampling_parameter_interval** - **sampling_parameter_interval** in pds:Uniformly_Sampled
- **sampling_parameter_name** - **sampling_parameter_name** in pds:Uniformly_Sampled
- **sampling_parameter_scale** - **sampling_parameter_scale** in pds:Uniformly_Sampled
- **sampling_parameter_unit** - **sampling_parameter_unit** in pds:Uniformly_Sampled
- **saturated_constant** - **saturated_constant** in pds:Special_Constants
- **scaling_factor** - **scaling_factor** in pds:Element_Array, **scaling_factor** in pds:Field_Binary, **scaling_factor** in pds:Field_Bit, **scaling_factor** in pds:Field_Character, **scaling_factor** in pds:Field_Delimited
- **sequence_number** - **sequence_number** in pds:Axis_Array, **sequence_number** in pds:Quaternion_Component, **sequence_number** in pds:Vector_Component
- **serial_number** - **serial_number** in pds:Instrument, **serial_number** in pds:Instrument_Host
- **software_dialect** - **software_dialect** in ops:Software_Source
- **software_id** - **software_id** in ops:Software_Desc
- **software_language** - **software_language** in ops:Software_Source
- **software_type** - **software_type** in ops:Software_Desc
- **solar_longitude** - **solar_longitude** in pds:Time_Coordinates
- **sort_name** - **sort_name** in pds:PDS_Affiliate, **sort_name** in pds:PDS_Guest
- **specified_unit_id** - **specified_unit_id** in ops:DD_Value_Domain, **specified_unit_id** in pds:UnitOfMeasure, **specified_unit_id** in pds:UnitOfMeasure_AmountOfSubstance, **specified_unit_id** in pds:UnitOfMeasure_Angle, **specified_unit_id** in pds:UnitOfMeasure_AngularVelocity, **specified_unit_id** in pds:UnitOfMeasure_Area, **specified_unit_id** in pds:UnitOfMeasure_FrameRate, **specified_unit_id** in pds:UnitOfMeasure_Frequency, **specified_unit_id** in pds:UnitOfMeasure_Length, **specified_unit_id** in pds:UnitOfMeasure_MapScale, **specified_unit_id** in pds:UnitOfMeasure_Mass, **specified_unit_id** in pds:UnitOfMeasure_Misc, **specified_unit_id** in pds:UnitOfMeasure_None, **specified_unit_id** in pds:UnitOfMeasure_OpticalPathLength, **specified_unit_id** in pds:UnitOfMeasure_Pressure, **specified_unit_id** in pds:UnitOfMeasure_Radiance, **specified_unit_id** in pds:UnitOfMeasure_Rates, **specified_unit_id** in pds:UnitOfMeasure_SolidAngle, **specified_unit_id** in pds:UnitOfMeasure_Storage, **specified_unit_id** in pds:UnitOfMeasure_Temperature, **specified_unit_id** in pds:UnitOfMeasure_Time, **specified_unit_id** in pds:UnitOfMeasure_Velocity, **specified_unit_id** in pds:UnitOfMeasure_Voltage, **specified_unit_id** in pds:UnitOfMeasure_Volume
- **spice_file_name** - **spice_file_name** in img:Telemetry_Parameters
- **standard_deviation** - **standard_deviation** in pds:Field_Statistics, **standard_deviation** in pds:Object_Statistics
- **starting_point_identifier** - **starting_point_identifier** in pds:Document_Format
- **start_bit** - **start_bit** in pds:Field_Bit
- **start_date** - **start_date** in pds:Investigation
- **start_date_time** - **start_date_time** in ops:Data_Set_PDS3, **start_date_time** in pds:Time_Coordinates
- **steward_id** - **steward_id** in ops:DD_Attribute, **steward_id** in ops:DD_Attribute_Full, **steward_id** in ops:DD_Class
- **stop_bit** - **stop_bit** in pds:Field_Bit
- **stop_date** - **stop_date** in pds:Investigation
- **stop_date_time** - **stop_date_time** in ops:Data_Set_PDS3, **stop_date_time** in pds:Time_Coordinates
- **submitter_id** - **submitter_id** in ops:DD_Attribute, **submitter_id** in ops:DD_Attribute_Full, **submitter_id** in ops:DD_Class
- **subscription_id** - **subscription_id** in ops:Subscriber_PDS3
- **supported_architecture** - **supported_architecture** in ops:Software_Binary, **supported_architecture** in ops:Software_Source
