GSFC JPSS CMO
October 3, 2014
Released

Effective Date: October 02, 2014
Block/Revision 0124A

Joint Polar Satellite System (JPSS) Ground Project
Code 474
474-00001-05-B0124

Joint Polar Satellite System (JPSS) Common Data Format Control Book – External (CDFCB-X) Volume V – Metadata Formats

For Public Release

The information provided herein does not contain technical data as defined in the International Traffic in Arms Regulations (ITAR) 22 CFC 120.10. This document has been approved For Public Release to the NOAA Comprehensive Large Array-data Stewardship System (CLASS).

Block 1.2.4

National Aeronautics and Space Administration

Goddard Space Flight Center
Greenbelt, Maryland

Joint Polar Satellite System (JPSS)
Common Data Format Control Book – External
Volume V - Metadata

JPSS Electronic Signature Page

Prepared By:

Joe Stevens
Missions Systems Engineer
Deputy for Integration Joint Polar Satellite System Ground Project
(Electronic Approvals available online at https://jpssmis.gsfc.nasa.gov/mainmenu_dsp.cfm)

Approved By:

Rob Morgenstern
JPSS Ground Project Mission Systems Engineering Manager
(Electronic Approvals available online at https://jpssmis.gsfc.nasa.gov/mainmenu_dsp.cfm)

Goddard Space Flight Center
Greenbelt, Maryland

Preface

This document is under JPSS Ground ERB configuration control. Once this document is approved, JPSS approved changes are handled in accordance with Class I and Class II change control requirements as described in the JPSS Configuration Management Procedures, and changes to this document shall be made by complete revision.

Any questions should be addressed to:

JPSS Configuration Management Office
NASA/GSFC
Code 474
Greenbelt, MD 20771

Change History Log

Revision	Effective Date	Description of Changes (Reference the CCR & CCB/ERB Approval Date; for first Block Version Release, identify origin of document source)	Sections Affected
0124-	Dec 04, 2013	This version incorporates Rev C of 474-00001-05-B0123, dated November 07, 2013, to create the baseline for Block 1.2.4, Rev-. This was approved (out of board) by the JPSS Ground ERB via 474-CCR-13-1281 on the effective date shown.	All
0124-1	Jul 24, 2014	This version incorporates 474-CCR-14-1854 (ECR-CGS-0372). This was approved by the JPSS Ground ERB on the effective date shown.	Table 4.4-4
0124A	Oct 02, 2014	This version incorporates 0124-1 and 474-CCR-14-1988. This was approved by the JPSS Ground ERB on the effective date shown.	All

Northrop Grumman Space & Mission Systems Corp.
Space Technology
One Space Park
Redondo Beach, CA 90278

Engineering & Manufacturing Development (EMD) Phase
Acquisition & Operations Contract

CAGE NO. 11982

NPOESS Common Data Format Control Book – External Volume V – Metadata

Document Date: 12/09/2009

Document Number: D34862-05
Revision: F

CDRL A014

PREPARED BY: _____
Ron Andrews, SE&I IPT

ELECTRONIC APPROVAL SIGNATURES:

_____
Clark Snodgrass, SEITO Director

_____
Fabrizio Pela, SE&I IPT Lead

_____
Bill Sullivan, Ground Segments IPT Lead

_____
Mary Ann Chory, Space Segment IPT Lead

_____
Ben James, Operations and Support IPT Lead

_____
David Vandervoet, NPOESS Program Manager

Prepared by
Northrop Grumman Space Technology
One Space Park
Redondo Beach, CA 90278

Under
Contract No. F04701-02-C-0502

Prepared for
Department of the Air Force
NPOESS Integrated Program Office
C/O SMC/CIK
2420 Vela Way, Suite 1467-A8
Los Angeles AFB, CA 90245-4659

This document has been identified per the NPOESS Common Data Format Control Book – External Volume 5 Metadata, 474-00001-05, Appendix B as a document to be provided to the NOAA Comprehensive Large Array-data Stewardship System (CLASS) via the delivery of NPOESS Document Release Packages to CLASS.

Northrop Grumman Space & Mission Systems Corp.
Space Technology
One Space Park
Redondo Beach, CA 90278

NORTHROP GRUMMAN
Raytheon

Revision/Change Record

For Document No. D34862-05

Revision	Document Date	Revision/Change Description	Pages Affected
---	02/24/2006	Incorporation of the following ECRs: • D34659 CIS ICD ECR 216C – Initial "Draft" Release (CIS ICD), • D31400-10 SARSAT System OPSCON SYS-020-060 ECR 229B – Rev A (SARSAT System OPSCON), • D34862-01 CDFCB-X Vol. I ECR 445B - Rev A • D34862-04-01 CDFCB-X Vol. IV Parts 1 – 4 ECR 446C • ECR 462C – NPOESS Glossary – Changes in Ancillary Data and RDR terminology • D34862-03 CDFCB-X Vol. III ECR 475A – Initial Release • D34862-05 CDFCB-X Vol. V ECR 476B – Initial Release This version of the document is applicable to IDPS Build 1.4	All
A	08/11/2006	Incorporation of the following ECRs: • D34862-05 CDFCB-X Vol. V ECR 503A – Rev A, This revision contains updates to all sections based on the metadata: • XML User Block and HDF5 Metadata classifications • Product Profile migration to the CDFCB-X Volume I for overview of Product Profiles • XML Schema and DTD for the Product Profiles • Examples at the end of the volume • Product Profile XML Style Sheet used for the rendering of the Product Profiles in the CDFCB-X • Traceability	All

Northrop Grumman Space & Mission Systems Corp.
Space Technology
One Space Park
Redondo Beach, CA 90278

NORTHROP GRUMMAN

Raytheon

Revision/Change Record

For Document No. D34862-05

Revision	Document Date	Revision/Change Description	Pages Affected
B	08/27/2007	Incorporation of the following DCOs and ECRs: • ECR 515B – Restructure Baseline – Demanifested and GFE Sensor Performance • ECR 534D – NPOESS Data Products – Revised based on Demanifested Sensors • DCO B1 D34862-05 CDFCB-X Vol.V ECR 549C – IDPS Build 1.5 Updates • ECR 608A NPOESS Product Profiles • ECR 616A CIDP CDFCB-X Vol. V This revision also incorporates updates to all sections in this document. Highlights include: • NPOESS Data Product File-naming Convention [Reference to Volume I] • Incorporation of HDF5 Hierarchy allocation into metadata table (4.4-4)	All
C	06/27/2008	Incorporation of the following DCOs and ECRs: • 783 A Updates to the CDFCB-X Volume V • DCO C1 CDFCB-X Vol. V ECR 691A – Product Profiles Update • DCO C2 CDFCB-X Vol. V ECR 704 – Metadata Update • DCO C3 CDFCB-X Vol. V ECR 712A – N_Algorithm_Version • DCO C4 CDFCB-X Vol. V ECR 749 – Distributor Metadata	All
D	01/16/2009	Incorporation of ECR 899A	29, 30, 32, 36, 38, 47-78

Northrop Grumman Space & Mission Systems Corp.
Space Technology
One Space Park
Redondo Beach, CA 90278

NORTHROP GRUMMAN

Raytheon

Revision/Change Record

For Document No. D34862-05

Revision	Document Date	Revision/Change Description	Pages Affected
E	05/14/2009	Incorporation of ECR 960A • Added effectivity to GEO datasets and updated definition for West_Bounding_Coordinate, East_Bounding_Coordinate, North_Bounding_Coordinate, and Sout_Bounding_Coordinate • Instrument_Short_Name - updated HDF5 Hierarchy to include S (Spacecraft Diary) • Time_of_Day, N_GEO_Ref, N_Anc_Filename, and N_Aux_Filename - corrected typo in example • N_Software_Version and N_Granule_Status - updated HDF5 Hierarchy to include E (Spacecraft Diary) • Updated CrIS SDR GEO example XML Product Profile • Updated CrIS SDR GEO example XML Product Profile • Added the following text to N_Satellite/Local* and N_Solar* angles, G-Ring-* values, and East_, West_, North_, and South_ Bounding_Coordinate attributes: "N_Satellite/Local* and N_Solar* angles, G-Ring-* values, and East_, West_, North_, and South_ Bounding_Coordinate" • 2. Updated N_GEO_Ref example: GIGTO_npp_d20030311_t1400000_e1430000_b12345_c20030311153000000000_navo_dev.h5 • 3. Added the following text to N_Percent_Erroneous_Data, N_Percent_Missing_Data, N_Percent_Not-Applicable_Data: "VIIRS Bright Pixel IP (VIIRS-Bright-Pixel-Mod-IP)"	42, 53, 55-59, 62, 64, 70-72, 74-79, 81, 84, 92-137, 143

Northrop Grumman Space & Mission Systems Corp.
Space Technology
One Space Park
Redondo Beach, CA 90278

NORTHROP GRUMMAN
Raytheon

Revision/Change Record

For Document No. D34862-05

Revision	Document Date	Revision/Change Description	Pages Affected
F	12/09/2009	ECR 1015A incorporates the following changes: • ECR 989A DCO F1 – N_Anc_Filename – N_Aux_Filename Update • Section 3.2 – Added Geolocation applicability to the XML User Block for consistent representation in the delivered HDF5 files as requested by both the users and IDPS, vetted at the DFWG. Also updated example titles in Appendix A • Incorporates ECR 1012 - Updated Appendix A, DATA MNEMONIC TO INTERFACE MAPPING to reference D34862-01, CDFCB-X Volume I for the mapping. This was done based on user feedback on use of the mappings as well as eliminates duplication and precedence issues across the various volumes of the CDFCB-X • Table 4.4-4, Metadata Delivered in NPOESS Data Products – East_Bounding_Coordinate, North_Bounding_Coordinate, South_Bounding_Coordinate, and West_Bounding_Coordinate – updated definition to call out that: ○ "The longitude of the point is based on the exit vectors which are assumed to be the center of a pixel." As requested by IDPS to eliminate any ambiguity ○ For products without earth geolocated observations, (e.g. OMPS Calibration) this attribute is not applicable (= Default value) • Appendix B, NPOESS Delivered Documentation ○ Created separate listings for the CDFCB-X Volume VII calling it out by its parts and not by a single entry ○ Corrected typo in document number for the NPOESS CIS ICD Volume I ○ Add C++ to indicate the material covered in the document for the NPOESS API User's Guide Volume I ○ Removed NPOESS System Operations Concepts from listing since most of the OpsCons are not publicly releasable and do not provide any requirements, specifications, or interfaces • Operation_Mode (typographical): Updated OMPS example to provide proper Instrument Short Name (OMPS-TC in lieu of OMPS)	32, 33, 36, 51, 74, 76, 85, 86, 116, 117, 118

Table of Contents

List of Figures

List of Tables

List of Examples

1.0 INTRODUCTION

Metadata describes the content, quality, condition, and other characteristics of the data it is associated with. This document describes the metadata associated with the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Data Products delivered to external users.

1.1 Document Purpose and Scope

This document provides definitions, structures, and examples of the metadata delivered within the NPOESS Data Product HDF5 files and its organization. This document is meant as a reference document for the JPSS Common Data Format Control Book – External (CDFCB-X) Volumes describing NPOESS data that are delivered as HDF5 files, Volume II, 474-00001-02 (RDRs), Volume III, 474-00001-03 (SDR/TDRs) Volume IV, 474-00001-04 (EDR/IP/ARPs), and Volume VI, 474-00001-06 (Ancillary Data, Auxiliary Data, Reports, and Messages). The metadata structure will evolve and be refined as the NPOESS design progresses from the initial NPOESS Preparatory Project (NPP) implementation to the final NPOESS era. The metadata described herein applies generally to both the NPP and the NPOESS stages. Unless specifically identified as NPP only or NPOESS only, all references to NPOESS will imply both NPOESS and NPP.

For an overview of the CDFCB-X and the list of reference documents, see the JPSS CDFCB-X Vol. I, 474-00001-01.

1.2 Document Overview

Section 1: Introduction – Provides a brief overview of the JPSS CDFCB-X, Vol. V, 474-00001-05, for the NPOESS program, the document's purpose, and its scope.

Section 2: NPOESS Data Product Profiles – Provides the NPOESS Data Product Profile Extensible Markup Language (XML) Schema, Data Type Definition (DTD), and Style Sheet.

Section 3: HDF5 XML User Block for NPOESS Data Products – Provides the data format definitions for the XML User Blocks provided within the delivered Hierarchical Data Format Release 5 (HDF5) NPOESS Data Product files.

Section 4: NPOESS Data Product Metadata – Provides an overview and definitions of the metadata elements provided with the NPOESS Data Products.

Appendix A: Examples – Provides examples of the HDF5 metadata, as delivered within the XML User Block of the delivered NPOESS Data Products and examples of the NPOESS Data Product Profiles.

Appendix B: NPOESS Delivered Documentation – Provides the listing of the various NPOESS documentation which are delivered to the Centrals and the Comprehensive Large Array-data Stewardship System (CLASS).

2.0 NPOESS DATA PRODUCT PROFILES

Data Mnemonic	DP_NU-L41000-000
Description/ Purpose	NPOESS Data Product Profiles provide an XML rendering of the structure of a granule in the NPOESS Data Products. See the JPSS CDFCB-X Vol. I, 474-00001-01, for an overview and in-depth explanation of the NPOESS Data Product Profiles. The following section provides the NPOESS Data Product Profile XML Schema, DTD, and Style Sheet. The XML Schema and DTD provide the specifics, required as per XML 1.0, for how the XML hierarchy is implemented. The Style Sheet is the same as that used to render the Product Profiles in the CDFCB-X. In order to utilize the XML Schema or Style Sheet, the user will need to make modifications relevant to their intended use. These modifications are provided in Section 2.3. For more information on XML and its usage, see http://www.w3.org/XML/. The style sheet provided is an example style sheet for rendering the product profiles. This style sheet is used to render the tables for NPOESS Data Product Profiles in the CDFCB-X. The renderings in the CDFCB-X are formatted for readability for the user and are separated into three common groups: Science Data Quality Flags Scale Factors
File-Naming Construct	See the File-Naming Convention for NPOESS Data Product Profiles, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4
File Size	Varies by product based on number of dataset arrays
File Format Type	XML
Production Frequency	Produced for each NPOESS Data Product. Update frequency based on modifications made to the structure of a given NPOESS Data Product
Data Content and Data Format	See Table 2.0-1, NPOESS Data Product Profile Format, for details. Section 2.1, NPOESS Data Product Profile XML Schema and DTD, provides the XML Schema and DTD. Section 2.2, NPOESS Data Product Profile XML Style Sheet, provides an XML Style Sheet that can be used for rendering the NPOESS Data Products Profiles. Section 2.3, NPOESS Data Product Profile XML Headers, provides the necessary headers for the XMLs to utilize either the Schema or DTD and the Stylesheet. See the JPSS CDFCB-X Vol. I, 474-00001-01, for an overview of the NPOESS Product Profiles.

Table 2.0-1, NPOESS Data Product Profile Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
NPOESSDataProduct	N/A	Complex Type	Subfields: ProductName CollectionShortName DataProductID ProductData	N/A	Required. A single NPOESS Data Product describes all of the DataProduct elements associated with a single “ProductData” Group and NPOESS HDF5 file.
ProductName	N/A	String	See the JPSS CDFCB-X Vol. I, 474-00001-01, Appendix A, for a list of the Collection Long Names	N/A	Required. The ProductName is the Collection Long Name of the data product represented in the Product Profile. This field is used for rendering purposes.
CollectionShortName	N/A	String	See the JPSS CDFCB-X Vol. I, 474-00001-01, Appendix A for a list of the Collection Short Names	N/A	Required. Provides the Collection Short Name as defined by the JPSS CDFCB-X Vol. I, 474-00001-01. This value is used in the HDF5 file for the various Group labels.
DataProductID	N/A	String	See the JPSS CDFCB-X Vol. I, 474-00001-01, Appendix A for a list of DataProduct IDs.	N/A	Required. Provides the Data Product ID as defined in the JPSS CDFCB-X Vol. I, 474-00001-01. This value is also used in the NPP/NPOESS Data Products HDF5 filename construct.
ProductData	N/A	Complex Type	Subfields: DataName Field	N/A	Required, repeating. The ProductData element describes the various groupings of data included within the HDF5 ProductData set.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DataName	N/A	String	Free Text	N/A	Required. The DataName element provides a description of a dataset found within an NPOESS HDF5 file. This field is used for rendering purposes.
Field	N/A	Complex Type	Subfields: Name Dimension DataSize Datum	N/A	Required, repeating. A ProductData element must contain at least one Field. A Field must contain at least one Datum element. Field elements may contain Dimension elements. Multiple Field elements are complex arrays that contain multi-dimension sub-arrays. For simple types, a ProductData element contains a single Field that may contain multiple Datum elements of different sized types.
Name	N/A	String	Free Text	N/A	Optional (depends on parent element). Names apply to distinct information units for comparison, data handling, and reference.
Dimension	N/A	Complex Type	Subfields: Name GranuleBoundary Dynamic MaxIndex MinIndex	N/A	Optional, repeating. The Dimension element defines the rank characteristics of multi-dimensional array products within Field elements and ProductData elements.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DataSize	N/A	Complex Type	Subfields: Count Type	N/A	Required. The DataSize element is the size of a particular Field in a ProductData definition.
Datum	N/A	Complex Type	Subfields: Description DatumOffset Scaled ScaleFactorName MeasurementUnits RangeMin RangeMax DataType FillValue LegendEntry	N/A	Required, repeating. The Datum element is the most primitive type occurring within a Field of a ProductData element. A data record may contain one or more individual Datum elements.
Count	N/A	Integer	Valid Integer > 0	N/A	Required. The Count element is the number of units for the type indicated. Generally the Data Size is provided in 8 bit bytes.
Type	N/A	String	bit(s) byte(s)	N/A	Required. The Type field specifies the unit of measure, or data type, for DataSize.
Description	N/A	String	Free Text	N/A	Required. Provides a description of, or elaborates on, the name of a data field or datum.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DatumOffset	N/A	Integer	Valid Integer >= 0	N/A	Required. The Offset element identifies the index for the start of the Datum element within a field.
Scaled	N/A	Boolean	0 or 1	N/A	Required. Indicates whether or not a field has been scaled. If the dataset is scaled, then the ScaleFactorName is provided. “1” is scaled “0” is not scaled
ScaleFactorName	N/A	String	<Dataset Name>Factors <CommonName>Factors	N/A	Optional. The name of the dataset that contains the scale and offset information for the scaled dataset. In general, the scale factor name is generated by appending “Factors” to the name of the parameter that is scaled. If more than one parameter is scaled in a granule, and the parameters share the same scale and offset factors, the names of the parameters use the common element in the parameter name.
MeasurementUnits	N/A	String	Represented using as the SI Units Conventions as defined by the National Institute of Standards and Technology (NIST)	N/A	Optional. The MeasurementUnits are the engineering values determined for the individual Datum element. Note: the measurement unit applies to the unscaled value rather than the scaled value.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RangeMin	N/A	Float	Valid Float	N/A	Optional. The RangeMin value applies to the measurement value after application of the scale factor(s). Value will match the type of the field it is describing. These values are only provided in those instances where the NPOESS System Specification calls for a validated range over which performance of the NPP/NPOESS Data Products are guaranteed.
RangeMax	N/A	Float	Valid Float	N/A	Optional. The RangeMax value applies to the measurement value after application of the scale factor(s). Value will match the type of the field it is describing\ These values are only provided in those instances where the NPOESS System Specification calls for a validated range over which performance of the NPP/NPOESS Data Products are guaranteed.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DataType	N/A	String	See the JPSS CDFCB-X Vol. I, 474-00001-01, Appendix I, HDF5 Data Type Crosswalk, for a list of the possible Non-Language Specific Types	N/A	Required. The DataType is the bit width and computer representation of the HDF5 dataset elements. If no representation is provided, for example "2-bit", then the representation is bitwise. When a data field is represented as a scaled HDF dataset, the DataType is the type of the scaled dataset; the type of the scale factor dataset is the type of the data field.
FillValue	N/A	Complex Type	Subfields: Name Value	N/A	Optional, repeating The FillValue is the value of the Datum element which has special meaning. The label for the fill value is provided. Note that the fill values need to be converted to the appropriate data type and fill value when performing unscaling – where applicable.
LegendEntry	N/A	Complex Type	Subfields: Name Value	N/A	Optional, repeating. Legends associated name/value pairs.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
GranuleBoundary	N/A	Boolean	0 or 1	N/A	Optional. The GranuleBoundary element indicates that the dimension is contiguous over granule boundaries. For scanning sensors, i.e. Visible/Infrared Imager/Radiometer Suite (VIIRS), the AlongTrack dimension is the dimension which is contiguous across granules, as related to aggregations of granules in a single HDF5 file. “1” is a granule boundary “0” is not a granule boundary
Dynamic	N/A	Boolean	0 or 1	N/A	Required. The Dimension(s) may be either static or dynamic. “1” is a dynamic element “0” is a static element.
MaxIndex	N/A	Integer	Valid Integer > 0	N/A	Required. The MaxIndex element is the maximum expected value for a dimension. For static arrays, the MaxIndex is equal to the MinIndex. For Dynamic dimensions, the MaxIndex is the maximum number of values expected for the named index value. This element occurs only once for each Dimension element.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
MinIndex	N/A	Integer	Valid Integer > 0	N/A	Required. The MinIndex element is the minimum expected value for a dimension. For static arrays, the MaxIndex is equal to the MinIndex. For Dynamic dimensions, the MinIndex is the minimum number of values expected for the named index value. This element occurs only once for each Dimension element.
Value	N/A	Double	Valid real number	N/A	Required. This element is the value – the meaning of this attribute is dependent on its use. For Legend Entries – this attribute provides information relative to the datum that the legend applies to (for example, for quality flags – this provides the bit value). For Fill Values, this attribute is the value associated with a specific fill condition. This element may contain any number in the range of the specified data type.

