

Product_External Usage Guide

Introduction

The PDS4 Information Model has been extended to allow for the labeling and storage of products which are not suitable for being archived in the PDS. The various reasons for which products might not be suitable are outlined in the document below. Products which fit this category should be labeled as Product_External with External denoting the fact that these will lie outside the PDS Archive.

The use of Product_External is at the discretion of the curating node or organization. Under no circumstances may Product_External be used simply to avoid PDS4 archiving requirements.

Product_External Class

The Product_External class as an extension of the PDS4 Information Model would closely resemble the Product_Browse class and follow this outline:

```
Product_External
  Identification_Area
    logical_identifier
    version_id
    title
    information_model_version
    product_class
  Citation_Area
  Modification_Area
    description
  [Context_Area] optional
    target
    Primary_Result_Summary
  [Discipline_Area] optional
  [Mission_Area] optional
  Reference_List
    Internal_Reference [0..*]
    External_Reference [0..*]
  File_Area_External
    File
      file_name
```

```
local_identifier  
creation_date_time  
[file_size] optional+  
[file_URL] optional+  
Encoded_External  
encoding_standard_id  
description
```

where one of file_size and file_URL must be present but not necessarily both.

Aggregate Products

If using bundle and/or collection aggregate products, the attributes <bundle_type> and <collection_type> must have the value External. Similarly, it is recommended that the file names be formed as bundle-external_bundle-id.xml and collection-external_bundle-id_collection-id.xml.

Logical Identifiers

Formation of logical_identifiers (LIDs) for Product_External will be up to the curating agency with the following caveat: PDS4 logical identifiers require a prefix, for example, "urn:nasa:pds:". The approved prefixes for PDS archival products are registered in the PDS Namespace Registry. However the prefixes for non-archival Product_External products will not be registered there. The prefixes for these products must begin with "urn:" but they must not duplicate any registered prefix. As an example, a LID for an atmospheric model product could be "urn:nasa:atm-ama:mars-gcm:model:pressure_map".

The PDS Namespace Registry can be found at

<https://pds.nasa.gov/datastandards/dictionaries/index-1.19.0.0.shtml#namespaces>

Allowable Uses for the Product_External Class

Products that suitable for use with Product_External and that are not suitable for inclusion in the PDS Archive include (but are not limited to) the following:

- Simulations and/or models of planetary atmospheres.
- Simulations and/or models of planetary magnetospheres/ionospheres/plasma fields.
- Highly derived GIS type mosaic products.
- Derived data products targeting modern user access methods (e.g., optimized for cloud streaming access).

The reasons behind not archiving these products include 1) they are easily superseded as knowledge improves, 2) they are highly processed (such as tiled and/or compressed), 3) size and/or format of the product makes storage difficult, 4) the data format is not PDS4-compliant.

Allowable Encoding Standards

The list for allowed encoding_standard_id values is in development. This list will consist of recommended values but will not be an enumerated list.

Preliminary List

NetCDF 4.9.0

HDF5 1.15.0

Cloud Optimized GeoTIFF

VTK 4.0