- **supported_environment** - **supported_environment** in ops:Software_Script
- **supported_os** - **supported_os** in ops:Software_Binary, **supported_os** in ops:Software_Source
- **sw_format_type** - **sw_format_type** in ops:Software_Binary, **sw_format_type** in ops:Software_Source
- **system_requirements** - **system_requirements** in ops:Software_Binary, **system_requirements** in ops:Software_Script, **system_requirements** in ops:Software_Source
- **target_desc** - **target_desc** in ops:Target_PDS3
- **target_name** - **target_name** in ops:Target_PDS3
- **target_type** - **target_type** in ops:Target_PDS3
- **team_name** - **team_name** in pds:PDS_Affiliate
- **telemetry_format_id** - **telemetry_format_id** in img:Telemetry_Parameters
- **telemetry_provider_id** - **telemetry_provider_id** in img:Telemetry_Parameters
- **telemetry_source_name** - **telemetry_source_name** in img:Telemetry_Parameters
- **telemetry_source_type** - **telemetry_source_type** in img:Telemetry_Parameters
- **telephone_number** - **telephone_number** in pds:PDS_Affiliate
- **title** - **title** in pds:Identification_Area
- **type** - **type** in pds:Detector, **type** in pds:Instrument, **type** in pds:Instrument_Host, **type** in pds:Investigation, **type** in pds:Investigation_Area, **type** in pds:Primary_Result_Description, **type** in pds:Quaternion, **type** in pds:Resource, **type** in pds:Target, **type** in pds:Target_Identification, **type** in pds:UnitOfMeasure, **type** in pds:UnitOfMeasure_AmountOfSubstance, **type** in pds:UnitOfMeasure_Angle, **type** in pds:UnitOfMeasure_AngularVelocity, **type** in pds:UnitOfMeasure_Area, **type** in pds:UnitOfMeasure_FrameRate, **type** in pds:UnitOfMeasure_Frequency, **type** in pds:UnitOfMeasure_Length, **type** in pds:UnitOfMeasure_MapScale, **type** in pds:UnitOfMeasure_Mass, **type** in pds:UnitOfMeasure_Misc, **type** in pds:UnitOfMeasure_None, **type** in pds:UnitOfMeasure_OpticalPathLength, **type** in pds:UnitOfMeasure_Pressure, **type** in pds:UnitOfMeasure_Radiance, **type** in pds:UnitOfMeasure_Rates, **type** in pds:UnitOfMeasure_SolidAngle, **type** in pds:UnitOfMeasure_Storage, **type** in pds:UnitOfMeasure_Temperature, **type** in pds:UnitOfMeasure_Time, **type** in pds:UnitOfMeasure_Velocity, **type** in pds:UnitOfMeasure_Voltage, **type** in pds:UnitOfMeasure_Volume, **type** in pds:Vector
- **unit** - **unit** in pds:Axis_Array, **unit** in pds:Element_Array, **unit** in pds:Field_Binary, **unit** in pds:Field_Bit, **unit** in pds:Field_Character, **unit** in pds:Field_Delimited, **unit** in pds:Quaternion_Component, **unit** in pds:Vector_Component

- **unit_id** - **unit_id** in pds:UnitOfMeasure, **unit_id** in pds:UnitOfMeasure_AmountOfSubstance, **unit_id** in pds:UnitOfMeasure_Angle, **unit_id** in pds:UnitOfMeasure_AngularVelocity, **unit_id** in pds:UnitOfMeasure_Area, **unit_id** in pds:UnitOfMeasure_FrameRate, **unit_id** in pds:UnitOfMeasure_Frequency, **unit_id** in pds:UnitOfMeasure_Length, **unit_id** in pds:UnitOfMeasure_MapScale, **unit_id** in pds:UnitOfMeasure_Mass, **unit_id** in pds:UnitOfMeasure_Misc, **unit_id** in pds:UnitOfMeasure_None, **unit_id** in pds:UnitOfMeasure_OpticalPathLength, **unit_id** in pds:UnitOfMeasure_Pressure, **unit_id** in pds:UnitOfMeasure_Radiance, **unit_id** in pds:UnitOfMeasure_Rates, **unit_id** in pds:UnitOfMeasure_SolidAngle, **unit_id** in pds:UnitOfMeasure_Storage, **unit_id** in pds:UnitOfMeasure_Temperature, **unit_id** in pds:UnitOfMeasure_Time, **unit_id** in pds:UnitOfMeasure_Velocity, **unit_id** in pds:UnitOfMeasure_Voltage, **unit_id** in pds:UnitOfMeasure_Volume