2.1 NPOESS Data Product Profile XML Schema and DTD

To make use of the Schema or the DTD, the appropriate file must be saved in the same folder as the XML that uses it, and the header of the XML must be modified as described in Section 2.3.

2.1.1 NPOESS Data Product Profile XML Schema

To construct the Schema, copy and paste the content below into a new XML file and save it with the following filename and extension: NPOESS_Product_Profile.xsd.

```
<?xml version="1.0" encoding="ISO-8859-1"?>

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">

<!-- == Product Profile XML Schema == -->

<!-- == Annotation for this schema == -->
<xs:annotation>
 <xs:documentation xml:lang="en">
  NPP/NPOESS Data Products XML Schema
 </xs:documentation>
</xs:annotation>


<!-- == NPP/NPOESS Data Product Primary Element == -->
<xs:element name="NPOESSDataProduct"
type="NPOESSDataProductType" />


<!-- == NPP/NPOESS Data Products Profile == -->
<xs:complexType name="NPOESSDataProductType">
 <xs:sequence>
  <xs:element name="ProductName" type="xs:string" minOccurs="1"
maxOccurs="1" />
  <xs:element name="CollectionShortName" type="xs:string"
minOccurs="1" maxOccurs="1" />
<xs:element name="DataProductID" type="xsdxs:string"
minOccurs="1" maxOccurs="1" />
  <xs:element name="ProductData" type="ProductDataType"
minOccurs="1" maxOccurs="3" />
 </xs:sequence>
</xs:complexType>


<!-- == Product Data Types == -->
```

```
<xs:complexType name="ProductDataType">
<xs:sequence>
<xs:element name="DataName" type="xs:string" minOccurs="1"
maxOccurs="1" />
<xs:element name="Field" type="FieldType" minOccurs="1"
maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>


<!-- == Field Type == -->
<xs:complexType name="FieldType">
<xs:sequence>
<xs:element name="Name" type="xs:string" minOccurs="0"
maxOccurs="1" />
<xs:element name="Dimension" type="DimType" minOccurs="0"
maxOccurs="unbounded" />
<xs:element name="DataSize" type="DataSizeType" minOccurs="1"
maxOccurs="1" />
<xs:element name="Datum" type="DatumType" minOccurs="1"
maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>


<!-- == Data Size Type == -->
<xs:complexType name="DataSizeType">
<xs:sequence>
<xs:element name="Count" type="xs:integer" minOccurs="1"
maxOccurs="1" />
<xs:element name="Type" type="xs:string" minOccurs="1"
maxOccurs="1" />
</xs:sequence>
</xs:complexType>


<!-- == Dim Type == -->
<xs:complexType name="DimType">
<xs:sequence>
<xs:element name="Name" type="xs:string" minOccurs="0"
maxOccurs="1" />
<xs:element name="GranuleBoundary" type="xs:boolean"
minOccurs="0" maxOccurs="1" />
<xs:element name="Dynamic" type="xs:boolean" minOccurs="1"
maxOccurs="1" />
<xs:element name="MinIndex" type="xs:integer" minOccurs="1"
maxOccurs="1" />
```

```
<xs:element name="MaxIndex" type="xs:integer" minOccurs="1"
maxOccurs="1" />
</xs:sequence>
</xs:complexType>


<!-- == Datum Type == -->
<xs:complexType name="DatumType">
<xs:sequence>
<xs:element name="Description" type="xs:string" minOccurs="1"
maxOccurs="1" />
<xs:element name="DatumOffset" type="xs:integer" minOccurs="1"
maxOccurs="1" />
<xs:element name="Scaled" type="xs:boolean" minOccurs="1"
maxOccurs="1" />
<xs:element name="ScaleFactorName" type="xs:string"
minOccurs="0" maxOccurs="1" />
<xs:element name="MeasurementUnits" type="xs:string"
minOccurs="0" maxOccurs="1" />
<xs:element name="RangeMin" type="xs:string" minOccurs="0"
maxOccurs="1" />
<xs:element name="RangeMax" type="xs:string" minOccurs="0"
maxOccurs="1" />
<xs:element name="DataType" type="xs:string" minOccurs="1"
maxOccurs="1" />
<xs:element name="FillValue" type="FillValueType" minOccurs="0"
maxOccurs="unbounded" />
<xs:element name="LegendEntry" type="LegendEntryType"
minOccurs="0" maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>


<!-- == Fill Value Type == -->
<xs:complexType name="FillValueType">
<xs:sequence>
<xs:element name="Name" type="xs:string" minOccurs="1"
maxOccurs="1" />
<xs:element name="Value" type="xs:double" minOccurs="1"
maxOccurs="1" />
</xs:sequence>
</xs:complexType>


<!-- == Legend Entry Type == -->
<xs:complexType name="LegendEntryType">
<xs:sequence>
```

```
<xs:element name="Name" type="xs:string" minOccurs="1"
maxOccurs="1" />
<xs:element name="Value" type="xs:double" minOccurs="1"
maxOccurs="1" />
</xs:sequence>
</xs:complexType>

</xs:schema>
```

2.1.2 NPOESS Data Product Profile XML DTD

To construct the DTD, copy and paste the content below into a new XML file and save it with the following filename and extension: NPOESS_Product_Profile.dtd

```
<?xml version="1.0"?>

<!ELEMENT NPOESSDataProduct (ProductName, CollectionShortName,
DataProductID, ProductData+)>
<!ELEMENT ProductData (DataName, Dimension*, Field*)>
<!ELEMENT Field (Name?, FieldOffset?, Dimension*, DataSize,
Datum+)>
<!ELEMENT DataSize (Count, Type)>
<!ELEMENT Dimension (Name, GranuleBoundary?, Dynamic, MinIndex,
MaxIndex)>
<!ELEMENT Datum (Description, DatumOffset?, Scaled,
ScaleFactorName?, MeasurementUnits?, RangeMin?, RangeMax?,
DataType, FillValue*, LegendEntry*)>
<!ELEMENT FillValue (Name, Value)>
<!ELEMENT LegendEntry (Name, Value)>
<!ELEMENT ProductName (#PCDATA)>
<!ELEMENT CollectionShortName (#PCDATA)>
<!ELEMENT DataProductID (#PCDATA)>
<!ELEMENT DataName (#PCDATA)>
<!ELEMENT Name (#PCDATA)>
<!ELEMENT FieldOffset (#PCDATA)>
<!ELEMENT Count (#PCDATA)>
<!ELEMENT Type (#PCDATA)>
<!ELEMENT AttributeName (#PCDATA)>
<!ELEMENT GranuleBoundary (#PCDATA)>
<!ELEMENT Dynamic (#PCDATA)>
<!ELEMENT MinIndex (#PCDATA)>
<!ELEMENT MaxIndex (#PCDATA)>
<!ELEMENT Description (#PCDATA)>
<!ELEMENT DatumOffset (#PCDATA)>
<!ELEMENT Scaled (#PCDATA)>
<!ELEMENT ScaleFactorName (#PCDATA)>
<!ELEMENT MeasurementUnits (#PCDATA)>
```

```
<!ELEMENT RangeMin (#PCDATA)>
<!ELEMENT RangeMax (#PCDATA)>
<!ELEMENT DataType (#PCDATA)>
<!ELEMENT Value (#PCDATA)>
```

2.2 NPOESS Data Product Profile XML Style Sheet

To make use of the Style Sheet, the appropriate file must be saved in the same folder as the XML that uses it, and the header of the XML must be modified as described in Section 2.3. To construct the Style Sheet, copy and paste the content below into a new XML file and save it with the following filename and extension: NPOESS_Product_Profile_StyleSheet.xsl.

```
<?xml version='1.0' encoding='utf-8'?>
<xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
<xsl:output method="html"/>
<xsl:template match="/">
<html>
 <head>

  <xsl:for-each select="NPOESSDataProduct">
   <title>Summary of <xsl:value-of
select="ProductName"/></title>
  </xsl:for-each>

  <style type="text/css" media="screen">
   body {
    margin: 0;
    padding: 0;
    background: #fff;
    font-size: 8pt;
    font-weight: normal;
   }

   td {
    margin: 0;
    padding: 0;
    background: #fff;
    font-size: 8pt;
    font-weight: normal;
   }
  </style>
 </head>

 <body>

  <!-- The Granule Content Summary -->

  <xsl:for-each select="NPOESSDataProduct">
   <h3 align="center">  <xsl:value-of
select="ProductName"/></h3>
```

```
   <xsl:if test="not(NumberOfProductData = 0)">
       <xsl:for-each select="ProductData">
     <h4 align="center">
      <xsl:value-of select="DataName"/>
     </h4>

     <table cellspacing="0" cellpadding ="4" border="1">
      <tr>
       <td valign="top" align="left"><b>Name</b></td>
       <td valign="top" align="left"><b>Description</b></td>
       <td valign="top" align="left"><b>Data Type</b></td>
       <td valign="top" align="left"><b>Aggregate
Dimension</b></td>
       <td valign="top" align="left"><b>Granule
Dimension</b></td>
       <td valign="top" align="left"><b>Units</b></td>
      </tr>

      <xsl:for-each select="Field">
       <tr>
        <td valign="top" align="left">
         <xsl:value-of select="Name"/>
        </td>
        <td valign="top" align="left">
         <xsl:value-of select="Datum/Description"/>
        </td>

        <td valign="top" align="left">
         <xsl:value-of select="Datum/DataType"/>
        </td>
        <td valign="top" align="left">
         [<xsl:for-each select="Dimension">
          <xsl:call-template name="WriteAggDimSize"/>
         </xsl:for-each>]
        </td>

        <td valign="top" align="left">
         [<xsl:for-each select="Dimension">
          <xsl:call-template name="WriteGranDimSize"/>
         </xsl:for-each>]
        </td>
        <td valign="top" align="left">
         <xsl:value-of select="Datum/MeasurementUnits"/>
        </td>
       </tr>
      </xsl:for-each>
```

```
     </table>
    </xsl:for-each>
   </xsl:if>
  </xsl:for-each>

  <!-- The NPOESS Data Product Profile -->

  <h2 align="center">
   Summary of <xsl:value-of
select="NPOESSDataProduct/ProductName"/>
  </h2>

  <!-- For Each Data Product - Science, Quality Flags, Factors -
->
  <xsl:for-each select="NPOESSDataProduct/ProductData">
   <h3 align="center">
    <xsl:value-of select="DataName"/>
   </h3>

   <br/>

   <!-- Field Information -->

   <table cellSpacing="0" cellPadding="0" border="1">
    <tr>
     <td colSpan="5" vAlign="top"
align="center"><b>Fields</b></td>
    </tr>
    <tr>
     <td vAlign="top" align="left"><b>Name</b></td>
     <td vAlign="top" align="left"><b>Data Size</b></td>
     <td vAlign="top" align="left"><b>Dimensions</b></td>
    </tr>

    <xsl:for-each select="Field">
     <tr>

      <!-- Product Data/Name Information -->

      <td vAlign="top" align="left">
       <xsl:value-of select="Name"/>
      </td>

      <!-- Product Data/Data Size Information -->

      <td vAlign="top" align="left">
       <xsl:value-of select="DataSize/Count"/>
```

```
       <xsl:value-of select="DataSize/Type"/>
      </td>
      <td vAlign="top" align="left">

       <!-- Product Data/Dimension Information -->

       <table cellSpacing="0" cellPadding="0" border="1">
        <tr>
         <td vAlign="top" align="left"><b>Name</b></td>
         <td vAlign="top" align="left"><b>Granule
Boundary</b></td>
         <td vAlign="top" align="left"><b>Dynamic</b></td>
         <td vAlign="top" align="left"><b>Min Array
Size</b></td>
         <td vAlign="top" align="left"><b>Max Array
Size</b></td>
        </tr>

        <xsl:for-each select="Dimension">
         <tr>
          <td vAlign="top" align="left">
           <xsl:value-of select="Name"/>
          </td>

          <td vAlign="top" align="left">
           <xsl:if test="GranuleBoundary = 1">
            Yes
           </xsl:if>
           <xsl:if test="GranuleBoundary = 0">
            No
           </xsl:if>
          </td>

          <td valign="top" align="left">
           <xsl:if test="Dynamic = 1">
            Yes
           </xsl:if>
           <xsl:if test="Dynamic = 0">
            No
           </xsl:if>
          </td>

          <td vAlign="top" align="left">
           <xsl:value-of select="MinIndex"/>
          </td>

          <td vAlign="top" align="left">
```

```
          <xsl:value-of select="MaxIndex"/>
         </td>
        </tr>
       </xsl:for-each>
      </table>

      <!-- Datum Information -->

      <table cellSpacing="0" cellPadding="0" border="1">
       <tr>
        <td colSpan="10" vAlign="top"
align="left"><b>Datum</b></td>
       </tr>
       <tr>
        <td vAlign="top" align="left"><b>Description</b></td>
        <td vAlign="top" align="left"><b>Datum Offset</b></td>
        <td vAlign="top" align="left"><b>Unscaled Valid Range
Min</b></td>
        <td vAlign="top" align="left"><b>Unscaled Valid Range
Max</b></td>
        <td vAlign="top" align="left"><b>Measurement
Units</b></td>
        <td vAlign="top" align="left"><b>Scaled</b></td>
        <td vAlign="top" align="left"><b>Scale Factor
Name</b></td>
        <td vAlign="top" align="left"><b>Data Type</b></td>
        <td vAlign="top" align="left"><b>Fill Values</b></td>
        <td vAlign="top" align="left"><b>Legend
Entries</b></td>
       </tr>

       <xsl:for-each select="Datum">
        <tr>

         <!-- Datum/Description -->

         <td vAlign="top" align="left">
          <xsl:value-of select="Description"/>
         </td>

         <!-- Datum/Offset -->

         <td vAlign="top" align="left">
          <xsl:value-of select="DatumOffset"/>
         </td>

         <!-- Datum/Ranges -->
```

```
<td vAlign="top" align="left">
 <xsl:if test="RangeMin">
  <xsl:value-of select="RangeMin"/>
 </xsl:if>
 <xsl:if test="not(RangeMin)">
  <br/>
 </xsl:if>
</td>
<td vAlign="top" align="left">
 <xsl:if test="RangeMax">
  <xsl:value-of select="RangeMax"/>
 </xsl:if>
 <xsl:if test="not(RangeMax)">
  <br/>
 </xsl:if>
</td>

<!-- Datum/Units -->

<td vAlign="top" align="left">
 <xsl:if test="MeasurementUnits">
  <xsl:value-of select="MeasurementUnits"/>
 </xsl:if>
 <xsl:if test="not(MeasurementUnits)">
  <br/>
 </xsl:if>
</td>

<!-- Datum/Scaling -->

<td vAlign="top" align="left">
 <xsl:if test="Scaled = 1">
  Yes
 </xsl:if>
 <xsl:if test="Scaled = 0">
  No
 </xsl:if>
</td>
<td vAlign="top" align="left">
 <xsl:if test="ScaleFactorName">
  <xsl:value-of select="ScaleFactorName"/>
 </xsl:if>
 <xsl:if test="not(ScaleFactorName)">
  <br/>
 </xsl:if>
</td>
```

```
<!-- Datum/Data Type -->

<td vAlign="top" align="left">
 <xsl:value-of select="DataType"/>
</td>
<td vAlign="top" align="left">

 <!-- Datum/Fill Values -->
 <table cellSpacing="0" cellPadding="0" border="1">
  <tr>
   <td vAlign="top" align="left"><b>Name</b></td>
   <td vAlign="top" align="left"><b>Value</b></td>
  </tr>

  <xsl:for-each select="FillValue">
   <tr>
    <td vAlign="top" align="left">
     <xsl:value-of select="Name"/>
    </td>
    <td vAlign="top" align="left">
     <xsl:value-of select="Value"/>
    </td>
   </tr>
  </xsl:for-each>
 </table>
</td>

<td vAlign="top" align="left">

 <!-- Datum/Legend -->
 <table cellSpacing="0" cellPadding="0" border="1">
  <tr>
   <td vAlign="top" align="left"><b>Name</b></td>
   <td vAlign="top" align="left"><b>Value</b></td>
  </tr>

  <xsl:for-each select="LegendEntry">
   <tr>
    <td valign="top" align="left">
     <xsl:value-of select="Name"/>
    </td>
    <td valign="top" align="left">
     <xsl:value-of select="Value"/>
    </td>
   </tr>
  </xsl:for-each>
```

```
            </table>
           </td>
          </tr>
         </xsl:for-each> <!-- END Datum -->
        </table>
       </td>
      </tr>
     </xsl:for-each> <!-- END Field -->
    </table>
   </xsl:for-each> <!-- END Product Data -->
  </body>
</html>
</xsl:template>

<!-- Write Aggregation Dimension Size Function -->

<xsl:template name="WriteAggDimSize">
 <xsl:variable name="num" select="last()"/>
 <xsl:variable name="cur" select="position()"/>
 <xsl:variable name="bnd" select="GranuleBoundary"/>

 <xsl:choose>
  <xsl:when test="MaxIndex !=1">
   <xsl:if test="$bnd=1">
    <xsl:text>N*</xsl:text>
   </xsl:if>

   <xsl:choose>
    <xsl:when test="$cur=1 and $num=1">
     <xsl:value-of select="MaxIndex"/>
    </xsl:when>

    <xsl:when test="$cur=$num">
     <xsl:value-of select="MaxIndex"/>
    </xsl:when>
    <xsl:otherwise>
     <xsl:value-of select="MaxIndex"/>,
    </xsl:otherwise>
   </xsl:choose>
  </xsl:when>
  <xsl:otherwise>
   <xsl:if test="$bnd=1">
    <xsl:text>N</xsl:text>
   </xsl:if>
  </xsl:otherwise>
 </xsl:choose>
</xsl:template>
```

```
<!-- Write Granule Dimension Size -->

<xsl:template name="WriteGranDimSize">
 <xsl:variable name="num" select="last()"/>
 <xsl:variable name="cur" select="position()"/>

 <xsl:choose>
  <xsl:when test="$cur=1 and $num=1">
   <xsl:value-of select="MaxIndex"/>
  </xsl:when>

  <xsl:when test="$cur=$num">
   <xsl:value-of select="MaxIndex"/>
  </xsl:when>
  <xsl:otherwise>
   <xsl:value-of select="MaxIndex"/>,
  </xsl:otherwise>
 </xsl:choose>
</xsl:template>

</xsl:stylesheet>
```

2.3 NPOESS Data Product Profile XML Headers

The first 5 lines of every Product Profile will be as shown in the Standard (Provided) Header. To modify the XML to use the Schema or DTD and the Style sheet, replace with the following lines based on need. Note that the Schema and DTD are just 2 ways of to display the same information and verify the construction of the XML. They both follow the format given in Table 2.0-1.

