Filling out the Expanded Geometry Class

The *Expanded_Geometry_Class* is used to provide a direct link between an observational data object, like an image or spectral cube, and an internal data object or external data product that provides detailed geometric values at a finer level of detail than the summary values or ranges that are (and should still be) included elsewhere in the label.

For example, if you have an image cube in which each plane has different surface intercept coordinates, you can use this class to reference a table (or table product) that provides image-by-image surface angle and intercept points. For highly complex cases, you can reference multiple data objects, external products, or both.

> **Note:** *Do **not** use this class to reference SPICE kernel files used to calculate the geometry. Use the* <SPICE_Kernel_Files> *class for that.*

<pds:Local_Internal_Reference>

OPTIONAL

This class associates a data object elsewhere in this label containing geometry information to this *<Geometry>* class.

Note that this class and its elements are in the PDS4 core namespace, ***not*** the geometry dictionary namespace. You will need to provide the PDS4 core namespace reference when using the elements. There are two ways to do this: by using a pre-defined namespace prefix, or by specifying the PDS4 core namespace URI via an *xmlns* XML-attribute in each of the tags. For this page, we're using the namespace abbreviation as a prefix on the tag.

If that all sounds like gibberish to you, you may want to check the Namespace Reference topic in Schema Referencing in PDS4 Labels.

<pds:comment>

OPTIONAL

While technically optional, if you have cause to use the *Expanded_Geometry* class, you should explain at least briefly what is in the target object, and/or why geometry is being referenced here instead of (or preferably in addition to) being included in searchable attributes elsewhere.

<pds:local_identifier_reference>

REQUIRED

The value of this attribute must correspond exactly to the value of a *<local_identifier>* attribute of a data object elsewhere in the same label. This data object must be the object containing the detailed geometry information.

<pds:local_reference_type>

REQUIRED

This attribute must have the value **to_expanded_geometry**.

<pds:Internal_Reference>

OPTIONAL

This class associates a data product elsewhere in the PDS archives containing geometry information to this *<Geometry>* class.

As with *<pds:Local_Internal_Reference>*, this class and its attributes are in the PDS4 core namespace, indicated here by the *pds:* prefix.

<pds:lidvid_reference> or <pds:lid_reference>

REQUIRED

This is the logical identifier (LID) or logical identifier with version number (LIDVID) for the product containing the detailed geometry, one of which is required. In general, version numbers are significant when dealing with geometry, so this class will usually contain a *<pds:lidvid_reference>* attribute.

<pds:reference_type>

REQUIRED

This must have a value of **geometry_to_expanded_geometry**.

<pds:comment>

OPTIONAL

While technically optional, if you have cause to use the *Expanded_Geometry* class, you should explain at least briefly what is in the target product, and/or why geometry is being referenced here instead of (or preferably in addition to) being included in searchable attributes elsewhere.