Appendix H. PDS Data Group Definitions

This section provides an alphabetical reference of approved PDS data group definitions used in labeling data objects. The definitions include descriptions, lists of required and optional keywords, and one or more examples of specific groups. For a more detailed discussion on data groups, see the *Data Objects / Groups* chapter in this document.

Data group definitions are refined and augmented from time to time, as user community needs arise, so object definitions for products designed under older versions of the Standards may differ significantly. To check the current state of any object or group definition, consult a PDS data engineer or either of these URLs:

PDS Catalog Search: **http://pdsproto.jpl.nasa.gov/onlinecatalog/top.cfm**

Data Dictionary Search: **http://pdsproto.jpl.nasa.gov/ddcolstdval/newdd/top.cfm**

The examples provided in this Appendix are based on both existing and planned PDS archive products, modified to reflect the current version of the PDS Standards. Additional examples may be obtained by contacting a PDS Data Engineer.

NOTE: Any keywords in the *Planetary Science Data Dictionary* may also be included in a specific data group definition.

Chapter Contents

H.1 BAND_BIN

The BAND_BIN group provides a mechanism for grouping keywords that describe the properties of each "bin" along a spectral axis. It is primarily designed for use within the SPECTRAL_QUBE object.

See Appendix A.25 for a detailed description of the SPECTRAL_QUBE.

H.1.1 Required Keywords

1. BANDS
2. BAND_BIN_CENTER
3. BAND_BIN_UNIT
4. BAND_BIN_WIDTH

H.1.2 Optional Keywords

1. BAND_BIN_STANDARD_DEVIATION
2. BAND_BIN_DETECTOR
3. BAND_BIN_GRATING_POSITION
4. BAND_BIN_ORIGINAL_BAND
5. BAND_BIN_BAND_NUMBER
6. BAND_BIN_FILTER_NUMBER
7. BAND_BIN_BASE
8. BAND_BIN_MULTIPLIER

H.1.3 Example

The following label fragment shows the BAND_BIN group:

```
GROUP                       = BAND_BIN
  BANDS                     = 3
  BAND_BIN_UNIT             = MICROMETER
  BAND_BIN_FILTER_NUMBER    = (1, 2, 3)
  BAND_BIN_BAND_NUMBER      = (2, 3, 4)
  BAND_BIN_CENTER           = (6.78, 9.35, 14.88)
  BAND_BIN_WIDTH            = (1.01, 1.20, 0.87)
  BAND_BIN_BASE             = (0.0, 0.0, 0.0)
  BAND_BIN_MULTIPLIER       = (1.0, 1.0, 1.0)
END_OBJECT                  = BAND_BIN
```

H.2 BAND_SUFFIX

The BAND_SUFFIX group provides a mechanism for grouping keywords that describe the properties of each BAND Suffix plane, or BACKPLANE, of a SPECTRAL_QUBE.

See Appendix A.25 for a detailed description of the SPECTRAL_QUBE.

H.2.1 Required Keywords

1. SUFFIX_NAME
2. SUFFIX_ITEM_BYTES
3. SUFFIX_ITEM_TYPE

H.2.2 Optional Keywords

1. SUFFIX_BASE
2. SUFFIX_MULTIPLIER
3. SUFFIX_VALID_MINIMUM
4. SUFFIX_NULL
5. SUFFIX_LOW_REPR_SAT
6. SUFFIX_LOW_INSTR_SAT
7. SUFFIX_HIGH_REPR_SAT
8. SUFFIX_HIGH_INSTR_SAT
9. SUFFIX_UNIT
10. BIT_MASK

H.2.3 Example

The following label fragment shows the BAND_SUFFIX group:

```
GROUP                       = BAND_SUFFIX
  SUFFIX_NAME               = (LATITUDE, LONGITUDE)
  SUFFIX_UNIT               = (DEGREE, DEGREE)
  SUFFIX_ITEM_BYTES         = (4, 4)
  SUFFIX_ITEM_TYPE          = (IEEE_REAL, IEEE_REAL)
  SUFFIX_BASE               = (0.000000, 0.000000)
  SUFFIX_MULTIPLIER         = (1.000000, 1.000000)
END_OBJECT                  = BAND_SUFFIX
```

H.3 LINE_SUFFIX

The LINE_SUFFIX group provides a mechanism for grouping keywords that describe the properties of each LINE Suffix plane, or BOTTOMPLANE, of a SPECTRAL_QUBE.

See Appendix A.25 for a detailed description of the SPECTRAL_QUBE.