Standard (Provided) Header

```
<?xml version="1.0"?>
<!--<?xml-stylesheet type="text/xsl" href="NPOESS_Product_Profile_StyleSheet.xsl"?>-->
<!--<!DOCTYPE NPOESSDataProduct SYSTEM "NPOESS_Product_Profile.dtd">-->
<!--<NPOESSDataProduct xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="NPOESS_Product_Profile.xsd">-->
<NPOESSDataProduct>
```

Style Sheet Only Header

```
<?xml version="1.0"?>
```

```
<?xml-stylesheet type="text/xsl" href="NPOESS_Product_Profile_StyleSheet.xsl"?>

<!--<!DOCTYPE NPOESSDataProduct SYSTEM "NPOESS_Product_Profile.dtd">-->

<!--<NPOESSDataProduct xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="NPOESS_Product_Profile.xsd">-->

<NPOESSDataProduct>
```

Schema Only Header

```
<?xml version="1.0"?>

<!--<?xml-stylesheet type="text/xsl" href="NPOESS_Product_Profile_StyleSheet.xsl"?>-->

<!--<!DOCTYPE NPOESSDataProduct SYSTEM "NPOESS_Product_Profile.dtd">-->

<NPOESSDataProduct xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="NPOESS_Product_Profile.xsd">
```

DTD Only Header

```
<?xml version="1.0"?>

<!--<?xml-stylesheet type="text/xsl" href="NPOESS_Product_Profile_StyleSheet.xsl"?>-->

<!DOCTYPE NPOESSDataProduct SYSTEM "NPOESS_Product_Profile.dtd">

<!--<NPOESSDataProduct xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="NPOESS_Product_Profile.xsd">-->

<NPOESSDataProduct>
```

Style Sheet & Schema Header

```
<?xml version="1.0"?>

<?xml-stylesheet type="text/xsl" href="NPOESS_Product_Profile_StyleSheet.xsl"?>

<!--<!DOCTYPE NPOESSDataProduct SYSTEM "NPOESS_Product_Profile.dtd">-->

<NPOESSDataProduct xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="NPOESS_Product_Profile.xsd">
```

Style Sheet & DTD Header

```
<?xml version="1.0"?>

<?xml-stylesheet type="text/xsl" href="NPOESS_Product_Profile_StyleSheet.xsl"?>

<!DOCTYPE NPOESSDataProduct SYSTEM "NPOESS_Product_Profile.dtd">

<!--<NPOESSDataProduct xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="NPOESS_Product_Profile.xsd">-->

<NPOESSDataProduct>
```

3.0 HDF5 XML USER BLOCK FOR NPOESS DATA PRODUCTS

The HDF5 XML User Block provides a subset of the metadata elements available in the HDF5 file via a header that can be accessed without any HDF5 tools; this header is attached to the beginning of all delivered NPOESS Data Products. This information provides a quick-look into the metadata attributes contained in an HDF5 file.

There are three elements used in the HDF5 XML User Block that do not come directly from the metadata attributes used in the HDF5 file:

- HDF_UserBlock
- Data_Product
- Number_of_Data_Products

These elements are part of the XML schema in order to describe parent elements that are derived from the groups in the HDF5 file.

3.1 Raw Data Records (RDR) HDF5 XML User Block

Description/ Purpose	Provides a metadata quick-look into the associated NPOESS Data Product, via the HDF5 header. This information details what is provided in the HDF5 file, specifying general information about the product(s); including the type(s) of product(s) included, the aggregation overview(s), etc. This data format is specific to the Raw Data Records (RDRs).
File Size	1536 bytes for each NPOESS Data Product included in the file.
File Format Type	XML header included in an HDF5 file
Data Content and Data Format	See Table 3.1-1, RDR HDF5 XML User Block Format, for details. Section 3.1.1 RDR HDF5 XML User Block Schema, provides the XML schema used for the delivered RDRs.

Table 3.1-1, RDR HDF5 XML User Block Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
HDF_UserBlock	N/A	Complex Type	Subfields: Mission_Name Platform_Shortname Number_of_Data_Products Data_Product	N/A	
Mission_Name	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
Platform_Short_Name	N/A	String	See Section 4.4 for the details of this element.	N/A	See section 4.4 for the details of this element.
Number_of_Data_Products	N/A	Integer	01 – 20	N/A	Identifies the number of data products included in the HDF5 file.
Data_Product	N/A	Complex Type	Subfields: N_Collection_Short_Name Instrument_Shortname N_Dataset_Type_Tag N_Processing_Domain AggregateBeginningDate AggregateBeginningOrbitNumber AggregateBeginningTime AggregateEndingDate AggregateEndingOrbitNumber AggregateEndingTime AggregateBeginningGranuleID AggregateEndingGranuleID	N/A	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
N_Collection_Short_Name	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
Instrument_Short_Name	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
N_Dataset_Type_Tag	N/A	String	RDR	N/A	See Section 4.4 for the details of this element.
N_Processing_Domain	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
AggregateBeginningDate	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
AggregateBeginningOrbitNumber	N/A	Integer	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
AggregateBeginningTime	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
AggregateEndingDate	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
AggregateEndingOrbitNumber	N/A	Integer	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
AggregateEndingTime	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
AggregateBeginningGranuleID	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.
AggregateEndingGranuleID	N/A	String	See Section 4.4 for the details of this element.	N/A	See Section 4.4 for the details of this element.

3.1.1 RDR HDF5 XML User Block Schema

```
<?xml version="1.0"?>

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
targetNamespace=”http://NPOESS RDR XML User Block” xmlns="http://NPOESS RDR
XML User Block">

<!-- == NPP/NPOESS HDF5 XML User Block XML Schema == -->

<!-- == NPP/NPOESS HDF5 User Block – Primary Element== -->
<xsd:element name=”HDF_UserBlock” type=”HDF_UserBlockType” />

<!-- == Annotation for this schema == -->
<xsd:annotation>
  <xsd:documentation xml:lang=”en”>
    NPP/NPOESS HDF5 User Block XML Schema
  </xsd:documentation>
</xsd:annotation>

<!-- == NPP/NPOESS HDF5 User Block == -->
<xsd:complexType name=”HDF_UserBlockType”>
  <xsd:sequence>

    <xsd:element name=”Mission_Name” type=”xsd:string” minOccurs=”1”
maxOccurs=”1” />
    <xsd:element name=”Platform_Short_Name” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
    <xsd:element name="Number_Of_Data_Products" type="xsd:integer"
minOccurs="1" maxOccurs="1" />
    <xsd:element name=”Data_Product” type=”Data_ProductType”
minOccurs=”1” maxOccurs=”unbounded” />
  </xsd:sequence>
</xsd:complexType>

<!-- == Data Product Type == -->
<xsd:complexType name=”Data_ProductType”>
  <xsd:sequence>
    <xsd:element name=”N_Collection_Short_Name” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
    <xsd:element name=”Instrument_Short_Name” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
    <xsd:element name=”N_Dataset_Type_Tag” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
<xsd:element name=”N_Processing_Domain” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
```

```
<xsd:element name=”AggregateBeginningDate” type=”xsd:string” minOccurs=”1” maxOccurs=”1” /><xsd:element name=”AggregateBeginningOrbitNumber” type=”xsd:integer” minOccurs=”1” maxOccurs=”1” />
   <xsd:element name=”AggregateBeginningTime” type=”xsd:string” minOccurs=”1” maxOccurs=”1” />
   <xsd:element name=”AggregateEndingDate” type=”xsd:string” minOccurs=”1” maxOccurs=”1” />
   <xsd:element name=”AggregateEndingOrbitNumber” type=”xsd:integer” minOccurs=”1” maxOccurs=”1” />
   <xsd:element name=”AggregateEndingTime” type=”xsd:string” minOccurs=”1” maxOccurs=”1” />
   <xsd:element name=”AggregateBeginningGranuleID” type=”xsd:string” minOccurs=”1” maxOccurs=”1” />
   <xsd:element name=”AggregateEndingGranuleID” type=”xsd:string” minOccurs=”1” maxOccurs=”1” />
  </xsd:sequence>
</xsd:complexType>
</xsd:schema>

<!-- == Data Type Definition == -->

<!ELEMENT HDF_UserBlock (Mission_Name, Platform_Short_Name, Number_Of_Data_Products, Data_Product+)>
<!ELEMENT Mission_Name (#PCDATA)>
<!ELEMENT Platform_Short_Name (#PCDATA)>
<!ELEMENT Number_Of_Data_Products (#PCDATA)>
<!ELEMENT Data_Product (N_Collection_Short_Name, Instrument_Short_Name, N_Dataset_Type_Tag, N_Processing_Domain, AggregateBeginningDate, AggregateBeginningOrbitNumber, AggregateBeginningTime, AggregateEndingDate, AggregateEndingOrbitNumber, AggregateEndingTime, AggregateBeginningGranuleID, AggregateEndingGranuleID>
<!ELEMENT N_Collection_Short_Name (#PCDATA)>
<!ELEMENT Instrument_Short_Name (#PCDATA)>
<!ELEMENT N_Dataset_Type_Tag (#PCDATA)>
<!ELEMENT N_Processing_Domain (#PCDATA)>
<!ELEMENT AggregateBeginningDate (#PCDATA)>
<!ELEMENT AggregateBeginningOrbitNumber (#PCDATA)>
<!ELEMENT AggregateBeginningTime (#PCDATA)>
<!ELEMENT AggregateEndingDate (#PCDATA)>
<!ELEMENT AggregateEndingOrbitNumber (#PCDATA)>
<!ELEMENT AggregateEndingTime (#PCDATA)>
<!ELEMENT AggregateBeginningGranuleID (#PCDATA)>
<!ELEMENT AggregateEndingGranuleID (#PCDATA)>
```

3.2 Sensor, Temperature, and Environmental Data Records, Application Related Products, Geolocation, and Intermediate Products HDF5 XML User Block

Description/ Purpose	Provides a metadata quick-look into the associated NPOESS Data Product, via the HDF5 header. This information details what is provided in the HDF5 file, specifying general information about the product(s); including the type(s) of product(s) included, the aggregation overview(s), etc. This data format is specific to the SDRs, TDRs, EDRs, ARPs, GEOs, and IPs.
File Size	1536 bytes for each NPOESS Data Product included in the file.
File Format Type	XML header included in an HDF5 file
Data Content and Data Format	See Table 3.2-1, SDR, TDR, EDR, ARP, GEO, and IP HDF5 XML User Block Format, for details. Section 3.2.1, HDF5 SDR, TDR, EDR, ARP, GEO, and IP HDF5 XML User Block Schema, provides the XML schema used for the NPOESS Data Products excluding the RDRs.

Table 3.2-1, SDR, TDR, EDR, ARP, GEO, and IP HDF5 XML User Block Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
HDF_UserBlock	N/A	Complex Type	Subfields: Mission_Name Platform_Short_Name N_GEO_Ref Number_of_Data_Products Data_Product	N/A	
Mission_Name	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
Platform_Short_Name	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
N_GEO_Ref	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
Number_of_Data_Products	N/A	Integer	1 - 20	N/A	Identifies the number of data products included in the HDF5 file

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data_Product	N/A	Complex Type	Subfields: N_Collection_Short_Name Instrument_Short_Name N_Dataset_Type_Tag N_Processing_Domain AggregateBeginningDate AggregateBeginningOrbitNumber AggregateBeginningTime AggregateEndingDate AggregateEndingOrbitNumber AggregateEndingTime AggregateBeginningGranuleID AggregateEndingGranuleID	N/A	
N_Collection_Short_Name	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
Instrument_Short_Name	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
N_Dataset_Type_Tag	N/A	String	SDR TDR IP ARP EDR GEO	N/A	See Section 4.4 for the details of this element

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
N_Processing_Domain	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element.
AggregateBeginningDate	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
AggregateBeginningOrbitNumber	N/A	Integer	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
AggregateBeginningTime	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
AggregateEndingDate	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
AggregateEndingOrbitNumber	N/A	Integer	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
AggregateEndingTime	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
AggregateBeginningGranuleID	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element
AggregateEndingGranuleID	N/A	String	See Section 4.4 for the details of this element	N/A	See Section 4.4 for the details of this element

3.2.1 HDF5 SDR, TDR, EDR, ARP, GEO, and IP HDF5 XML User Block Schema

```
<?xml version="1.0"?>

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema targetNamespace=http://
“NPOESS SDR, TDR, EDR, ARP, and IP XML User Block” xmlns="http://NPOESS
SDR, TDR, EDR, ARP, and IP XML User Block">

<!-- == NPP/NPOESS HDF5 XML User Block XML Schema == -->

<!-- == NPP/NPOESS HDF5 User Block – Primary Element== -->
<xsd:element name=”HDF_UserBlock” type=”HDF_UserBlockType” />

<!-- == Annotation for this schema == -->
<xsd:annotation>
  <xsd:documentation xml:lang=”en”>
    NPP/NPOESS HDF5 User Block XML Schema
  </xsd:documentation>
</xsd:annotation>

<!-- == NPP/NPOESS HDF5 User Block == -->
<xsd:complexType name=”HDF_UserBlockType”>
  <xsd:sequence>

    <xsd:element name=”Mission_Name” type=”xsd:string” minOccurs=”1”
maxOccurs=”1” />
    <xsd:element name=”Platform_Short_Name” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
    <xsd:element name=”N_GEO_Ref” type=”xsd:string”
minOccurs=”0” maxOccurs=”1” />
    <xsd:element name="Number_Of_Data_Products" type="xsd:integer"
minOccurs="1" maxOccurs="1" />
    <xsd:element name=”Data_Product” type=”Data_ProductType”
minOccurs=”1” maxOccurs=”unbounded” />
  </xsd:sequence>
</xsd:complexType>

<!-- == Data Product Type == -->
<xsd:complexType name=”Data_ProductType”>
  <xsd:sequence>
    <xsd:element name=”N_Collection_Short_Name” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
    <xsd:element name=”Instrument_Short_Name” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
<xsd:element name=”N_Dataset_Type_Tag” type=”xsd:string”
minOccurs=”1” maxOccurs=”1” />
```

```
   <xsd:element name="N_Processing_Domain" type="xsd:string"
minOccurs="1" maxOccurs="1" />
<xsd:element name="AggregateBeginningDate" type="xsd:string" minOccurs="1"
maxOccurs="1" />
<xsd:element name="AggregateBeginningOrbitNumber"
type="xsd:integer" minOccurs="1" maxOccurs="1" />
   <xsd:element name="AggregateBeginningTime" type="xsd:string"
minOccurs="1" maxOccurs="1" />
   <xsd:element name="AggregateEndingDate" type="xsd:string"
minOccurs="1" maxOccurs="1" />
   <xsd:element name="AggregateEndingOrbitNumber" type="xsd:integer"
minOccurs="1" maxOccurs="1" />
   <xsd:element name="AggregateEndingTime" type="xsd:string"
minOccurs="1" maxOccurs="1" />
   <xsd:element name="AggregateBeginningGranuleID" type="xsd:string"
minOccurs="1" maxOccurs="1" />
   <xsd:element name="AggregateEndingGranuleID" type="xsd:string"
minOccurs="1" maxOccurs="1" />
  </xsd:sequence>
</xsd:complexType>
</xsd:schema>

<!-- == Data Type Definition == -->

<!ELEMENT HDF_UserBlock (N_Processing_Domain, Mission_Name,
Platform_Short_Name, N_GEO_Ref, Number_Of_Data_Products, Data_Product+)>
<!ELEMENT Mission_Name (#PCDATA)>
<!ELEMENT Platform_Short_Name (#PCDATA)>
<!ELEMENT N_GEO_Ref (#PCDATA)>
<!ELEMENT Number_Of_Data_Products (#PCDATA)>
<!ELEMENT Data_Product (N_Collection_Short_Name, Instrument_Short_Name,
N_Dataset_Type_Tag, N_Processing_Domain, AggregateBeginningDate,
AggregateBeginningOrbitNumber, AggregateBeginningTime, AggregateEndingDate,
AggregateEndingOrbitNumber, AggregateEndingTime, AggregateBeginningGranuleID,
AggregateEndingGranuleID)>
<!ELEMENT N_Collection_Short_Name (#PCDATA)>
<!ELEMENT Instrument_Short_Name (#PCDATA)>
<!ELEMENT N_Dataset_Type_Tag (#PCDATA)>
<!ELEMENT N_Processing_Domain (#PCDATA)>
<!ELEMENT AggregateBeginningDate (#PCDATA)>
<!ELEMENT AggregateBeginningOrbitNumber (#PCDATA)>
<!ELEMENT AggregateBeginningTime (#PCDATA)>
<!ELEMENT AggregateEndingDate (#PCDATA)>
<!ELEMENT AggregateEndingOrbitNumber (#PCDATA)>
<!ELEMENT AggregateEndingTime (#PCDATA)>
<!ELEMENT AggregateBeginningGranuleID (#PCDATA)>
```

<!ELEMENT AggregateEndingGranuleID (#PCDATA)>

4.0 NPOESS DATA PRODUCT METADATA

NPOESS Data Products are delivered as HDF5 files. Data within an HDF5 file is described by its metadata. Some of the metadata is used to describe the specifics of the data contained in the granule and is specific to a particular data set, while other metadata is more generic and is applicable to all data sets in the given file. In HDF5 terms, the metadata that is included in the HDF5 files are attributes of the objects in the file. For an overview of the NPOESS implementation of HDF5, see the JPSS CDFCB-X Vol. I, 474-00001-01.

4.1 Metadata Introduction

The elements included in the metadata are guided by the Federal Geographic Data Committee (FGDC), the Content Standard for Digital Geospatial Metadata (CSDGM), and the FGDC Extensions for Remote Sensing Metadata. For more information, see http://www.fgdc.gov.

The metadata contained herein applies to both NPP and NPOESS, unless specified otherwise.

4.2 Metadata-Naming Conventions

The following metadata-naming conventions are used:

- NPOESS metadata elements that are found in the FGDC metadata specification follow the FGDC-naming convention that separates most words with underscores (e.g., Instrument_Short_Name). In some cases, a hyphen is used for a delimiter.
- NPOESS metadata elements that are aggregate elements (see Table 4.4-4, Metadata Delivered in NPOESS Data Products HDF5 Files, for further description) are concatenated together with no delimiters (e.g., AggregateEndingDate).
- NPOESS metadata elements that have no FGDC metadata counterparts begin with ‘N_’ and follow the FGDC-naming conventions (e.g., N_Processing_Domain).

4.3 Metadata Angles

In order to help illustrate the various angles provided in the metadata, illustrations are provided in the following paragraphs.

