

Standards Change Request

Update LINE_ and SAMPLE_DISPLAY_DIRECTION

SCR3-1130.v2

Elizabeth Rye 5/29/08 1:07 PM

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Provenance:

Date: 2008-05-29

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Date: 2008-05-14

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Title: Update LINE_ and SAMPLE_DISPLAY_DIRECTION (SCR3-1130.v1)

Problem:

The two keywords LINE_DISPLAY_DIRECTION and SAMPLE_DISPLAY_DIRECTION provide the preferred orientation for data (primarily image data) to be displayed on a display device. While in theory* each keyword has a default value ("DOWN" and "RIGHT", respectively), they each have the full set of "DOWN", "LEFT", "RIGHT", and "UP" for standard values. Thus, it is possible to have mutually contradictory (non-orthogonal) values for these two keywords. This obviously presents a problem for display software.

Furthermore, if only one of these keywords is present in a label and it has a non-default value, any display software that uses the default value for the missing keyword may inadvertently introduce a conflict.

*While each keyword mentions a default value in the description field, neither actually has the KEYWORD_DEFAULT_VALUE attribute populated. Thus, even these default values are inaccessible to display software.

Current Urgency:

There is no particular urgency to fixing this problem.

Proposed Solution:

The Planetary Science Data Dictionary (PSDD) currently has no mechanism for enforcing dependencies between keywords. This SCR does not propose to fix this problem, which will have to be resolved under PDS4. Rather, this SCR proposes updates to the DESCRIPTION attributes of these two keywords [in the PSDD and updates to the Standards Reference](#) to make it clear that when one of these keywords is used in a product label, the other keyword must also be present and populated with an orthogonal value. For the moment, these restrictions will have to be enforced manually, with the option of hard coding them into display software.

Impact Assessment:

The impact from this SCR should be minimal, since it is simply encoding in text our current practices.

PDS Standards Reference – [minor changes as shown below under “Requested Changes”](#).

Archive Preparation Guide – no change

Proposer’s Archive Guide – no change

Planetary Science Data Dictionary – update the element definition objects for the two keywords LINE_DISPLAY_DIRECTION and SAMPLE_DISPLAY_DIRECTION

PDS tools – any updates to the tools are up to the discretion of the PDS EN Development Team

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Additional Information:

None.

Requested Changes:

The attached two element definition objects provide the necessary updates to the PSDD. All changes are highlighted in red.

[The following updates show the proposed changes to the Standards Reference:](#)

[On page A-65, change:](#)

“By default, IMAGE objects should be displayed so that the lines are drawn from left to right and top to bottom. Other organizations can be indicated by using the LINE_DISPLAY_DIRECTION and SAMPLE_DISPLAY_DIRECTION keywords. Figure A.2 illustrates band storage schemes and the related keyword values.”

to:

“By default, IMAGE objects should be displayed so that the samples are drawn from left to right and the lines from top to bottom. Other organizations can be indicated by using the LINE_DISPLAY_DIRECTION and SAMPLE_DISPLAY_DIRECTION keywords. Note that when using one of these keywords in a label, the other keyword is also required. The keywords must have orthogonal values.

Figure A.2 illustrates band storage schemes and the related keyword values.”

On pages A-98 and A-99, change:

<u>LINE_DISPLAY_DIRECTION</u>	<u>The preferred orientation of lines within an image for viewing on a display device. The default value is down, where lines are viewed top to bottom on the display.</u>	<u>DOWN, UP, LEFT, RIGHT.</u>	<u>NO</u>
<u>SAMPLE_DISPLAY_DIRECTION</u>	<u>The preferred orientation of samples within a line for viewing on a display device. The default is right, meaning samples are viewed from left to right on the display.</u>	<u>DOWN, UP, LEFT, RIGHT.</u>	<u>NO</u>

to:

<u>LINE_DISPLAY_DIRECTION</u>	<u>The preferred orientation of lines within an image for viewing on a display device. The default value is down, where lines are viewed top to bottom on the display.</u>	<u>DOWN, UP, LEFT, RIGHT. (Value must be orthogonal to value for SAMPLE_DISPLAY_DIRECTION.)</u>	<u>NO</u>
<u>SAMPLE_DISPLAY_DIRECTION</u>	<u>The preferred orientation of samples within a line for viewing on a display device. The default is right, meaning samples are viewed from left to right on the display.</u>	<u>DOWN, UP, LEFT, RIGHT. (Value must be orthogonal to value for LINE_DISPLAY_DIRECTION.)</u>	<u>NO</u>

```

PDS_VERSION_ID           = PDS3
LABEL_REVISION_NOTE     = "2008-05-14 PDS EN/EDR Updated
description and added default value."
OBJECT                   = ELEMENT_DEFINITION
  ELEMENT_NAME           = "line_display_direction"
  BL_NAME                 = "linedspdir"
  DESCRIPTION             = "

```

The line_display_direction element is the preferred orientation of lines within an image for viewing on a display device. The default value is down, meaning lines are viewed top to bottom on the display.

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.

Note: The image rotation elements such as TWIST_ANGLE, CELESTIAL_NORTH_CLOCK_ANGLE, and BODY_POLE_CLOCK_ANGLE are all defined under the assumption that the image is displayed in its preferred orientation."

```

GENERAL_DATA_TYPE       = "IDENTIFIER"
MAXIMUM                  = "N/A"
MINIMUM                  = "N/A"
MAXIMUM_LENGTH          = "6"
MINIMUM_LENGTH          = "N/A"
STANDARD_VALUE_TYPE     = "STATIC"
STANDARD_VALUE_SET_DESC = "

```

The preferred orientation of lines within an image for viewing on a display device. The default value is down, meaning lines are viewed top to bottom on the display."

```

KEYWORD_DEFAULT_VALUE   = "DOWN"
UNIT_ID                  = "none"
SOURCE_NAME              = "PDS CN/T. Brown"
FORMATION_RULE_DESC     = ""
OBJECT                   = ELEMENT_STANDARD_VALUE
  COLUMN_VALUE           = "DOWN"
  COLUMN_VALUE_TYPE     = "A"
  COLUMN_VALUE_NODE_ID  = "U"
  OUTPUT_FLAG           = "Y"
END_OBJECT               = ELEMENT_STANDARD_VALUE

OBJECT                   = ELEMENT_STANDARD_VALUE
  COLUMN_VALUE           = "LEFT"
  COLUMN_VALUE_TYPE     = "A"
  COLUMN_VALUE_NODE_ID  = "U"
  OUTPUT_FLAG           = "Y"
END_OBJECT               = ELEMENT_STANDARD_VALUE

OBJECT                   = ELEMENT_STANDARD_VALUE
  COLUMN_VALUE           = "RIGHT"
  COLUMN_VALUE_TYPE     = "A"
  COLUMN_VALUE_NODE_ID  = "U"
  OUTPUT_FLAG           = "Y"
END_OBJECT               = ELEMENT_STANDARD_VALUE

OBJECT                   = ELEMENT_STANDARD_VALUE

```

```
COLUMN_VALUE           = "UP"
COLUMN_VALUE_TYPE      = "A"
COLUMN_VALUE_NODE_ID   = "U"
OUTPUT_FLAG            = "Y"
END_OBJECT              = ELEMENT_STANDARD_VALUE

SYSTEM_CLASSIFICATION_ID = "COMMON"
GENERAL_CLASSIFICATION_TYPE = "IMAGING"
CHANGE_DATE             = "2008-05-14"
STATUS_TYPE             = "APPROVED"
STANDARD_VALUE_OUTPUT_FLAG = "Y"
TEXT_FLAG               = "N"
TERSE_NAME              = "linedspdir"
SQL_FORMAT              = "CHAR(6)"
BL_SQL_FORMAT           = "char(6)"
DISPLAY_FORMAT          = "JUSTLEFT"
AVAILABLE_VALUE_TYPE    = "L"
END_OBJECT              = ELEMENT_DEFINITION
END
```

```

PDS_VERSION_ID           = PDS3
LABEL_REVISION_NOTE     = "2008-05-14 PDS EN/EDR Updated
description and added default value."
OBJECT                   = ELEMENT_DEFINITION
ELEMENT_NAME             = "sample_display_direction"
BL_NAME                  = "sampsdir"
DESCRIPTION               = "