- **unit_of_measure_type** - **unit_of_measure_type** in ops:DD_Value_Domain
- **unknown_constant** - **unknown_constant** in pds:Special_Constants
- **url** - **url** in ops:External_Reference_Extended, **url** in pds:Resource
- **users_manual_identifier** - **users_manual_identifier** in ops:Software_Desc
- **value** - **value** in ops:DD_Permissible_Value, **value** in pds:Quaternion_Component, **value** in pds:Vector_Component
- **value_begin_date** - **value_begin_date** in ops:DD_Permissible_Value
- **value_data_type** - **value_data_type** in ops:DD_Value_Domain
- **value_end_date** - **value_end_date** in ops:DD_Permissible_Value
- **value_meaning** - **value_meaning** in ops:DD_Permissible_Value
- **value_offset** - **value_offset** in pds:Element_Array, **value_offset** in pds:Field_Binary, **value_offset** in pds:Field_Bit, **value_offset** in pds:Field_Character, **value_offset** in pds:Field_Delimited
- **vector_components** - **vector_components** in pds:Vector
- **version_id** - **version_id** in ops:DD_Attribute, **version_id** in ops:DD_Attribute_Full, **version_id** in ops:DD_Class, **version_id** in ops:Software_Desc, **version_id** in pds:Identification_Area, **version_id** in pds:Instrument, **version_id** in pds:Instrument_Host, **version_id** in pds:Modification_Detail
- **volumes** - **volumes** in ops:Volume_Set_PDS3
- **volume_de_fullname** - **volume_de_fullname** in ops:Volume_PDS3
- **volume_format** - **volume_format** in ops:Volume_PDS3
- **volume_id** - **volume_id** in ops:Volume_PDS3
- **volume_name** - **volume_name** in ops:Volume_PDS3
- **volume_series_name** - **volume_series_name** in ops:Volume_Set_PDS3
- **volume_set_id** - **volume_set_id** in ops:Volume_PDS3, **volume_set_id** in ops:Volume_Set_PDS3
- **volume_set_name** - **volume_set_name** in ops:Volume_Set_PDS3
- **volume_size** - **volume_size** in ops:Volume_PDS3
- **volume_version_id** - **volume_version_id** in ops:Volume_PDS3
- **xml_schema_base_type** - **xml_schema_base_type** in pds:ASCII_AnyURI, **xml_schema_base_type** in pds:ASCII_Date_DOY, **xml_schema_base_type** in pds:ASCII_Date_Time, **xml_schema_base_type** in pds:ASCII_Date_Time_DOY, **xml_schema_base_type** in pds:ASCII_Date_Time_UTC, **xml_schema_base_type** in pds:ASCII_Date_Time_YMD, **xml_schema_base_type** in pds:ASCII_Date_YMD, **xml_schema_base_type** in pds:ASCII_Directory_Path_Name, **xml_schema_base_type** in pds:ASCII_DOI, **xml_schema_base_type** in pds:ASCII_File_Name, **xml_schema_base_type** in pds:ASCII_File_Specification_Name, **xml_schema_base_type** in pds:ASCII_Identifier, **xml_schema_base_type** in pds:ASCII_Integer, **xml_schema_base_type** in pds:ASCII_LID, **xml_schema_base_type** in pds:ASCII_LIDVID, **xml_schema_base_type** in pds:ASCII_MD5_Checksum, **xml_schema_base_type** in pds:ASCII_NonNegative_Integer, **xml_schema_base_type** in pds:ASCII_Real, **xml_schema_base_type** in pds:ASCII_Short_String_Collapsed, **xml_schema_base_type** in pds:ASCII_Short_String_Preserved, **xml_schema_base_type** in pds:ASCII_Text_Preserved, **xml_schema_base_type** in pds:ASCII_Time, **xml_schema_base_type** in pds:ASCII_VID, **xml_schema_base_type** in pds:UTF8_Short_String_Collapsed, **xml_schema_base_type** in pds:UTF8_Short_String_Preserved, **xml_schema_base_type** in pds:UTF8_Text_Preserved, **xml_schema_base_type** in pds:ASCII_Boolean, **xml_schema_base_type** in pds:ASCII_Date, **xml_schema_base_type** in pds:ASCII_Numeric_Base16, **xml_schema_base_type** in pds:ASCII_Numeric_Base2, **xml_schema_base_type** in pds:ASCII_Numeric_Base8, **xml_schema_base_type** in pds:ASCII_Text_Collapsed, **xml_schema_base_type** in pds:Character_Data_Type, **xml_schema_base_type** in pds:Float3Vector