4.3.1 Zenith Angles

Satellite and Solar Zenith Angles are defined as the angle between the local zenith (the

local vertical direction pointing away from the center of the earth) and the line of sight to the sat/sun respectively. Figure 4.3.1-1, Zenith Angles, provides a depiction of the angles used for the following metadata elements:

- N_Satellite/Local_Zenith_Angle_Min
- N_Satellite/Local_Zenith_Angle_Max
- N_Solar_Zenith_Angle_Min
- N_Solar_Zenith_Angle_Max

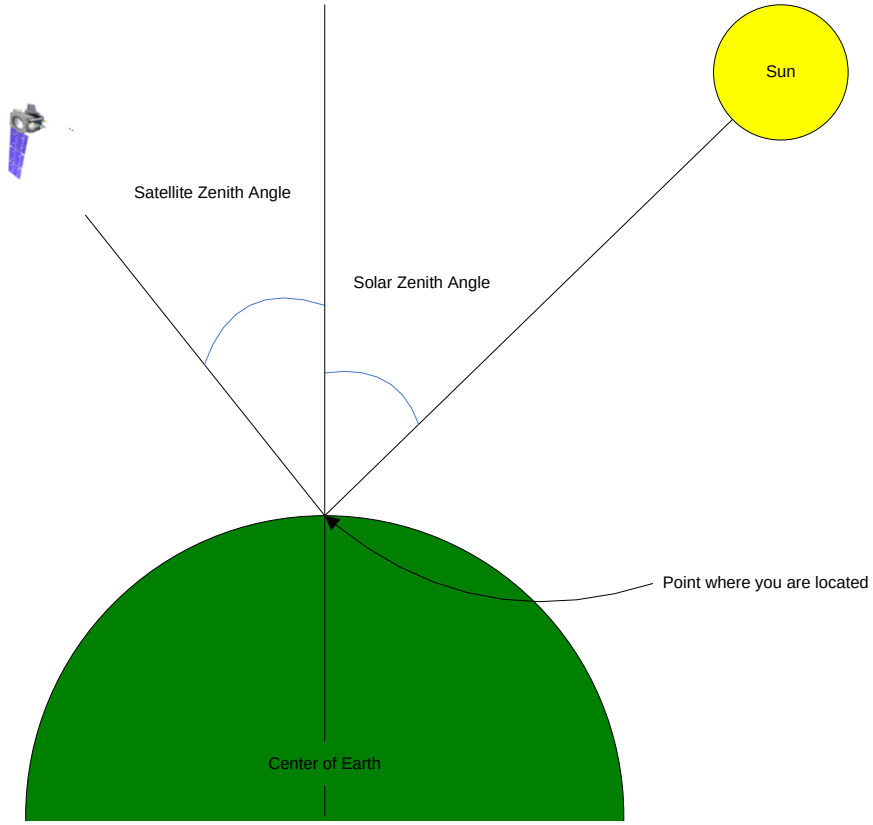

Figure 4.3.1-1, Zenith Angles

4.3.2 Azimuth Angles

Satellite and Solar Azimuth Angles are defined as the angle between the local azimuth (the direction measured around the horizon with positive from north to east) and north. Figure 4.3.2-1, Azimuth Angles, provides a depiction of the angles used for the following

metadata elements:

- N_Satellite/Local_Azimuth_Angle_Min
- N_Satellite/Local_Azimuth_Angle_Max
- N_Solar_Azimuth_Angle_Min
- N_Solar_Azimuth_Angle_Max

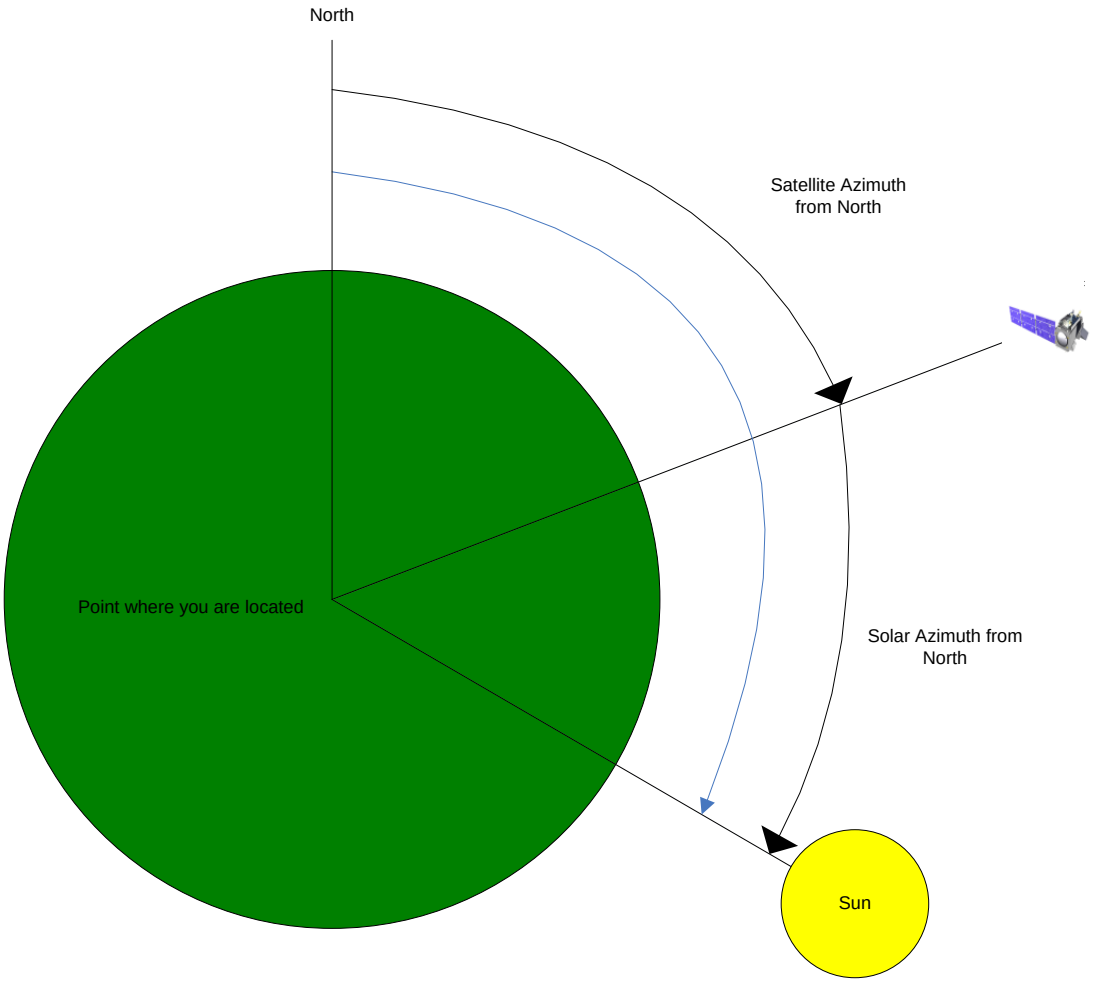

Figure 4.3.2-1, Azimuth Angles

4.4 Metadata Associated with NPOESS Data Products

This section provides information to be used with the NPP/NPOESS Data Products, Ancillary Data, and Auxiliary Data HDF5 descriptions. Table 4.4-1, HDF5 Generalized UML Diagrams, contains a listing of the volumes within the CDFCB-X where the generalized HDF5 Unified Modeling Language (UML) Diagrams can be found.

Table 4.4-1, HDF5 Generalized UML Diagrams

Product Model	CDFCB-X Volume
RDR	JPSS CDFCB-X Vol. II, 474-00001-02
SDR/TDR	JPSS CDFCB-X Vol. III, 474-00001-03
EDR/IP/ARP	JPSS CDFCB-X Vol. IV, Pt. I, 474-00001-04 (Parts 1 thru 4)
Geolocation	JPSS CDFCB-X Vol. I, 474-00001-01
Ancillary Data	JPSS CDFCB-X Vol. VI, 474-00001-06
Auxiliary Data	JPSS CDFCB-X Vol. VI, 474-00001-06

Table 4.4-4, Metadata Delivered in NPOESS Data Products, lists HDF5 metadata items that are used to describe NPOESS Data Products, Auxiliary Data, and Ancillary Data. IPs and ARPs are treated as EDRs with respect to product descriptions. Rows that are marked as being an Exception are unique metadata items which are repeated for each granule or reference file contained within the HDF5 file. The table is ordered alphabetically. The legend for Table 4.4-4, Metadata Delivered in NPOESS Data Products, is found in Table 4.4-3, NPOESS Data Product Metadata Table Legend. Some examples are provided in Table 4.4-2, Metadata Presentation Example.

For example, consider the metadata item, N_Dataset_Source. Table 4.4-4, Metadata Delivered in NPOESS Data Products, indicates that this element is located in the HDF5_File_RootGroup.The row for this element from Table 4.4-4, Metadata Delivered in NPOESS Data Products, is provided as an example in Table 4.4-2, Metadata Presentation Example. It is a character string, does not repeat, and is not part of the request criteria.

The second item in the example table, N_Number_Of_Scans, is an integer and can only be found in some SDR, TDR, EDR, IP, ARP, and GEO products. It is not found in RDRs

of any kind, Ancillary Data or Auxiliary Data. The comment in the “Applicable Values” column indicates that the integer must be greater than or equal to zero.

Table 4.4-2, Metadata Presentation Example

Name		RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
N_Dataset_Source		X	X	X	X	X	X		H5T_C_S1 (String)			For xDRs this indicates the producer/originator of the dataset. In the case of Ancillary and Auxiliary data files – this indicates the originator of the products using these datasets. Note: The originator of the HDF5 files	See the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4 for the applicable Origin Identifiers	R
N_Number_Of_Scans			X	X	X				H5T_NATIVE_INT (32-bit Integer)			This element indicates the actual number of scans that will be found in the data product.	Integer >= 0	G

Table 4.4-3, Legend for the NPOESS Data Product Metadata Table

Column Name	Description	Comments
Name	The name of the metadata element.	Element names pre-pended with a 'N_' are NPOESS specific metadata elements. Elements without the prefix are derived from the FDGC Base Standard with Remote Sensing Extensions. For elements that are found in the FGDC specification which are not unique, the parent element within the FGDC hierarchy is pre-pended to the name using a dot (.) as the delimiter.
RDR	"X" indicates that the element is used in relation to an RDR.	
SDR/TDR	"X" indicates that the element is used in relation to an SDR and/or TDR. These are treated as having the same associated metadata.	
EDR/IP/ARP	"X" indicates that the element is used in relation to an EDR/IP/ARP. These are treated as having the same associated metadata.	
GEO	"X" indicates that the element is associated with a geolocation granule. These granules provide the latitude and longitude of pixel elements of a corresponding sensor granule.	
AUX	"X" indicates that the element is used in relation to an auxiliary data element.	
ANC	"X" indicates that the element is used in relation to an ancillary data element.	
Exception	"X" indicates an element that is not present in all products – a notification to the reader to review the Definition and Applicable Values columns.	
HDF5 Data Type	This column indicates the HDF5 data type of the element.	For information about HDF5 and the HDF5 data types, see: http://hdf.ncsa.uiuc.edu
Repeating	"X" indicates an element may occur more than once.	Elements which are repeated in the HDF5 file are given as dataspaces, typed according to the element's specification. For those elements rendered via XML file, the elements are provided as comma-separated lists (strings), or as repeating element (as specified by the schema).
Request Criteria	"X" indicates an element that is part of the request criteria for data products.	

Column Name	Description	Comments
Definition	The definition, or explanation, of the metadata element.	
Applicable Values	The domain, or expected values, of the metadata element. The information annotated in the Applicable Values column includes information that is applicable to NPP and NPOESS. In some instances, there are possible values that are NPP or NPOESS only.	
HDF5 Hierarchy	Indicates the location that the metadata element may be located in the HDF5 NPOESS Data Products. This field may contain more than one designation due to the various file constructs and meaning. Applicable Value: R – File Root Group P – Product Group G – Product Granule Group A – Product Aggregation Group S – Spacecraft Diary Group (and Non-Science/Diagnostic RDRs) D – Spacecraft Diary Aggregation Group (and Non-Science/Diagnostic RDRs) E – Spacecraft Diary Granule Group (and Non-Science/Diagnostic RDRs) U – Included in XML User Block	

Table 4.4-4, Metadata Delivered in NPOESS Data Products

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
AggregateBeginningDate	X	X	X	X				H5T_C_S1 (String)			The date of the beginning of the temporal range coverage of the data contained in the product file. This element is used in conjunction with AggregateBeginningTime. Beginning date of the aggregation in an HDF file. This time is based on the earliest date found in the aggregation – based on the BeginningDate of the individual granules that are included in the aggregation The word 'aggregate' refers to the aggregation of granules contained in an HDF5 file. For the QST IP, this attribute is the date of the first day of the quarter for which the data applies.	Expressed as YYYYMMDD, where YYYY is the year, MM is the month and DD is the day. Example: 20131205	A, D, U
AggregateBeginningGranuleID	X	X	X	X				H5T_C_S1 (String)			GranuleID value at start of granule sequence in the HDF file. For the QST IP, this attribute is not applicable (= Default Value)	A valid GranuleID, per the N_Granule_ID definition. Example: NPP001212126373	A, D, U
AggregateBeginningOrbitNumber	X	X	X	X				H5T_NATIVE_ULONG (Unsigned 64-bit Integer)			Beginning orbit number of an aggregate in an HDF5 file. The orbit number is incremented at each ascending node equatorial crossing. Based on the N_Beginning_Orbit_Number of the earliest (first) granule included in the aggregation. For GCOM FOC A, the beginning orbit number will be 0 (zero).	Integer >= 0. AggregateBeginningOrbitNumber <= AggregateEndingOrbitNumber Example: 9	A, D, U

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											For the QST IP, this attribute is not applicable (= Default Value)		
AggregateBeginningTime	X	X	X	X				H5T_C_S1 (String)			The time of the beginning of the temporal range coverage of the data contained in the product file. This element is used in conjunction with AggregateBeginningDate. Beginning time of an aggregation in an HDF file. This time is based on the earliest time found in the aggregation – based on the BeginningTime of the individual granules that are included in the aggregation For the QST IP, this attribute is not applicable (= Default Value)	Expressed as HHMMSS.SSSSSSZ, where HH is hour, MM is minutes and SS.SSSSSS is seconds and decimal fractions of a second (with precision to one microsecond). This is Universal Time (UTC). Example: 101038.325248Z	A, D, U
AggregateEndingDate	X	X	X	X				H5T_C_S1 (String)			The date of the ending of the temporal range coverage of the data contained in the product file. This element is used in conjunction with AggregatedEndingTime. Ending date for an aggregate in an HDF file. This time is based on the latest date found in the aggregation – based on the EndingDate of the individual granules that are included in the aggregation. For the QST IP, this attribute is the date of the last day of the quarter for which the data applies.	Expressed as YYYYMMDD, where YYYY is the year, MM is the month and DD is the day. Example: 20131205	A, D, U

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
AggregateEndingGranuleID	X	X	X	X				H5T_C_S1 (String)			GranuleID value at the end of the granule sequence in the HDF file. This is an aggregate metadata element used in an HDF5 file. For the QST IP, this attribute is not applicable (= Default Value)	A valid GranuleID, per the N_Granule_ID definition. AggregateEndingGranuleID >= AggregateBeginningGranuleID. Example: NPP001212126373	A, D, U
AggregateEndingOrbitNumber	X	X	X	X				H5T_NATIVE_ULONG (Unsigned 64-bit Integer)			Ending orbit number of an aggregate in an HDF5 file. The word 'aggregate' refers to the aggregation of granules contained in an HDF5 file. The orbit number is assigned to a granule at the beginning of a granule. The orbit number is incremented at each ascending node equatorial crossing. If a granule applies to more than one orbit, the first orbit number associated to the last granule (temporal) in the aggregation is provided based on the N_Beginning_Orbit_Number of the latest (nth) granule included in the aggregation. For GCOM FOC A, the ending orbit number will be 0 (zero). This will be corrected in GCOM FOC B. For the QST IP, this attribute is not applicable (= Default Value)	Integer >= 0. AggregateEndingOrbitNumber >= AggregateBeginningOrbitNumber Example: 9	A, D, U
AggregateEndingTime	X	X	X	X				H5T_C_S1 (String)			The time of the ending of the temporal range coverage of the product data contained in the HDF5 file. Ending time for the aggregation in an HDF file.	Expressed as HHMMSS.SSSSSSZ, where HH is hour, MM is minutes and SS.SSSSSS is seconds and decimal fractions of a second (with precision to one microsecond). This is UTC. Example: 010116.809536Z	A, D, U

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											This time is based on the latest time found in the aggregation – based on the EndingTime of the individual granules that are included in the aggregation. For the QST IP, this attribute is not applicable (= Default Value)		
AggregateNumberGranules	X	X	X	X				H5T_NATIVE_ULONG (Unsigned 64-bit Integer)			Number of granules containing valid data (either partial data or complete data). Provides a count of the valid granules in the HDF5 file. For the QST IP, this attribute is not applicable (= Default Value)	Integer > 0 Example: 20	A, D
Ascending/Descending_Indicator		X	X	X				H5T_NATIVE_UCHAR (Unsigned 8-bit Character)			Flag indicating whether satellite is moving northward or southward. The center time of the granule is used for the determination of this value. For the QST IP, this attribute is not applicable (= Default Value)	0 = Ascending or northward, 1 = Descending or southward. Example: 0	G
Band_ID		X	X				X	H5T_C_S1 (String)			Designation for an individual measurement band This attribute is only applicable to the following products: SDRs: VIIRS I1-Band Imagery SDR (VIIRS-I1-SDR) VIIRS I2-Band Imagery SDR (VIIRS-I2-SDR) VIIRS I3-Band Imagery SDR (VIIRS-I3-SDR) VIIRS I4-Band Imagery SDR (VIIRS-I4-SDR) VIIRS I5-Band Imagery SDR (VIIRS-I5-SDR)	M1, M2, M3, M4, M5, M6, M7, M8, M9, M10, M11, M12, M13, M14, M15, M16, I1, I2, I3, I4, I5. Example: M2	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											VIIRS M1-Band Imagery SDR (VIIRS-M1-SDR) VIIRS M2-Band Imagery SDR (VIIRS-M2-SDR) VIIRS M3-Band Imagery SDR (VIIRS-M3-SDR) VIIRS M4-Band Imagery SDR (VIIRS-M4-SDR) VIIRS M5-Band Imagery SDR (VIIRS-M5-SDR) VIIRS M6-Band Imagery SDR (VIIRS-M6-SDR) VIIRS M7-Band Imagery SDR (VIIRS-M7-SDR) VIIRS M8-Band Imagery SDR (VIIRS-M8-SDR) VIIRS M9-Band Imagery SDR (VIIRS-M9-SDR) VIIRS M10-Band Imagery SDR (VIIRS-M10-SDR) VIIRS M11-Band Imagery SDR (VIIRS-M11-SDR) VIIRS M12-Band Imagery SDR (VIIRS-M12-SDR) VIIRS M13-Band Imagery SDR (VIIRS-M13-SDR) VIIRS M14-Band Imagery SDR (VIIRS-M14-SDR) VIIRS M15-Band Imagery SDR (VIIRS-M15-SDR) VIIRS M16-Band Imagery SDR (VIIRS-M16-SDR) EDRs: VIIRS I1-Band Imagery EDR (VIIRS-I1-IMG-EDR) VIIRS I2-Band Imagery EDR (VIIRS-I2-IMG-EDR) VIIRS I3-Band Imagery EDR (VIIRS-I3-		