H.3.1 Required Keywords

1. SUFFIX_NAME
2. SUFFIX_ITEM_BYTES
3. SUFFIX_ITEM_TYPE

H.3.2 Optional Keywords

1. SUFFIX_BASE
2. SUFFIX_MULTIPLIER
3. SUFFIX_VALID_MINIMUM
4. SUFFIX_NULL
5. SUFFIX_LOW_REPR_SAT
6. SUFFIX_LOW_INSTR_SAT
7. SUFFIX_HIGH_REPR_SAT
8. SUFFIX_HIGH_INSTR_SAT
9. SUFFIX_UNIT
10. BIT_MASK

H.3.3 Example

The following label fragment shows the LINE_SUFFIX group:

```
GROUP                       = LINE_SUFFIX
  SUFFIX_NAME               = VERTICAL_DESTRIPE
  SUFFIX_ITEM_BYTES         = 4
  SUFFIX_ITEM_TYPE          = IEEE_REAL
  SUFFIX_BASE               = 0.000000
  SUFFIX_MULTIPLIER         = 1.000000
  SUFFIX_VALID_MINIMUM      = 16#FFEFFFFF#
  SUFFIX_LOW_REPR_SAT       = 16#FFFEFFFF#
  SUFFIX_LOW_INSTR_SAT      = 16#FFFDFFFF#
  SUFFIX_HIGH_REPR_SAT      = 16#FFFBFFFF#
  SUFFIX_HIGH_INSTR_SAT     = 16#FFFCFFFF#
END_OBJECT                  = LINE_SUFFIX
```

H.4 PARAMETERS

The PARAMETERS group provides a mechanism for grouping multiple sets of related parameters within a data product label. An alias, PARMS, exists for the PARAMETERS group.

See Chapter 13 of the Standards Reference for a complete description of GROUPs.

H.4.1 Required Keywords

None

H.4.2 Optional Keywords

1. psdd

H.4.3 Example

The following label fragment shows the PARAMETERS group:

```
GROUP                       = COMMANDED_INST_PARAMETERS
 SHUTTER_MODE               = "BOTSIM"
 FILTER_NUMBER              = 5
 FILTER_NAME                = "L570-R570"
 EXPOSURE_DURATION          = 1.05
END_OBJECT                  = COMMANDED_INST_PARAMETERS

GROUP                       = TELEMETRY_INST_PARAMETERS
 SHUTTER_MODE               = "AUTO"
 FILTER_NUMBER              = 0
 FILTER_NAME                = "CLEAR"
 EXPOSURE_DURATION          = 0.773
END_OBJECT                  = TELEMETRY_INST_PARAMETERS

GROUP                       = TELEMETRY_PARMS
 SHUTTER_MODE               = "AUTO"
 FILTER_NUMBER              = 0
 FILTER_NAME                = "CLEAR"
 EXPOSURE_DURATION          = 0.773
END_OBJECT                  = TELEMETRY_PARMS
```

H.5 SAMPLE_SUFFIX

The SAMPLE_SUFFIX group provides a mechanism for grouping keywords that describe the properties of each SAMPLE Suffix plane, or SIDEPLANE, of a SPECTRAL_QUBE.

See Appendix A.25 for a detailed description of the SPECTRAL_QUBE.

H.5.1 Required Keywords

1. SUFFIX_NAME
2. SUFFIX_ITEM_BYTES
3. SUFFIX_ITEM_TYPE

H.5.2 Optional Keywords

1. SUFFIX_BASE
2. SUFFIX_MULTIPLIER
3. SUFFIX_VALID_MINIMUM
4. SUFFIX_NULL
5. SUFFIX_LOW_REPR_SAT
6. SUFFIX_LOW_INSTR_SAT
7. SUFFIX_HIGH_REPR_SAT
8. SUFFIX_HIGH_INSTR_SAT
9. SUFFIX_UNIT
10. BIT_MASK

H.5.3 Example

The following label fragment shows the SAMPLE_SUFFIX group:

```
GROUP                       = SAMPLE_SUFFIX
  SUFFIX_NAME               = HORIZONTAL_DESTRIPE
  SUFFIX_ITEM_BYTES         = 4
  SUFFIX_ITEM_TYPE          = IEEE_REAL
  SUFFIX_BASE               = 0.000000
  SUFFIX_MULTIPLIER         = 1.000000
  SUFFIX_VALID_MINIMUM      = 16#FFEFFFFF#
  SUFFIX_NULL               = 16#FFFFFFFF#
  SUFFIX_LOW_REPR_SAT       = 16#FFFEFFFF#
  SUFFIX_LOW_INSTR_SAT      = 16#FFFDFFFF#
  SUFFIX_HIGH_REPR_SAT      = 16#FFFBFFFF#
  SUFFIX_HIGH_INSTR_SAT     = 16#FFFCFFFF#
END_OBJECT                  = SAMPLE_SUFFIX
```

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