```

The SAMPLE_DISPLAY_DIRECTION element is the preferred orientation of samples within a line for viewing on a display device. The default is right, meaning samples are viewed from left to right on the display. **Note that if this keyword is present in a label, the LINE_DISPLAY_DIRECTION keyword must also be present and must contain a value orthogonal to the value selected for this keyword.**

Note: The image rotation elements such as TWIST_ANGLE, CELESTIAL_NORTH_CLOCK_ANGLE, and BODY_POLE_CLOCK_ANGLE are all defined under the assumption that the image is displayed in its preferred orientation."

```

GENERAL_DATA_TYPE       = "IDENTIFIER"
MAXIMUM                  = "N/A"
MINIMUM                  = "N/A"
MAXIMUM_LENGTH          = "6"
MINIMUM_LENGTH          = "N/A"
STANDARD_VALUE_TYPE     = "STATIC"
STANDARD_VALUE_SET_DESC = "

```

The preferred orientation of samples within a line for viewing on a display device. The default is right, meaning samples are viewed from left to right on the display."

```

KEYWORD_DEFAULT_VALUE   = "RIGHT"
UNIT_ID                  = "none"
SOURCE_NAME              = "PDS CN/T. Brown"
FORMATION_RULE_DESC      = ""
OBJECT                   = ELEMENT_STANDARD_VALUE
  COLUMN_VALUE           = "DOWN"
  COLUMN_VALUE_TYPE      = "A"
  COLUMN_VALUE_NODE_ID   = "U"
  OUTPUT_FLAG            = "Y"
END_OBJECT               = ELEMENT_STANDARD_VALUE

OBJECT                   = ELEMENT_STANDARD_VALUE
  COLUMN_VALUE           = "LEFT"
  COLUMN_VALUE_TYPE      = "A"
  COLUMN_VALUE_NODE_ID   = "U"
  OUTPUT_FLAG            = "Y"
END_OBJECT               = ELEMENT_STANDARD_VALUE

OBJECT                   = ELEMENT_STANDARD_VALUE
  COLUMN_VALUE           = "RIGHT"
  COLUMN_VALUE_TYPE      = "A"
  COLUMN_VALUE_NODE_ID   = "U"
  OUTPUT_FLAG            = "Y"
END_OBJECT               = ELEMENT_STANDARD_VALUE

OBJECT                   = ELEMENT_STANDARD_VALUE

```

```
COLUMN_VALUE           = "UP"
COLUMN_VALUE_TYPE      = "A"
COLUMN_VALUE_NODE_ID   = "U"
OUTPUT_FLAG            = "Y"
END_OBJECT              = ELEMENT_STANDARD_VALUE

SYSTEM_CLASSIFICATION_ID = "COMMON"
GENERAL_CLASSIFICATION_TYPE = "IMAGING"
CHANGE_DATE             = "2008-05-14"
STATUS_TYPE             = "APPROVED"
STANDARD_VALUE_OUTPUT_FLAG = "Y"
TEXT_FLAG               = "N"
TERSE_NAME              = "sampsdir"
SQL_FORMAT               = "CHAR(6)"
BL_SQL_FORMAT           = "char(6)"
DISPLAY_FORMAT          = "JUSTLEFT"
AVAILABLE_VALUE_TYPE    = "L"
END_OBJECT              = ELEMENT_DEFINITION
END
```