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											IMG-EDR) VIIRS I4-Band Imagery EDR (VIIRS-I4-IMG-EDR) VIIRS I5-Band Imagery EDR (VIIRS-I5-IMG-EDR) VIIRS 1st Moderate Band Imagery EDR (VIIRS-M1ST-EDR) VIIRS 2nd Moderate Band Imagery EDR (VIIRS-M2ND-EDR) VIIRS 3rd Moderate Band Imagery EDR (VIIRS-M3RD-EDR) VIIRS 4th Moderate Band Imagery EDR (VIIRS-M4TH-EDR) VIIRS 5th Moderate Band Imagery EDR (VIIRS-M5TH-EDR) VIIRS 6th Moderate Band Imagery EDR (VIIRS-M6TH-EDR) For all other sensor products: N/A		
Beginning_Date	X	X	X	X	X			H5T_C_S1 (String)		X	Beginning date of the temporal range (observation date) for a granule. The corresponding metadata item, expressed in IET, is given by N_Beginning_Time_IET. For RDRs, the date provided is a predetermined value based on the granule collection. For the QST IP, this attribute is the date of the first day of the quarter for which the data applies. An overview of timestamps is provided in the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.5	Expressed as YYYYMMDD, YYYYMM, or YYYY – where YYYY is the year, MM is the month and DD is the day. Example: 20131205	G, E
Beginning_Time	X	X	X	X	X			H5T_C_S1		X	Beginning time of the temporal range	Expressed as HHMMSS.SSSSSSZ, HHMM, or	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
								(String)			(observation time) for a granule. The corresponding metadata item, expressed in IET, is given by N_Beginning_Time_IET. For RDRs, the time provided is a predetermined value based on the granule collection. For the QST IP, this attribute is not applicable (= Default Value) An overview of timestamps is provided in the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.5	HH - where HH is hour, MM is minutes and SS.SSSSSS is seconds and decimal fractions of a second (with precision to one microsecond). This is UTC. Example: 101038.325248Z	
Calendar_Date					X	X		H5T_C_S1 (String)			The date that the dataset was made available by its producer. Single date for AUX and ANC datasets.	Expressed as YYYYMMDD, where YYYY is the year, MM is the month, and DD is the day, all relative to UTC. Example: 20131205	G
Cloud_Cover			X				X	H5T_NATIVE_FLOAT (32-bit Floating Point)			Area of a dataset obstructed by clouds, expressed as a percentage of the number of clouds versus the total number of pixels. The information to create this value is obtained from the Parallax Corrected Cloud Mask RIP. Applied only to these VIIRS EDRs: Cloud Base Height (VIIRS-CBH-EDR) Cloud Cover/Layers (VIIRS-CCL-EDR) Cloud Effective Particle Size (VIIRS-CEP-EDR) Cloud Optical Thickness (VIIRS-COT-EDR) Cloud Top Height (VIIRS-CTH-EDR) Cloud Top Pressure (VIIRS-CTP-EDR) Cloud Top Temperature (VIIRS-CTT-EDR)	0.0% <= Cloud_Cover <= 100.0% Example: 24.0	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
Distributor	X	X	X	X	X	X		H5T_C_S1 (String)			This element designates the distributor of the data.	See the JPSS CDFCB-X Vol. I, 474-00001-01 Section 3.4 for the applicable Origin Identifiers Additional values: arch – distributed by the NPOESS Data Archive, the Comprehensive Large Array-data Stewardship System (CLASS) Note: CLASS will change the value to 'arch' only if the file is manipulated by CLASS in some manner. Example: noaa	R
East_Bounding_Coordinate		X	X	X				H5T_NATIVE_FLOAT (32-bit Floating Point)			The longitude of the point (in decimal degrees) in the coverage area furthest along an easterly direction from the center point of the granule. The North, South, East, and West bounding coordinates together form a tight bounding box around the coverage area with borders along the latitude and longitude lines. When the coverage area includes the north or south pole, the value will be 180°. The longitude of the point is based on the exit vectors which are assumed to be the center of a pixel. For the QST IP, this attribute is not applicable (= Default Value) For products without earth geolocated observations, (e.g. OMPS Calibration) this attribute is not applicable (= Default value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation. The presence of Fill Values are acceptable.	-180.0 <= EastBounding Coordinate <= 180.0 Example: 123.2	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
Ending_Date	X	X	X	X	X			H5T_C_S1 (String)		X	Ending date of the temporal range (observation date) for a granule. The corresponding metadata item, expressed in IET, is given by N_Ending_Time_IET. This is for individual granules only. For RDRs, the date provided is a predetermined value based on the granule collection. For the QST IP, this attribute is the date of the last day of the quarter. An overview of timestamps is provided in the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.5	Expressed as YYYYMMDD, YYYYMM, or YYYY – where YYYY is the year, MM is the month and DD is the day. Example: 20131205	G, E
Ending_Time	X	X	X	X	X			H5T_C_S1 (String)		X	Ending time of the temporal range (observation time) for a granule. The corresponding metadata item, expressed in IET, is given by N_Ending_Time_IET. This is for individual granules only. For RDRs, the time provided is a predetermined value based on the granule collection. For the QST IP, this attribute is not applicable (= Default Value) An overview of timestamps is provided in the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.5	Expressed as HHMMSS.SSSSSSZ, HHMM, or HH - where HH is hour, MM is minutes and SS.SSSSSS is seconds and decimal fractions of a second (with precision to one microsecond). This is UTC. Example: 010116.809536Z	G, E
G-Ring_Latitude		X	X	X				H5T_NATIVE_FL	X	X	The latitude(s), in decimal degrees, of a G-	-90.0 <= G-Ring_Latitude <= 90.0	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
								OAT (32-bit Floating Point)			Ring Point. A granule is described by four or more G-Ring Points describing the boundary of a granule. G-Ring points corresponding to granule boundaries are sequenced in a clockwise direction, starting with the first pixel of the last scan of a granule. The latitude of a G-Ring point that defines one point on the geographic boundary of a granule. Multiple G-Ring points are used to define the boundary. These values are numbered and connected in a clockwise fashion. Also, the connection is always the shortest distance between two points, whether that crosses the equator or not. Zero is the equator; positive is north of the equator. Note: the word 'Ring' denotes a closed boundary. The area bounded is any area defined by a polygon connecting multiple G-Ring points. For the QST IP, this attribute is not applicable (= Default Value) For products without earth geolocated observations, (e.g. OMPS Calibration) this attribute is not applicable (= Default value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.	Number of G-Ring Points by Sensor: VIIRS – 8 points CrIS – 8 points ATMS – 8 points CrIMSS – 8 points OMPS Nadir Profile – 8 points OMPS Total Column – 8 points Example: -38.017227	

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
G-Ring_Longitude		X	X	X				H5T_NATIVE_FLOAT (32-bit Floating Point)	X	X	The longitude(s), in decimal degrees, of a G-Ring Point. A granule is described by four or more G-Ring Points describing the boundary of a granule. G-Ring points corresponding to granule boundaries are sequenced in a clockwise direction, starting with the first pixel of the last scan of a granule. The longitude of a G-Ring point that defines one point on the geographic boundary of a granule. Multiple G-Ring points are used to define the boundary. These values are numbered and connected in a clockwise fashion. Also, the connection is always the shortest distance between two points, whether that crosses the dateline or not. Zero is the Greenwich meridian and is measured positive to the east. Note: The word 'Ring' denotes a closed boundary. The area bounded is any area defined by a polygon connecting multiple G-Ring points. For the QST IP, this attribute is not applicable (= Default Value) For products without earth geolocated observations, (e.g. OMPS Calibration) this attribute is not applicable (= Default value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.	-180.0 <= G-Ring_Longitude <= 180.0 Number of G-Ring Points by Sensor: VIIRS – 8 points CrIS – 8 points ATMS – 8 points CrIMSS – 8 points OMPS Nadir Profile – 8 points OMPS Total Column – 8 points Example: 75.37696	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
Instrument_Short_Name	X	X	X	X				H5T_C_S1 (String)			The short name, acronym, or other identifier by which the instrument is known.	See the JPSS CDFCB-X Vol. I, 474-00001-01 , Appendix D: For CrIMSS products (products created using CrIS and/or ATMS data), the following identifieris used: CrIMSS For spacecraft RDRs (Diary and Telemetry), the value is: SPACECRAFT Example: VIIRS	P, U, S
Mission_Name	X	X	X	X	X	X		H5T_C_S1 (String)			The character string by which the mission is known – identifies the name of the state of the mission.	NPP, NPOESS, NPP/NPOESS, GCOM-W Example: NPP	R, U
N_Algorithm_Version		X	X	X	X			H5T_C_S1 (String)			Indicates the version number of the algorithm that occurs as the result of an update to the code based on a PCR. The Algorithm Version also is updated in the VDD when the software release package is delivered. The Algorithm Version is further described in 474-00001-01 _B_JPSS CDFCB-X Vol. I Algorithm Version Convention. For the QST IP, this attribute is not applicable (= Default Value) For AUX data not created by the IDP, this element is populated with the default valued ("N/A"). For AUX data created by the IDP, this version indicates the software version produced the auxiliary product.	**<Phase_ID>.<Category_ID>.<Science Baseline ID>.<Software ID>** **<Phase_ID>**: Numeric sequence represents a particular phase of sustainment. Represented as an integer > 0. Example: 1 **<Category ID>**: Identifies what algorithm state or source this version applies to and where the full definition is found O: Official Interface Data Processing Segment (IDPS)/Data Processor Element (DPE) Operational Software (defined in config guides) D: Development or Prototype modifications of the IDPS/DPE operational code which may include Cal/Val prototype versions N: Non-DPE (off-line) software (which may include Algorithm Support Functions (ASF)). **<Science ID>**: Reference to changes in science basis documentation (e.g. Algorithm Theoretical Basis Document (ATBD), Operational Algorithm Document (OAD), Tech	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
												Memos) as approved by Algorithm Configuration Control Board (ACCB). **<Software ID>:** Reference to full definition of IDPS Code Variations. Intended to reference computer science changes of algorithms. Example: 1.O.001.002	
N_Anc_Filename		X	X	X				H5T_C_S1 (String)	X		Filename of the Ancillary data files used in the processing of an EDR. Filename is the ancillary filename without an extension Blank is an acceptable result	File name is created using the NPOESS file naming convention for Ancillary data – see the JPSS CDFCB-X Vol. I, 474-00001-01 , for the file-naming convention. Example: off_ NCEP-GFS-06HR-ANC_GFS_NCEP_006f_20100304_201003041315Z_20100305140000Z_ee20100321000000Z_np	G
N_Anc_Type_Tasked			X	X				H5T_C_S1 (String)			The designation of the type of Ancillary data (official vs. substitute) used in an EDR computation.	Official, or Substitute Example: Official	P
N_Aux_Filename		X	X	X	X		X	H5T_C_S1 (String)	X		File name of the Auxiliary data used in the processing of an SDR, TDR, EDR, Deliverable IP, ARP, or AUX. Filename is the auxiliary filename without an extension Note that for VIIRS-RSBAUTOCAL-HISTORY-AUX products, the previous version of the product is not required to be listed in this metadata item. Exception: Non-products AUX files (i.e. Mission Schedule AUX files)	File name is created using the NPOESS file naming convention for Auxiliary data – see the JPSS CDFCB-X Vol. I, 474-00001-01 , for the file-naming convention. Example: CMNGEO-PARAM-LUT_npp_20111101010000Z_20111101010000Z_ee00000000000000Z_PS-1-N-CCR-11-216-NGAS-002-PE-_noaa_all_all-_all,CrIS-Correct-Matrix-AUX_npp_20140626181427Z_20121111234648Z_ee00000000000000Z_-_devl_ops_all-_ops,CrIS-SDR-CC_npp_20130701000000Z_20130821000000Z_ee00000000000000Z_PS-1-O-CCR-13-1108-NGAS-JPSS-DPA-003-PE_noaa_all_all-_all,CrIS-SDR-DQTT_npp_20020101010000Z_200201010100	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
												00Z_ee00000000000000Z_BASELINE-MON-1_devl_dev_noaa_ops,CrIS-SDR-FILL-PACKET-LUT_npp_20020101010000Z_20020101010000Z_ee00000000000000Z_PS-1-D-NPP-1-PE-_devl_dev_all-_all,TLE-AUX_npp_20121109162031Z_20121109000015Z_ee00000000000000Z_-_c3s-_ops_all-_ops,CrIS-Correct-Matrix-AUX_npp_20140626182912Z_20121112001400Z_ee00000000000000Z_-_devl_ops_all-_ops	
N_Beginning_Orbit_Number	X	X	X	X				H5T_NATIVE_ULONG (Unsigned 64-bit Integer)		X	The number of the orbit at the start of the data collection for a data granule. The orbit number is incremented at each ascending node equatorial crossing If the Revolution Table information is not available (or if this attribute is not applicable to the product), 0 will be used. For Fill granules in an aggregation, the default metadata value of 993 will be used for SW versions prior to I1.5.06. A default metadata value of 0 will be used for SW versions I1.5.06 and later. For GCOM FOC A, the beginning orbit number will be 0 (zero). This will be corrected in GCOM FOC B. For the QST IP, this attribute is not applicable (= 0)	Integer >= 0 Examples: 0 9 993 1024	G, E
N_Beginning_Time_IET	X	X	X	X	X			H5T_NATIVE_ULONG (Unsigned 64-bit Integer)			The time of the beginning of the temporal range of the data contained in the granule, expressed in IET. The corresponding time in UTC time is given by the pair, Beginning_Date, Beginning_Time. For RDRs, the date provided is a predetermined value based on the granule	A count of the integer number of microseconds since Epoch date/time of 1/1/58, 12:00 AM. Example: 1422180670325248	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											collection. For the QST IP, this attribute is not applicable (= Default Value) An overview of timestamps is provided in the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.5		
N_Collection_Short_Name	X	X	X	X	X	X		H5T_C_S1 (String)		X	The reference name of the collection of data sets. Datasets include NPOESS Data Products, Official Dynamic Ancillary Data, Auxiliary Data, and IDP/FT datasets	See the JPSS CDFCB-X Vol. I, 474-00001-01 , Appendix A for the applicable Collection Short Names Example: VIIRS-I2-IMG-EDR	P, G, S, U
N_Creation_Date	X	X	X	X				H5T_C_S1 (String)			The date when a specific dataset was produced. Paired with N_Creation_Time	CreationDate > 20050101 Expressed in as YYYYMMDD, where YYYY is the year, MM is the month and DD is the day. Example: 20050320	G, E
N_Creation_Time	X	X	X	X				H5T_C_S1 (String)			The time when a specific dataset was produced. Paired with N_Creation_Date	0 <= CreationTime < 24 hours Expressed as HHMMSS.SSSSSSZ, where HH is hour, MM is minutes and SS.SSSSSS is seconds and decimal fractions of a second (with precision to one microsecond). This is UTC. Example: 010116.809536Z	G, E
N_Dataset_Source	X	X	X	X	X	X		H5T_C_S1 (String)			The producer of the HDF5 files.	See the JPSS CDFCB-X Vol. I, 474-00001-01 Section 3.4 for the applicable Origin Identifiers Example: noaa	R
N_Dataset_Type_Tag	X	X	X	X	X	X		H5T_C_S1 (String)			Identifies the type of dataset.	RDR, SDR, TDR, EDR, ARP, ANC, AUX, IP, GEO, TLM_SDR Example: EDR	P, G, S, U
N_Day_Night_Flag		X	X	X			X	H5T_C_S1 (String)			Identifies if the pixels in a granule were collected during the Operational Day Mode, Night Mode, or both, based on the sensor mode.	Day, Night, Both Example: Day	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											The value of this element is determined by the VIIRS sensor mode as reported in the Engineering data for each scan within the entire granule. If the scans were collected in different modes, the value will indicate this. VIIRS products are only produced when the sensor is in the Operational Modes. For information on the specific modes of a scan, see the ModeScan data element in the VIIRS SDR products. Exception: This metadata attribute is for VIIRS products only with the exception of the QST IP.		
N_Ending_Time_IET	X	X	X	X	X			H5T_NATIVE_ULONG (Unsigned 64-bit Integer)			The time of the ending of the temporal range of data contained in the granule, expressed in IET. The corresponding UTC time is given by the pair, Ending_Date, Ending_Time. For RDRs, the date provided is a predetermined value based on the granule collection. For the QST IP, this attribute is not applicable (= Default Value) An overview of timestamps is provided in the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.5	A count of the integer number of microseconds since Epoch date/time of 1/1/58, 12:00 AM. Example: 1422180698809536	G, E
N_GEO_Ref		X	X				X	H5T_C_S1 (String)			Filename of the HDF5 file containing the related Geolocation information. Exception: This attribute is only used in those cases where the geolocation information for a particular data product is	Filename is created using the NPOESS file naming convention for NPOESS Data Products – see the JPSS CDFCB-X Vol. I, 474-00001-01 , for the file-naming convention. Example:	R, U

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											packaged separately.	GIGTO_npp_d20030311_t1400000_e1430000_b12345_c20030311153000000000_navo_dev.h5	
N_Graceful_Degradation		X	X					H5T_C_S1 (String)			Indicates that 1) One or more primary inputs necessary for the computation of the product were not available and an alternate input was used 2) One or more NPOESS/NPP Data Products used as input for the computation of the product were marked as Gracefully Degraded If the Primary input dataset is not available, and an alternate dataset is used, the alternate input dataset used will be listed as part of the N_Anc_Filename and/or N_Input_Prod metadata elements.	Yes = EDR computation is subject to graceful degradation. No = EDR is not subject to graceful degradation (normal computation). Example: No	G
N_Granule_ID	X	X	X	X				H5T_C_S1 (String)			The unique identifier for each RDR granule composed of the concatenation of two components: (1) The three character satellite identifier [alias “Platform_Short_Name”], (2) A zero left filled, 12 character number, specifying the number of tenths of a second since Spacecraft Base Time, a time near launch. The same granule identifier that is applied to the RDR granule is also used for the SDR/TDR and EDR/IP/ARP granules that result. The combination of N_Granule_ID, N_Collection_Short_Name, and the N_Granule_Version uniquely identifies each granule in the IDPS. For the QST IP, this attribute is not applicable (= Default Value)	A 15 character string, where the first three characters have allowable values of NPP, N01, N02, N03, or GW1. The next 12 characters have allowable values of 1 through 999999999999, although the maximum number will not be achieved during the life of a spacecraft. Example: NPP001212126658	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
N_Granule_Status	X	X	X	X				H5T_C_S1 (String)			Identifies missing granules in an HDF5 file and provides reason. Day Only SDR Products: VIIRS-M1-SDR VIIRS-M2-SDR VIIRS-M3-SDR VIIRS-M4-SDR VIIRS-M5-SDR VIIRS-M6-SDR VIIRS-M9-SDR VIIRS-M11-SDR VIIRS-I1-SDR VIIRS-I2-SDR VIIRS-I3-SDR Day Only EDR Products: VIIRS-Aeros-EDR VIIRS-I1-IMG-EDR VIIRS-I2-IMG-EDR VIIRS-I3-IMG-EDR VIIRS-M1ST-EDR (M1 band, See Note) VIIRS-M2ND-EDR (M4 band, See Note) VIIRS-M3RD-EDR (M9 band, See Note) VIIRS-OCC-EDR VIIRS-SA-EDR VIIRS-SCD-BINARY-SNOW-MAP-EDR VIIRS-SCD-BINARY-SNOW-FRAC-EDRVIIRS-SusMat-EDR VIIRS-VI-EDR Day Only Retained IPs VIIRS-AEROS-Modl-Info-IP	Possible Values are: Missing at delivery time 100% night for day only product Variable Granule Length = 0 N/A	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											VIIRS-Bright-Pixel-Mod-IP VIIRS-Surf-Refl-IP Note: Depending upon the configuration of the IDP, some VIIRS-M1ST-EDR through VIIRS-M6TH-EDR may be day only products. The ones listed above reflect the current configuration. For additional information on Fill Values and Missing Data – see the CDFCB-X Vol. I, 474-00001-01. For the QST IP, this attribute is not applicable (= Default Value)		
N_Granule_Version	X	X	X	X				H5T_C_S1 (String)			Indicates the version number of the granule that occurs as the result of an automatic repair of a granule, an IDPS operator commanded re-execution of a granule, or a manual execution of a granule. This element provides the state of the version (Automatic execution, Commanded re-execution, or Manual execution and allowable combinations thereof) along with identification number. For the QST IP, this attribute is not applicable (= Default Value)	For RDRs: A[1..n] The 1..n value is incremented every time the granule is updated For all other granules: $A[1..n][C\|M]^{0..1}[Identifier]^{0..1}[.s]^{0..1}$ M – appended if the granule had to be created, due to the fact that it did not already exist – considered to be a manual execution of a granule that has not been processed C – appended if the granule is recreated (already exists), this value will always be followed by an identifier Identifier – 64-bit integer representing the PID of the granule .s – appended to indicate that single processing chain was instantiated (e.g., ATMS ReMap SDR -> CrIMSS EDR chain, only the ATMS ReMap SDR is produced) Examples: A1, A1M, A1C	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
N_HDF_Creation_Date	X	X	X	X	X	X		H5T_C_S1 (String)			The date that the HDF5 file was created. Paired with N_HDF_Creation_Time	CreationDate > 20050101 Expressed as YYYYMMDD, where YYYY is the year, MM is the month and DD is the day. Example: 20050304	R
N_HDF_Creation_Time	X	X	X	X	X	X		H5T_C_S1 (String)			The time that the HDF5 file was created Paired with N_HDF_Creation_Date.	0 <= CreationTime < 24 hours Expressed as HHMMSS.SSSSSSZ, where HH is hour, MM is minutes, and SS.SSSSSS is seconds and decimal fractions of a second (with precision to one microsecond). This is UTC. Example: 010116.809536Z	R
N_Input_Prod		X	X	X				H5T_C_S1 (String)	X		Product input pointer. Provides the list of inputs into the algorithm that produces a particular data product. Uses the N_Reference_ID of the input data products. This element only contains the N_Reference_IDs of the data products, it does not contain references to Ancillary or Auxiliary Data input. QST IP: Contains the N_Reference_ID of the data product files used in the creation of the QST IP HDF5 file.	An array of strings containing N_Reference_IDs. Example: ZZZ05567890ABCD01020304VNCD25678	G
N_Instrument_Flight_SW_Version		X	X					H5T_NATIVE_INT (32-bit Integer)	X		Provides the instrument flight software version	An integer value as provided from the spacecraft. Representation is as follows: ATMS - 4 bit integer CrIS - 11 bit integer OMPS - 16 bit integer VIIRS - 16 bit integer For CrIMSS Products, the CrIS and ATMS versions are provided using the following convention:	P

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
												1. If both exist, the CrIS and ATMS are provided – 11 bit integer for CrIS followed by the 4 bit integer for ATMS (this is a repeating element) 2. If CrIS or ATMS or missing, a default value of -993 is used in place of the version The associated instrument name is provided by the Instrument_Short_Name metadata element. Example: 0	
N_LEOA_Flag	X	X	X	X				H5T_C_S1 (String)			Defines LEOA (Launch, Early Operations, and Activation) state for each applicable NPP/NPOESS Data Product on a product by product basis. Set to " On" during LEOA state for an NPP/NPOESS Data Product. Set to "Off " for each NPOESS Data Product that is operating normally (not in LEO A). For the QST IP, this attribute is not applicable (= Default Value)	For each applicable instrument on each platform: "On" = LEOA state, "Off" = Not LEOA State. Corresponding spacecraft is provided by Platform_Short_Name. Corresponding sensor is provided by Instrument_Short_Name. Corresponding product is provided by N_Collection_Short_Name. Example: Off	G, E
N_Nadir_Latitude_Max		X	X	X				H5T_NATIVE_FLOAT (32-bit Floating Point)			Latitude of Nadir ground point, max over granule, expressed in decimal degrees. For the QST IP, this attribute is not applicable (= Default Value)	-90.0 <= NadirLatitude <= 90.0 Example: -40.42816	G
N_Nadir_Latitude_Min		X	X	X				H5T_NATIVE_FLOAT (32-bit Floating Point)			Latitude of Nadir ground point, min over granule, expressed in decimal degrees For the QST IP, this attribute is not applicable (= Default Value)	-90.0 <= NadirLatitude <= 90.0 Example: -41.982155	G
N_Nadir_Longitude_Max		X	X	X				H5T_NATIVE_FL			Longitude of Nadir ground point, max over	-180.0 <= NadirLongitude < 180.0	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
								OAT (32-bit Floating Point)			granule, expressed in decimal degrees For the QST IP, this attribute is not applicable (= Default Value)	Example: 58.263794	
N_Nadir_Longitude_Min		X	X	X				H5T_NATIVE_FLOAT (32-bit Floating Point)			Longitude of Nadir ground point, min over granule, expressed in decimal degrees. For the QST IP, this attribute is not applicable (= Default Value)	-180.0 <= NadirLongitude < 180.0 Example: 57.730972	G
N_NPOESS_Document_Ref	X	X	X	X			X	H5T_C_S1 (String)	X		Provides an array of strings containing the filename of the documentation relevant to the algorithm that produced the particular data product – includes CDFCB-X, NPOESS Data Product Profile XML, and OAD filenames Exception: RDRs do not have XML Product Profiles or OADS associated with them.	Array of file names – see the JPSS CDFCB-X Vol. I, 474-00001-01 , for the relevant conventions. Example: 474-00001-01 _JPSS CDFCB-X-Vol.-I-Overview_A_20100415_ I1.5.02.pdf	G, E
N_Number_Of_Scans		X	X	X				H5T_NATIVE_INT (32-bit Integer)			This element indicates the actual number of scans that will be found in the data product. For the QST IP, this attribute is not applicable (= Default Value)	Integer >= 0	G
N_Packet_Type	X							H5T_C_S1 (String)	X		Defines the type of data contained in the packet that is contributing to the RDR granule. There is a PacketType paired (by array index) with each PacketCount. There may be multiple occurrences of this pairing of metadata item per granule.	Each individual Packet has an associated APID Short Name. These short names are provided with the descriptions of the RDRs in the JPSS CDFCB-X Vol. II-RDRs, 474-00001-02 . Examples: M01, SCI, CAL, ENG	G, E
N_Packet_Type_Count	X							H5T_NATIVE_ULONG (Unsigned 64-bit Integer)	X		The number of packets with each PacketType contained in the granule. There is a PacketCount paired (by array index) with each PacketType. There are multiple occurrences of this pairing of metadata item per granule.	Integer value >= 0 Example: 22	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
N_Percent_Erroneous_Data		X	X				X	H5T_NATIVE_FLOAT (32-bit Floating Point)			Percent of data in the granule where pixels cannot be computed due to errors in the data. In the erroneous data situation, data is present but a computation cannot be performed due to a detectable error. Erroneous data is represented with by the 'Cannot Calculate' Data Fill pattern – see the JPSS CDFCB-X Vol. I, 474-00001-01 , for applicable Fill Values. This value is calculated across all data arrays included in a granule, excluding quality flags and scale factors Note: this calculation also excludes the following the fill patterns: Does Not Exist Onboard Pixel Trim On-Ground Pixel Trim Computed as: (Number of Erroneous Pixels / Total Number of Pixels) x 100 Exception: Does not apply to those products listed below which contain only bit-level data: VIIRS Cloud Mask (VIIRS-CM-IP) VIIRS Active Fires (VIIRS-AF-EDR) VIIRS Parallax Corrected Cloud Mask IP (VIIRS-Parx-Corr-CM-IP), VIIRS Ice Quality Flags IP (VIIRS-I-Qual-Flags-IP), VIIRS Aerosol Model Information IP (VIIRS-Aeros-Modl-Info-IP), VIIRS Snow Cover/Depth Binary Snow Map EDR (VIIRS-SCD-BINARY-SNOW-MAP-EDR) QST IP (Quarterly-ST-IP)	0.0 <= N_Percent_Erroneous_Data <= 100.0 Example: 0.0	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											VIIRS Bright Pixel IP (VIIRS-Bright-Pixel-Mod-IP)		
N_Percent_Missing_Data	X	X	X				X	H5T_NATIVE_FLOAT (32-bit Floating Point)			Percentage of missing data in the granule. Missing data is represented by the Missing at Time of Processing Data Fill pattern – see the JPSS CDFCB-X Vol. I, 474-00001-01 , for applicable Fill Values. For RDRs, this value is the percentage of packets missing from the expected number for the RDR. For some RDR types, the expected number is static to support worst case timing or asynchronous packet types. The static value is calculated from values in IDPS Configuration Guides. Other RDR types account for dynamic components such as timestamp variability, Day vs Night mode differences, and temporary modes. For these RDRs, the number of expected packets starts with the configuration guide calculation and is adjusted as data is received to account for the state of these components. For SDR/TDRs and EDR/IP/ARPs this value is precise and is calculated across all data arrays included in a granule, excluding quality flags and scale factors Note: this calculation also excludes the following the fill patterns: Does Not Exist Onboard Pixel Trim On-Ground Pixel Trim Computed as: (Number of Missing Pixels / Total Number of Pixels) x 100 Exception: Does not apply to those products	0.0 <= N_Percent_Missing_Data <= 100.0 Example: 0.0	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											listed below which contain only bit-level data: VIIRS Cloud Mask (VIIRS-CM-IP) VIIRS Active Fires (VIIRS-AF-EDR) VIIRS Parallax Corrected Cloud Mask IP (VIIRS-Parx-Corr-CM-IP), VIIRS Ice Quality Flags IP (VIIRS-I-Qual-Flags-IP), VIIRS Aerosol Model Information IP (VIIRS-Aeros-Modl-Info-IP), VIIRS Snow Cover/Depth Binary Snow Map EDR (VIIRS-SCD-BINARY-SNOW-MAP-EDR) Also does not apply to the QST IP (Quarterly-ST-IP) where the data is simply carried forward from the previous QST IP. VIIRS Bright Pixel IP (VIIRS-Bright-Pixel-Mod-IP)		

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
N_Percent_Not-Applicable_Data		X	X				X	H5T_NATIVE_FLOAT (32-bit Floating Point)			Percent of data in the granule where pixels cannot be computed due to non-applicable collection conditions. e.g., VIIRS day channels at night, no snow, no ice, no land, etc. The missing data is represented by the Algorithm Exclusion Data Fill pattern – see the JPSS CDFCB-X Vol. I, 474-00001-01 , for applicable Fill Values. Note: this calculation also excludes the following the fill patterns: Does Not Exist Onboard Pixel Trim On-Ground Pixel Trim Computed as: (Number of Not-Applicable Pixels / Total Number of Pixels) x 100 Note: Does not apply to those products listed below which contain only bit-level data: VIIRS Cloud Mask (VIIRS-CM-IP) VIIRS Active Fires (VIIRS-AF-EDR) VIIRS Parallax Corrected Cloud Mask IP (VIIRS-Parx-Corr-CM-IP) VIIRS Ice Quality Flags IP (VIIRS-I-Qual-Flags-IP) VIIRS Aerosol Model Information IP (VIIRS-Aeros-Modl-Info-IP) VIIRS Snow Cover/Depth Binary Snow Map EDR (VIIRS-SCD-BINARY-SNOW-MAP-EDR) Also does not apply to the QST IP (Quarterly-ST-IP) where the data is simply carried forward from the previous QST IP. VIIRS Bright Pixel IP (VIIRS-Bright-Pixel-Mod-IP)	0.0 <= N_Percent_Not-Applicable_Data <= 100.0 Example: 75.80124	G
N_Processing_Domain	X	X	X	X	X	X		H5T_C_S1			Identifier of the Processing Domain that generated the product. This identifier is used	See the JPSS CDFCB-X Vol. I, 474-00001-01 , Section 3.4 for applicable domains.	P, G, S, U

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
								(String)			internally by the NPOESS Program. For users of data from the archive, this attribute will be ops	Example: ops	
N_Quality_Summary_Names		X	X	X				H5T_C_S1 (String)	X		Element that provides the name of the granule quality summary flag(s) for a specific granule. This element has a 1:1 correspondence (by array index) to the N_Quality_Summary_Values element, which provides the corresponding value. Each summary quality flag included in this metadata element is specific to a product and is indicated in the data format definition of the relevant product in the JPSS CDFCB-X Vol. IV- EDR/IP/ARP, 474-00001-04 and Vol III for SDRs/TDRs 474-00001-03.	See the relevant data format definition for a given NPOESS Data Product for the elements provided for a specific data product Example: Summary Imagery Quality	G
N_Quality_Summary_Values		X	X	X				H5T_NATIVE_INT (32-bit Integer)	X		Element that provides the value of the granule quality summary flag(s) for a specific granule. This element has a 1:1 correspondence (by array index) to the N_Quality_Summary_Names element, which provides the corresponding name. Each summary quality flag included in this metadata element is specific to a product and is indicated in the data format definition of the relevant product in the CDFCB-X.	See the relevant data format definition for a given NPOESS Data Product for the elements provided for a specific data product Example: 75	G
N_Reference_ID	X	X	X	X	X	X		H5T_C_S1 (String)			The unique identifier for NPOESS Data Product granules, Auxiliary files, and Ancillary files. For the QST IP, this attribute is not applicable (= Default Value)	A unique identifier consisting of a 32-character string. Example: 43132603-11104-9b9dea63-deb2216a	G, E

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
N_RSB_Index		X						H5T_NATIVE_INT (32-bit Integer)			This metadata item shows the RSB Auto Cal History Aux file index from which the data was drawn for the SDR. This index is not applicable when RSB Auto Cal processing is disabled.	Applicable values are 0 –19, or the NA Fill value when RSB AutoCal processing is disabled This metadata item is only produced for VIIRS SDRs.	G
N_Satellite/Local_Azimuth_Angle_Max		X	X					H5T_NATIVE_FLOAT (32-bit Floating Point)			The angle at the viewed point, measured in the horizontal plane at the viewed point, between the north direction and the direction to the satellite, measured in degrees eastward from north. Maximum value over the granule. For the QST IP, this attribute is not applicable (= Default Value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.	-180.0 <= N_Satellite/Local_Azimuth_Angle_Max <= 180.0 N_Satellite/Local_Azimuth_Angle_Min >= N_Satellite/Local_Azimuth_Angle_Max Example: 143.2	G
N_Satellite/Local_Azimuth_Angle_Min		X	X					H5T_NATIVE_FLOAT (32-bit Floating Point)			The angle at the viewed point, measured in the horizontal plane at the viewed point, between the north direction and the direction to the satellite, measured in degrees eastward from north. Minimum value over the granule. For the QST IP, this attribute is not applicable (= Default Value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.	-180.0 <= N_Satellite/Local_Azimuth_Angle_Min <= 180.0 N_Satellite/Local_Azimuth_Angle_Min <= N_Satellite/Local_Azimuth_Angle_Max Example: 86.3	G
N_Satellite/Local_Zenith_Angle_Max		X	X					H5T_NATIVE_FLOAT (32-bit Floating Point)			The angle at the viewed point between the zenith at the viewed point and the satellite, in degrees. Maximum value over the granule. For the QST IP, this attribute is not applicable (= Default Value)	0.0 <= N_Satellite/Local_Zenith_Angle_Max <= 180.0 N_Satellite/Local_Zenith_Angle_Min >= N_Satellite/Local_Zenith_Angle_Max Example: 69.7	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.		
N_Satellite/Local_Zenith_Angle_Min		X	X					H5T_NATIVE_FLOAT (32-bit Floating Point)			The angle at the viewed point between the zenith at the viewed point and the satellite, in degrees. Minimum value over the granule. For the QST IP, this attribute is not applicable (= Default Value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.	0.0 <= N_Satellite/Local_Zenith_Angle_Min <= 180.0 N_Satellite/Local_Zenith_Angle_Min <= N_Satellite/Local_Zenith_Angle_Max Example: -98.2	G
N_Software_Version	X	X	X	X	X			H5T_C_S1 (String)			Version of IDPS software that created the Data Product. For the RDR, SDR, TDR, EDR, IP, ARP, and GEO products – this value is provided at the granule level. For Auxiliary files, this element is provided at the root of the HDF5 file. For AUX data not created by the IDP, this version indicates the software version that packaged and delivered the data. QST IP: Version of the software that produced the QST IP.	The IDPS software version is provided as defined in the JPSS CDFCB-X Vol. I, 474-00001-01 , Section 3.4 Example: I1.5.03.04	R, G, E
N_Solar_Azimuth_Angle_Max		X	X					H5T_NATIVE_FLOAT (32-bit Floating Point)			The angle at the viewed point, measured in the horizontal plane at the viewed point, between the north direction and the direction of the Sun, measured in degrees eastward from north. Maximum value over the granule. For the QST IP, this attribute is not applicable (= Default Value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no	-180.0 degrees <= N_Solar_Azimuth_Angle_Max <= 180.0 degrees N_Solar_Azimuth_Angle_Min <= N_Solar_Azimuth_Angle_Max Example: -24.3	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											associated geolocation.		
N_Solar_Azimuth_Angle_Min		X	X					H5T_NATIVE_FLOAT (32-bit Floating Point)			The angle at the viewed point, measured in the horizontal plane at the viewed point, between the north direction and the direction of the Sun, measured in degrees eastward from north. Minimum value over the granule. For the QST IP, this attribute is not applicable (= Default Value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.	-180.0 degrees <= N_Solar_Azimuth_Angle_Min <= 180.0 degrees N_Solar_Azimuth_Angle_Min <= N_Solar_Azimuth_Angle_Max Example: -45.3	G
N_Solar_Zenith_Angle_Max		X	X					H5T_NATIVE_FLOAT (32-bit Floating Point)			The angle at the viewed point between the zenith at the viewed point and the Sun, in degrees. Maximum value over the granule. For the QST IP, this attribute is not applicable (= Default Value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.	0.0 <= SolarZenithAngle <= 180.0 Solar_Zenith_Angle_Min <= Solar_Zenith_Angle_Max Example: 35.3	G
N_Solar_Zenith_Angle_Min		X	X					H5T_NATIVE_FLOAT (32-bit Floating Point)			The angle at the viewed point between the zenith at the viewed point and the Sun, in degrees. Minimum value over the granule. For the QST IP, this attribute is not applicable (= Default Value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation.	0.0 <= SolarZenithAngle <= 180.0 Solar_Zenith_Angle_Min <= Solar_Zenith_Angle_Max Example: 143.2	G
N_Spacecraft_Maneuver		X	X	X				H5T_C_S1 (String)			Defines the status of the Spacecraft maneuver as it applies to the Granule. This only applies to maneuvers (Reaction Wheel or Thruster controlled) that result in significant movement of the Spacecraft and does not include Reaction Wheel based	Ordered from lowest to highest impact: Normal Operations Orbit Correction Maneuver Calibration Maneuver Unknown	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
											adjustments to maintain nominal attitude. If multiple Maneuvers apply to a granule, the metadata indicates the Maneuver with the most impact to the quality of the data product. For the QST IP, this attribute is not applicable (= Default Value)	Example: Normal Operations	
North_Bounding_Coordinate		X	X	X				H5T_NATIVE_FLOAT (32-bit Floating Point)			The latitude of the point (in decimal degrees) in the coverage area furthest along a northerly direction from the center point of the granule. The North, South, East, and West bounding coordinates together form a tight bounding box around the coverage area with borders along the latitude and longitude lines. When the coverage area includes the north pole, the value will be +90° and the bounding box will consist of the top slice of a sphere. The latitude of the point is based on the exit vectors which are assumed to be the center of a pixel. For the QST IP, this attribute is not applicable (= Default Value) For products without earth geolocated observations, (e.g. OMPS Calibration) this attribute is not applicable (= Default value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation. The presence of Fill Values are acceptable.	-90.0 <= NorthBoundingCoordinate <= 90.0 NorthBoundingCoordinate >= SouthBoundingCoordinate. Example: 34.2	G
Operational_Mode		X	X	X				H5T_C_S1			The mode in which the spacecraft and instrument is functioning, when mission data	Operational modes are provided for Spacecraft-Instrument combinational modes that output	P

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
								(String)			is being generated. If multiple modes apply to the data in the product, all modes are listed. Operational_Mode is a combination of Spacecraft, Spacecraft Mode, Sensor, Sensor Mode For fused products (e.g. CrIMSS), the sensor mode of the input sensors (e.g. ATMS and CrIS) are used. For the QST IP, this attribute is not applicable (= Default Value)	mission data. Format: <SC> <SC Mode>, <Sensor> <Sensor Mode> or <SC> <SC Mode>, <Sensor1> <Sensor Mode1>, <Sensor2> <Sensor Mode2> <SC> is based on Platform_Short_Name <SC Mode> is based on N_Spacecraft Maneuver as follows: • If Maneuver = Normal Operations, <SC Mode> = Normal Operations • If Maneuver = Calibration Maneuver, <SC Mode> = Calibration Maneuver • If Maneuver = Orbit Correction Maneuver, <SC Mode> = Orbit Correction Maneuver • If Maneuver = Unknown, <SC Mode> = Unknown <Sensor> is based on Instrument Short Name <Sensor Mode> is based on the Mode Telemetry from the Sensor as follows: • Operational – All sensors • Calibration – OMPS TC and OMPS NP only • Diagnostic – CrIS, ATMS, and “CrIS and ATMS” for CrIMSS only • Operational and Diagnostic - CrIS, ATMS, and “CrIS and ATMS” for CrIMSS only • Unknown – All Sensors Examples: NPP Normal Operations, VIIRS Operational NPP Calibration Maneuver, OMPS-TC Calibration NPP Normal Operations, ATMS Operational and Diagnostic, CrIS Diagnostic	
Platform_Short_Name	X	X	X	X	X			H5T_C_S1 (String)		X	An acronym, or shorter form of the platform name, used to identify the platform.	NPP, N01, N02, SPP, S01, S02, GW1 Example: NPP	R, U

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
South_Bounding_Coordinate		X	X	X				H5T_NATIVE_FLOAT (32-bit Floating Point)			The latitude of the point (in decimal degrees) in the coverage area furthest along a southerly direction from the center point of the granule. The North, South, East, and West bounding coordinates together form a tight bounding box around the coverage area with borders along the latitude and longitude lines. When the coverage area includes the south pole, the value will be -90° and the bounding box will consist of the bottom slice of a sphere The latitude of the point is based on the exit vectors which are assumed to be the center of a pixel. For the QST IP, this attribute is not applicable (= Default Value) For products without earth geolocated observations, (e.g. OMPS Calibration) this attribute is not applicable (= Default value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation. The presence of Fill Values are acceptable.	-90.0 <= SouthBoundingCoordinate <=90.0 SouthBoundingCoordinate <= NorthBoundingCoordinate. Example: 23.3	G
Time_of_Day					X	X		H5T_C_S1 (String)			The hour, minute and second of the day that the data entered the processing environment. Single time for AUX and ANC Datasets. Hour, minutes, seconds, and fraction of a second to microsecond resolution.	Expressed as HHMMSS.SSSSSSZ, where HH is hour, MM is minutes, and SS.SSSSSS is seconds and decimal fractions of seconds (with precision to one microsecond), all relative to UTC. Example: 010116.809536Z	G
West_Bounding_Coordinate		X	X	X				H5T_NATIVE_FLOAT (32-bit Floating			The longitude of the point (in decimal degrees) in the coverage area furthest along a westerly direction from the center point of the granule. The North, South, East, and	-180.0 <= WestBoundingCoordinate <= 180.0 Degrees Example: 132.2	G

Name	RDR	SDR/TDR	EDR/IP/ARP	GEO	AUX	ANC	Exception	HDF5 Data Type	Repeating	Request Criteria	Definition	ApplicableValues	HDF5 Hierarchy
								Point)			West bounding coordinates together form a tight bounding box around the coverage area with borders along the latitude and longitude lines. The longitude of the point is based on the exit vectors which are assumed to be the center of a pixel. When the coverage area includes the north or south pole, the value will be -180°. For the QST IP, this attribute is not applicable (= Default Value) For products without earth geolocated observations, (e.g. OMPS Calibration) this attribute is not applicable (= Default value) This attribute does not apply to A-DCS, SARP, or SARR products since there is no associated geolocation. The presence of Fill Values are acceptable.		

4.4.1 Metadata Defaults

In the event that there is no information available for a specific metadata element, a default value is used. An example is in the event of a missing granule that is delivered in an aggregation of granules – there are not applicable metadata elements and, just like the missing data, the metadata is also missing (See the JPSS CDFCB-X Vol. I, 474-00001-01, for more information regarding missing granules). Table 4.4.1-1, Metadata Default Values, provides the default values for the metadata by datatype.

Table 4.4.1-1, Metadata Default Values

Metadata Data Type	Default Value
H5T_NATIVE_INT	-993
H5T_NATIVE_UINT	65529
H5T_NATIVE_ULLONG	993
H5T_NATIVE_FLOAT	-999.3
H5T_NATIVE_UCHAR	249
H5T_C_S1	N/A

4.5 NPOESS Data Product Traceability

In order to support NPOESS anomaly investigation and resolution, the NPOESS Data Products contain metadata attributes that facilitate tracing the direct inputs to the software algorithm which produces that particular product. This information is necessary to understand the lineage of a particular NPOESS Data Product instance in order to investigate system and processing anomalies. The metadata and filenames of the various data elements used in generating NPOESS Data Products can be used to trace and understand the lineage of a given data product. The traceability provided within the NPOESS Data Products is provided via various metadata attributes included in the HDF5 file. These elements provide complete coverage of the exact inputs into the particular software algorithm which produces a specific NPOESS Data Products. Inputs into a software algorithm may include:

- Raw Data Records (RDR)
- Sensor Data Records (SDR)
- Temperature Data Records (TDR)
- Environmental Data Records (EDR)
- Application Related Products (ARP)
- Intermediate Products (IP) [both delivered and not delivered]
- Ancillary Data
- Auxiliary Data

Figure 4.5-1, NPOESS Data Product Notional Processing, provides a notional depiction of a processing chain used to create NPOESS Data Products. The traceability provided by the metadata attributes in the HDF5 file indicates the direct predecessors to the particular algorithm that created a given NPOESS Data Product. In this case, identifiers for the items within the cross-hatched box only will be in the metadata for the EDR at the top of the diagram.

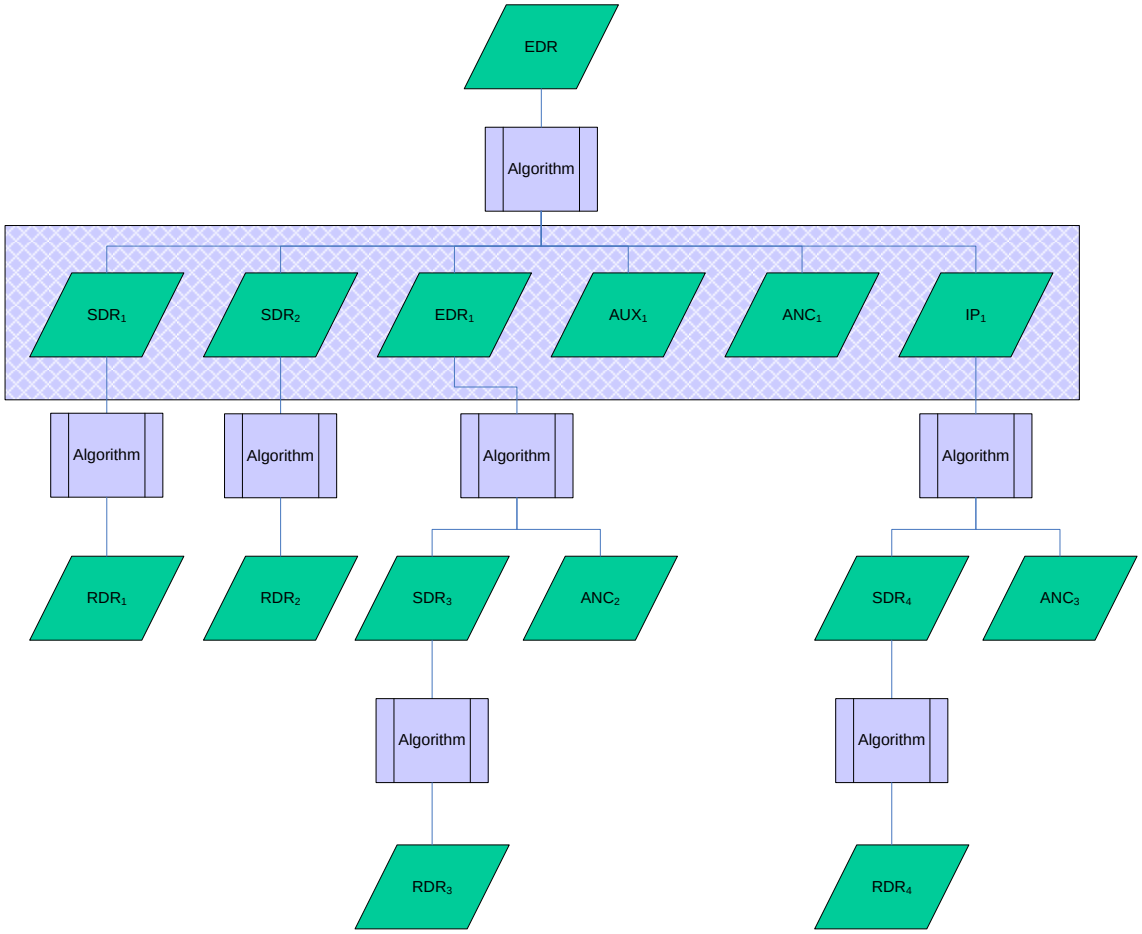

Figure 4.5-1, NPOESS Data Product Notional Processing

The NPOESS Data Products provide metadata that indicates all of the direct predecessors on granule basis (the complete list of inputs into the software algorithm that produces a given granule). The elements used for this are:

- N_Input_Prod – list of input NPOESS Data Products (provides N_Reference_IDs for each data product)
- N_Anc_Filename – list of input ancillary files (provides filenames)
- N_Aux_Filename – list of input auxiliary files (provides filenames)
- N_Software_Version – version of the IDP software used to create the data product

Figure 4.5 -2, Graphical Traceability, provides a conceptual example of how input data

tracing is identified. Assume that an EDR is produced using NPOESS Data Products EDR1, SDR1, and IP1, Ancillary Data ANC1, Auxiliary Data AUX1, and Software SW1. The EDR metadata will contain the following information:

- N_Input_Prod will contain the N_Reference_IDs found in EDR1, SDR1, and IP1.
- N_Anc_Filename will contain the filename of ANC1
- N_Aux_Filename will contain the filename of AUX1
- N_Software_Version will contain the version of SW1

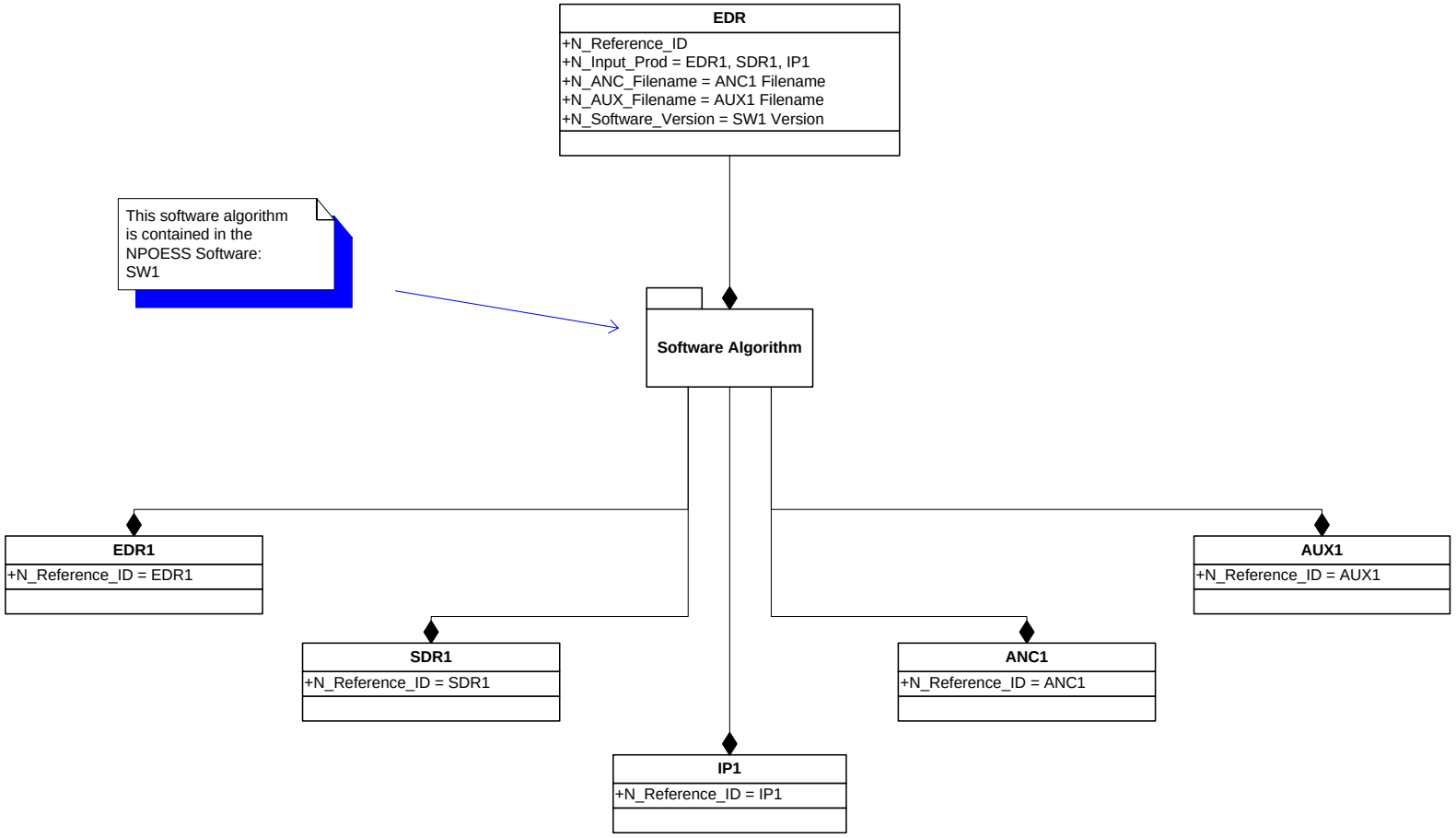

Figure 4.5-2, Graphical of Traceability

During a processing event, from RDR granule to EDR granules, the processing environment creates many temporary inter-module data products that are not delivered and which are passed from one algorithm in the processing chain to the next. These products are overwritten each time the chain is run and are not re-used in the environment. The N_Reference_IDs of these products are included in the N_Input_Prod metadata because these products are used as input into the algorithm, or module, in the processing chain that produced the resulting data product.

There are some gridded IPs in the processing system that are updated during each processing event – these products are delivered to the NPOESS Calibration/Validation team via NSIPS for review and are configurably made available to the users of an IDP. These continuously updated Gridded IPs are also delivered periodically to CLASS via the Supporting Data Release Package as updated seed files. For more information on Release Packages see Section 3.4 of the JPSS CDFCB-X Vol. I, 474-00001-01.

APPENDIX A – EXAMPLES

Example A-1, RDR HDF5 XML User Block Example

```
<HDF_UserBlock>
  <Mission_Name>NPP</Mission_Name>
  <Platform_Short_Name>NPP</Platform_Short_Name>
<Number_Of_Data_Products>1</Number_Of_Data_Products>
  <Data_Product>
    <N_Collection_Short_Name>ATMS-RDR</N_Collection_Short_Name>
    <Instrument_Short_Name>ATMS</Instrument_Short_Name>
    <N_Dataset_Type_Tag>EDR</N_Dataset_Type_Tag>
    <N_Processing_Domain>NOAA</N_Processing_Domain>
    <AggregateBeginningDate>20130125</AggregateBeginningDate>
    <AggregateBeginningOrbitNUmber>9</AggregateBeginningOrbitNumber>
    <AggregateBeginningTime>101038.325248Z </AggregateBeginningTime>
    <AggregateEndingDate>20130125</AggregateEndingDate>
    <AggregateEndingOrbitNumber>9</AggregateEndingOrbitNumber>
    <AggregateEndingTime>110116.809536Z </AggregateEndingTime>
    <AggregateBeginningGranuleID>NPP001212126373
       </AggregateBeginningGranuleID>
    <AggregateEndingGranuleID> NPP001212126373
       </AggregateEndingGranuleID>
  </Data_Product>
</HDF_UserBlock>
```

Example A-2, Single SDR, TDR, EDR, ARP, GEO, and IP HDF5 XML User Block Example

```
<HDF_UserBlock>
  <Mission_Name>NPP</Mission_Name>
  <Platform_Short_Name>NPP</Platform_Short_Name>
<Number_Of_Data_Products>1</Number_Of_Data_Products>
  <Data_Product>
    <N_Collection_Short_Name>VIIRS-OCC-EDR</N_Collection_Short_Name>
    <Instrument_Short_Name>VIIRS</Instrument_Short_Name>
    <N_Dataset_Type_Tag>EDR</N_Dataset_Type_Tag>
    <N_Processing_Domain>Tst</N_Processing_Domain>
    <AggregateBeginningDate>20130125</AggregateBeginningDate>
   <AggregateBeginningOrbitNumber>9</AggregateBeginningOrbitNumber>
    <AggregateBeginningTime>101038.325248Z</AggregateBeginningTime>
    <AggregateEndingDate>20130125</AggregateEndingDate>
    <AggregateEndingOrbitNumber>9</AggregateEndingOrbitNumber>
    <AggregateEndingTime>110116.809536Z</AggregateEndingTime>
    <AggregateBeginningGranuleID>NPP001212126373
     </AggregateBeginningGranuleID>
    <AggregateEndingGranuleID>NPP001212126373
     </AggregateEndingGranuleID>
  </Data_Product>
</HDF_UserBlock>
```

Example A-3, Multiple SDR, TDR, EDR, ARP, GEO, and IP HDF5 XML User Block Example

```
<HDF_UserBlock>
 <Mission_Name>NPP</Mission_Name>
 <Platform_Short_Name>NPP</Platform_Short_Name>
 <Number_Of_Data_Products>3</Number_Of_Data_Products>
 <Data_Product>
  <N_Collection_Short_Name>VIIRS-I1-IMG-EDR</N_Collection_Short_Name>
  <Instrument_Short_Name>VIIRS</Instrument_Short_Name>
  <N_Dataset_Type_Tag>EDR</N_Dataset_Type_Tag>
  <N_Processing_Domain>Tst</N_Processing_Domain>
  <AggregateBeginningDate>20130125</AggregateBeginningDate>
 <AggregateBeginningOrbitNumber>9</AggregateBeginningOrbitNumber>
  <AggregateBeginningTime>101038.325248Z</AggregateBeginningTime>
  <AggregateEndingDate>20130125</AggregateEndingDate>
  <AggregateEndingOrbitNumber>9</AggregateEndingOrbitNumber>
  <AggregateEndingTime>110116.809536Z</AggregateEndingTime>
  <AggregateBeginningGranuleID>NPP001212126373
   </AggregateBeginningGranuleID>
  <AggregateEndingGranuleID>NPP001212126373
   </AggregateEndingGranuleID>
 </Data_Product>
 <Data_Product>
  <N_Collection_Short_Name>VIIRS-I2-IMG-EDR</N_Collection_Short_Name>
  <Instrument_Short_Name>VIIRS</Instrument_Short_Name>
  <N_Dataset_Type_Tag>EDR</N_Dataset_Type_Tag>
  <N_Processing_Domain>Tst</N_Processing_Domain>
  <AggregateBeginningDate>20130125</AggregateBeginningDate>
 <AggregateBeginningOrbitNumber>9</AggregateBeginningOrbitNumber>
  <AggregateBeginningTime>101038.325248Z</AggregateBeginningTime>
  <AggregateEndingDate>20130125</AggregateEndingDate>
  <AggregateEndingOrbitNumber>9</AggregateEndingOrbitNumber>
  <AggregateEndingTime>110116.809536Z</AggregateEndingTime>
```

```
    <AggregateBeginningGranuleID>NPP001212126373
     </AggregateBeginningGranuleID>
    <AggregateEndingGranuleID>NPP001212126373
     </AggregateEndingGranuleID>
  </Data_Product>
  <Data_Product>
    <N_Collection_Short_Name>VIIRS-I3-IMG-EDR</N_Collection_Short_Name>
    <Instrument_Short_Name>VIIRS</Instrument_Short_Name>
    <N_Dataset_Type_Tag>EDR</N_Dataset_Type_Tag>
    <N_Processing_Domain>Tst</N_Processing_Domain>
    <AggregateBeginningDate>20130125</AggregateBeginningDate>
   <AggregateBeginningOrbitNumber>9</AggregateBeginningOrbitNumber>
    <AggregateBeginningTime>101038.325248Z</AggregateBeginningTime>
    <AggregateEndingDate>20130125</AggregateEndingDate>
    <AggregateEndingOrbitNumber>9</AggregateEndingOrbitNumber>
    <AggregateEndingTime>110116.809536Z</AggregateEndingTime>
    <AggregateBeginningGranuleID>NPP001212126373
     </AggregateBeginningGranuleID>
    <AggregateEndingGranuleID>NPP001212126373
     </AggregateEndingGranuleID>
  </Data_Product>
</HDF_UserBlock>
```

Example A-4, NPOESS Data Product Profile XML Example

```
<?xml version="1.0"?>


<?xml-stylesheet type="text/xsl" href="NPOESS_Product_Profile_StyleSheet.xsl"?>

<!--

<NPOESS_Product_Profile CollectionShortName="CrIS-SDR-GEO" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="NPOESS_Product_Profile.xsd">

-->

<NPOESSDataProduct>
<ProductName>CrIS SDR Geolocation Data</ProductName>
   <CollectionShortName>CrIS-SDR-GEO</CollectionShortName>
   <DataProductID>GCRSO</DataProductID>
   <ProductData>
      <DataName>CrIS SDR Geolocation Product Profile</DataName>
      <Field>
         <Name>FORTime</Name>
         <Dimension>
            <Name>Scan</Name>
            <GranuleBoundary>1</GranuleBoundary>
            <Dynamic>0</Dynamic>
            <MinIndex>4</MinIndex>
            <MaxIndex>4</MaxIndex>
         </Dimension>
         <Dimension>
            <Name>FOR</Name>
            <GranuleBoundary>0</GranuleBoundary>
            <Dynamic>0</Dynamic>
```

```
        <MinIndex>30</MinIndex>
        <MaxIndex>30</MaxIndex>
      </Dimension>
      <DataSize>
        <Count>8</Count>
        <Type>byte(s)</Type>
      </DataSize>
      <Datum>
        <Description>Time for each FOR in IET (1/1/1958)</Description>
        <DatumOffset>0</DatumOffset>
        <Scaled>0</Scaled>
        <MeasurementUnits>microsecond</MeasurementUnits>
        <RangeMin></RangeMin>
        <RangeMax></RangeMax>
        <DataType>64-bit integer</DataType>
        <FillValue>
          <Name>NA_INT64_FILL</Name>
          <Value>-999</Value>
        </FillValue>
        <FillValue>
          <Name>MISS_INT64_FILL</Name>
          <Value>-998</Value>
        </FillValue>
        <FillValue>
          <Name>ERR_INT64_FILL</Name>
          <Value>-995</Value>
        </FillValue>
        <FillValue>
          <Name>VDNE_INT64_FILL</Name>
          <Value>-993</Value>
        </FillValue>
      </Datum>
    </Field>
```

```
<Field>
  <Name>StartTime</Name>
  <Dimension>
    <Name>Scan</Name>
    <GranuleBoundary>1</GranuleBoundary>
    <Dynamic>0</Dynamic>
    <MinIndex>4</MinIndex>
    <MaxIndex>4</MaxIndex>
  </Dimension>
  <DataSize>
    <Count>8</Count>
    <Type>byte(s)</Type>
  </DataSize>
  <Datum>
    <Description>Starting time of scan in IET (1/1/1958)</Description>
    <DatumOffset>0</DatumOffset>
    <Scaled>0</Scaled>
    <MeasurementUnits>microsecond</MeasurementUnits>
    <RangeMin></RangeMin>
    <RangeMax></RangeMax>
    <DataType>64-bit integer</DataType>
    <FillValue>
      <Name>NA_INT64_FILL</Name>
      <Value>-999</Value>
    </FillValue>
    <FillValue>
      <Name>MISS_INT64_FILL</Name>
      <Value>-998</Value>
    </FillValue>
    <FillValue>
      <Name>ERR_INT64_FILL</Name>
      <Value>-995</Value>
    </FillValue>
```

```
        <FillValue>
          <Name>VDNE_INT64_FILL</Name>
          <Value>-993</Value>
        </FillValue>
      </Datum>
    </Field>
    <Field>
      <Name>MidTime</Name>
      <Dimension>
        <Name>Scan</Name>
        <GranuleBoundary>1</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>4</MinIndex>
        <MaxIndex>4</MaxIndex>
      </Dimension>
      <DataSize>
        <Count>8</Count>
        <Type>byte(s)</Type>
      </DataSize>
      <Datum>
        <Description>Mid time of scan in IET (1/1/1958)</Description>
        <DatumOffset>0</DatumOffset>
        <Scaled>0</Scaled>
        <MeasurementUnits>microsecond</MeasurementUnits>
        <RangeMin></RangeMin>
        <RangeMax></RangeMax>
        <DataType>64-bit integer</DataType>
        <FillValue>
          <Name>NA_INT64_FILL</Name>
          <Value>-999</Value>
        </FillValue>
        <FillValue>
          <Name>MISS_INT64_FILL</Name>
```

```
            <Value>-998</Value>
          </FillValue>
          <FillValue>
            <Name>ERR_INT64_FILL</Name>
            <Value>-995</Value>
          </FillValue>
          <FillValue>
            <Name>VDNE_INT64_FILL</Name>
            <Value>-993</Value>
          </FillValue>
        </Datum>
      </Field>
      <Field>
        <Name>Latitude</Name>
        <Dimension>
          <Name>Scan</Name>
          <GranuleBoundary>1</GranuleBoundary>
          <Dynamic>0</Dynamic>
          <MinIndex>4</MinIndex>
          <MaxIndex>4</MaxIndex>
        </Dimension>
        <Dimension>
          <Name>FOR</Name>
          <GranuleBoundary>0</GranuleBoundary>
          <Dynamic>0</Dynamic>
          <MinIndex>30</MinIndex>
          <MaxIndex>30</MaxIndex>
        </Dimension>
        <Dimension>
          <Name>FOV</Name>
          <GranuleBoundary>0</GranuleBoundary>
          <Dynamic>0</Dynamic>
          <MinIndex>9</MinIndex>
```

```
      <MaxIndex>9</MaxIndex>
    </Dimension>
    <DataSize>
      <Count>4</Count>
      <Type>byte(s)</Type>
    </DataSize>
    <Datum>
      <Description>Latitude (positive North) of the geolocated FOV center</Description>
      <DatumOffset>0</DatumOffset>
      <Scaled>0</Scaled>
      <MeasurementUnits>degree</MeasurementUnits>
      <RangeMin>-90</RangeMin>
      <RangeMax>90</RangeMax>
      <DataType>32-bit floating point</DataType>
      <FillValue>
        <Name>NA_FLOAT32_FILL</Name>
        <Value>-999.9</Value>
      </FillValue>
      <FillValue>
        <Name>MISS_FLOAT32_FILL</Name>
        <Value>-999.8</Value>
      </FillValue>
      <FillValue>
        <Name>ERR_FLOAT32_FILL</Name>
        <Value>-999.5</Value>
      </FillValue>
      <FillValue>
        <Name>VDNE_FLOAT32_FILL</Name>
        <Value>-999.3</Value>
      </FillValue>
    </Datum>
  </Field>
  <Field>
```

```
<Name>Longitude</Name>
<Dimension>
   <Name>Scan</Name>
   <GranuleBoundary>1</GranuleBoundary>
   <Dynamic>0</Dynamic>
   <MinIndex>4</MinIndex>
   <MaxIndex>4</MaxIndex>
</Dimension>
<Dimension>
   <Name>FOR</Name>
   <GranuleBoundary>0</GranuleBoundary>
   <Dynamic>0</Dynamic>
   <MinIndex>30</MinIndex>
   <MaxIndex>30</MaxIndex>
</Dimension>
<Dimension>
   <Name>FOV</Name>
   <GranuleBoundary>0</GranuleBoundary>
   <Dynamic>0</Dynamic>
   <MinIndex>9</MinIndex>
   <MaxIndex>9</MaxIndex>
</Dimension>
<DataSize>
   <Count>4</Count>
   <Type>byte(s)</Type>
</DataSize>
<Datum>
   <Description>Longitude (positive East) of the geolocated FOV center</Description>
   <DatumOffset>0</DatumOffset>
   <Scaled>0</Scaled>
   <MeasurementUnits>degree</MeasurementUnits>
   <RangeMin>-180</RangeMin>
   <RangeMax>180</RangeMax>
```

```
        <DataType>32-bit floating point</DataType>
        <FillValue>
          <Name>NA_FLOAT32_FILL</Name>
          <Value>-999.9</Value>
        </FillValue>
        <FillValue>
          <Name>MISS_FLOAT32_FILL</Name>
          <Value>-999.8</Value>
        </FillValue>
        <FillValue>
          <Name>ERR_FLOAT32_FILL</Name>
          <Value>-999.5</Value>
        </FillValue>
        <FillValue>
          <Name>VDNE_FLOAT32_FILL</Name>
          <Value>-999.3</Value>
        </FillValue>
      </Datum>
    </Field>
    <Field>
      <Name>SolarZenithAngle</Name>
      <Dimension>
        <Name>Scan</Name>
        <GranuleBoundary>1</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>4</MinIndex>
        <MaxIndex>4</MaxIndex>
      </Dimension>
      <Dimension>
        <Name>FOR</Name>
        <GranuleBoundary>0</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>30</MinIndex>
```

```
      <MaxIndex>30</MaxIndex>
    </Dimension>
    <Dimension>
      <Name>FOV</Name>
      <GranuleBoundary>0</GranuleBoundary>
      <Dynamic>0</Dynamic>
      <MinIndex>9</MinIndex>
      <MaxIndex>9</MaxIndex>
    </Dimension>
    <DataSize>
      <Count>4</Count>
      <Type>byte(s)</Type>
    </DataSize>
    <Datum>
      <Description>Zenith angle of sun at the geolocated FOV center</Description>
      <DatumOffset>0</DatumOffset>
      <Scaled>0</Scaled>
      <MeasurementUnits>degree</MeasurementUnits>
      <RangeMin>0</RangeMin>
      <RangeMax>180</RangeMax>
      <DataType>32-bit floating point</DataType>
      <FillValue>
        <Name>NA_FLOAT32_FILL</Name>
        <Value>-999.9</Value>
      </FillValue>
      <FillValue>
        <Name>MISS_FLOAT32_FILL</Name>
        <Value>-999.8</Value>
      </FillValue>
      <FillValue>
        <Name>ERR_FLOAT32_FILL</Name>
        <Value>-999.5</Value>
      </FillValue>
```

```
        <FillValue>
          <Name>VDNE_FLOAT32_FILL</Name>
          <Value>-999.3</Value>
        </FillValue>
      </Datum>
    </Field>
    <Field>
      <Name>SolarAzimuthAngle</Name>
      <Dimension>
        <Name>Scan</Name>
        <GranuleBoundary>1</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>4</MinIndex>
        <MaxIndex>4</MaxIndex>
      </Dimension>
      <Dimension>
        <Name>FOR</Name>
        <GranuleBoundary>0</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>30</MinIndex>
        <MaxIndex>30</MaxIndex>
      </Dimension>
      <Dimension>
        <Name>FOV</Name>
        <GranuleBoundary>0</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>9</MinIndex>
        <MaxIndex>9</MaxIndex>
      </Dimension>
      <DataSize>
        <Count>4</Count>
        <Type>byte(s)</Type>
      </DataSize>
```

```
        <Datum>
          <Description>Azimuth angle of sun (measured clockwise positive from North) at the geolocated FOV
center</Description>
          <DatumOffset>0</DatumOffset>
          <Scaled>0</Scaled>
          <MeasurementUnits>degree</MeasurementUnits>
          <RangeMin>-180</RangeMin>
          <RangeMax>180</RangeMax>
          <DataType>32-bit floating point</DataType>
          <FillValue>
            <Name>NA_FLOAT32_FILL</Name>
            <Value>-999.9</Value>
          </FillValue>
          <FillValue>
            <Name>MISS_FLOAT32_FILL</Name>
            <Value>-999.8</Value>
          </FillValue>
          <FillValue>
            <Name>ERR_FLOAT32_FILL</Name>
            <Value>-999.5</Value>
          </FillValue>
          <FillValue>
            <Name>VDNE_FLOAT32_FILL</Name>
            <Value>-999.3</Value>
          </FillValue>
        </Datum>
      </Field>
      <Field>
        <Name>SatelliteZenithAngle</Name>
        <Dimension>
          <Name>Scan</Name>
          <GranuleBoundary>1</GranuleBoundary>
          <Dynamic>0</Dynamic>
```

```
      <MinIndex>4</MinIndex>
      <MaxIndex>4</MaxIndex>
    </Dimension>
    <Dimension>
      <Name>FOR</Name>
      <GranuleBoundary>0</GranuleBoundary>
      <Dynamic>0</Dynamic>
      <MinIndex>30</MinIndex>
      <MaxIndex>30</MaxIndex>
    </Dimension>
    <Dimension>
      <Name>FOV</Name>
      <GranuleBoundary>0</GranuleBoundary>
      <Dynamic>0</Dynamic>
      <MinIndex>9</MinIndex>
      <MaxIndex>9</MaxIndex>
    </Dimension>
    <DataSize>
      <Count>4</Count>
      <Type>byte(s)</Type>
    </DataSize>
    <Datum>
      <Description>Zenith angle to satellite at the geolocated FOV center</Description>
      <DatumOffset>0</DatumOffset>
      <Scaled>0</Scaled>
      <MeasurementUnits>degree</MeasurementUnits>
      <RangeMin>0</RangeMin>
      <RangeMax>~70</RangeMax>
      <DataType>32-bit floating point</DataType>
      <FillValue>
        <Name>NA_FLOAT32_FILL</Name>
        <Value>-999.9</Value>
      </FillValue>
```

```
        <FillValue>
          <Name>MISS_FLOAT32_FILL</Name>
          <Value>-999.8</Value>
        </FillValue>
        <FillValue>
          <Name>ERR_FLOAT32_FILL</Name>
          <Value>-999.5</Value>
        </FillValue>
        <FillValue>
          <Name>VDNE_FLOAT32_FILL</Name>
          <Value>-999.3</Value>
        </FillValue>
      </Datum>
    </Field>
    <Field>
      <Name>SatelliteAzimuthAngle</Name>
      <Dimension>
        <Name>Scan</Name>
        <GranuleBoundary>1</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>4</MinIndex>
        <MaxIndex>4</MaxIndex>
      </Dimension>
      <Dimension>
        <Name>FOR</Name>
        <GranuleBoundary>0</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>30</MinIndex>
        <MaxIndex>30</MaxIndex>
      </Dimension>
      <Dimension>
        <Name>FOV</Name>
        <GranuleBoundary>0</GranuleBoundary>
```

```
            <Dynamic>0</Dynamic>
            <MinIndex>9</MinIndex>
            <MaxIndex>9</MaxIndex>
         </Dimension>
         <DataSize>
            <Count>4</Count>
            <Type>byte(s)</Type>
         </DataSize>
         <Datum>
            <Description>Azimuth angle (measured clockwise positive from North) to satellite at the geolocated FOV
center</Description>
            <DatumOffset>0</DatumOffset>
            <Scaled>0</Scaled>
            <MeasurementUnits>degree</MeasurementUnits>
            <RangeMin>-180</RangeMin>
            <RangeMax>180</RangeMax>
            <DataType>32-bit floating point</DataType>
            <FillValue>
               <Name>NA_FLOAT32_FILL</Name>
               <Value>-999.9</Value>
            </FillValue>
            <FillValue>
               <Name>MISS_FLOAT32_FILL</Name>
               <Value>-999.8</Value>
            </FillValue>
            <FillValue>
               <Name>ERR_FLOAT32_FILL</Name>
               <Value>-999.5</Value>
            </FillValue>
            <FillValue>
               <Name>VDNE_FLOAT32_FILL</Name>
               <Value>-999.3</Value>
            </FillValue>
```

```
    </Datum>
  </Field>
  <Field>
    <Name>Height</Name>
    <Dimension>
      <Name>Scan</Name>
      <GranuleBoundary>1</GranuleBoundary>
      <Dynamic>0</Dynamic>
      <MinIndex>4</MinIndex>
      <MaxIndex>4</MaxIndex>
    </Dimension>
    <Dimension>
      <Name>FOR</Name>
      <GranuleBoundary>0</GranuleBoundary>
      <Dynamic>0</Dynamic>
      <MinIndex>30</MinIndex>
      <MaxIndex>30</MaxIndex>
    </Dimension>
    <Dimension>
      <Name>FOV</Name>
      <GranuleBoundary>0</GranuleBoundary>
      <Dynamic>0</Dynamic>
      <MinIndex>9</MinIndex>
      <MaxIndex>9</MaxIndex>
    </Dimension>
    <DataSize>
      <Count>4</Count>
      <Type>byte(s)</Type>
    </DataSize>
    <Datum>
      <Description>Ellipsoid-Geoid separation</Description>
      <DatumOffset>0</DatumOffset>
      <Scaled>0</Scaled>
```

```
        <MeasurementUnits>meter</MeasurementUnits>
        <RangeMin>
        </RangeMin>
        <RangeMax>
        </RangeMax>
        <DataType>32-bit floating point</DataType>
        <FillValue>
          <Name>NA_FLOAT32_FILL</Name>
          <Value>-999.9</Value>
        </FillValue>
        <FillValue>
          <Name>MISS_FLOAT32_FILL</Name>
          <Value>-999.8</Value>
        </FillValue>
        <FillValue>
          <Name>ERR_FLOAT32_FILL</Name>
          <Value>-999.5</Value>
        </FillValue>
        <FillValue>
          <Name>VDNE_FLOAT32_FILL</Name>
          <Value>-999.3</Value>
        </FillValue>
      </Datum>
    </Field>
    <Field>
      <Name>SatelliteRange</Name>
      <Dimension>
        <Name>Scan</Name>
        <GranuleBoundary>1</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>4</MinIndex>
        <MaxIndex>4</MaxIndex>
      </Dimension>
```

```
<Dimension>
   <Name>FOR</Name>
   <GranuleBoundary>0</GranuleBoundary>
   <Dynamic>0</Dynamic>
   <MinIndex>30</MinIndex>
   <MaxIndex>30</MaxIndex>
</Dimension>
<Dimension>
   <Name>FOV</Name>
   <GranuleBoundary>0</GranuleBoundary>
   <Dynamic>0</Dynamic>
   <MinIndex>9</MinIndex>
   <MaxIndex>9</MaxIndex>
</Dimension>
<DataSize>
   <Count>4</Count>
   <Type>byte(s)</Type>
</DataSize>
<Datum>
   <Description>Line of sight distance from the ellipsoid intersection to the satellite</Description>
   <DatumOffset>0</DatumOffset>
   <Scaled>0</Scaled>
   <MeasurementUnits>meter</MeasurementUnits>
   <RangeMin>
   </RangeMin>
   <RangeMax>
   </RangeMax>
   <DataType>32-bit floating point</DataType>
   <FillValue>
      <Name>NA_FLOAT32_FILL</Name>
      <Value>-999.9</Value>
   </FillValue>
   <FillValue>
```

```
            <Name>MISS_FLOAT32_FILL</Name>
            <Value>-999.8</Value>
         </FillValue>
         <FillValue>
            <Name>ERR_FLOAT32_FILL</Name>
            <Value>-999.5</Value>
         </FillValue>
         <FillValue>
            <Name>VDNE_FLOAT32_FILL</Name>
            <Value>-999.3</Value>
         </FillValue>
      </Datum>
   </Field>
   <Field>
      <Name>SCPosition</Name>
      <Dimension>
         <Name>Scan</Name>
         <GranuleBoundary>1</GranuleBoundary>
         <Dynamic>0</Dynamic>
         <MinIndex>4</MinIndex>
         <MaxIndex>4</MaxIndex>
      </Dimension>
      <Dimension>
         <Name>ECRCoordinate</Name>
         <GranuleBoundary>0</GranuleBoundary>
         <Dynamic>0</Dynamic>
         <MinIndex>3</MinIndex>
         <MaxIndex>3</MaxIndex>
      </Dimension>
      <DataSize>
         <Count>4</Count>
         <Type>byte(s)</Type>
      </DataSize>
```

```
      <Datum>
        <Description>Spacecraft position in ECR Coordinates (X, Y, Z) at the mid-time of scan</Description>
        <DatumOffset>0</DatumOffset>
        <Scaled>0</Scaled>
        <MeasurementUnits>meter</MeasurementUnits>
        <RangeMin>
        </RangeMin>
        <RangeMax>
        </RangeMax>
        <DataType>32-bit floating point</DataType>
        <FillValue>
          <Name>NA_FLOAT32_FILL</Name>
          <Value>-999.9</Value>
        </FillValue>
        <FillValue>
          <Name>MISS_FLOAT32_FILL</Name>
          <Value>-999.8</Value>
        </FillValue>
        <FillValue>
          <Name>ERR_FLOAT32_FILL</Name>
          <Value>-999.5</Value>
        </FillValue>
        <FillValue>
          <Name>VDNE_FLOAT32_FILL</Name>
          <Value>-999.3</Value>
        </FillValue>
      </Datum>
    </Field>
    <Field>
      <Name>SCVelocity</Name>
      <Dimension>
        <Name>Scan</Name>
        <GranuleBoundary>1</GranuleBoundary>
```

```
      <Dynamic>0</Dynamic>
      <MinIndex>4</MinIndex>
      <MaxIndex>4</MaxIndex>
    </Dimension>
    <Dimension>
      <Name>ECRCoordinate</Name>
      <GranuleBoundary>0</GranuleBoundary>
      <Dynamic>0</Dynamic>
      <MinIndex>3</MinIndex>
      <MaxIndex>3</MaxIndex>
    </Dimension>
    <DataSize>
      <Count>4</Count>
      <Type>byte(s)</Type>
    </DataSize>
    <Datum>
      <Description>Spacecraft velocity in ECR Coordinates (dx/dt, dy/dt, dz/dt) at the mid-time of scan</Description>
      <DatumOffset>0</DatumOffset>
      <Scaled>0</Scaled>
      <MeasurementUnits>m/s</MeasurementUnits>
      <RangeMin>
      </RangeMin>
      <RangeMax>
      </RangeMax>
      <DataType>32-bit floating point</DataType>
      <FillValue>
        <Name>NA_FLOAT32_FILL</Name>
        <Value>-999.9</Value>
      </FillValue>
      <FillValue>
        <Name>MISS_FLOAT32_FILL</Name>
        <Value>-999.8</Value>
      </FillValue>
```

```
            <FillValue>
               <Name>ERR_FLOAT32_FILL</Name>
               <Value>-999.5</Value>
            </FillValue>
            <FillValue>
               <Name>VDNE_FLOAT32_FILL</Name>
               <Value>-999.3</Value>
            </FillValue>
         </Datum>
      </Field>
      <Field>
         <Name>SCAttitude</Name>
         <Dimension>
            <Name>Scan</Name>
            <GranuleBoundary>1</GranuleBoundary>
            <Dynamic>0</Dynamic>
            <MinIndex>4</MinIndex>
            <MaxIndex>4</MaxIndex>
         </Dimension>
         <Dimension>
            <Name>GRFCoordinate</Name>
            <GranuleBoundary>0</GranuleBoundary>
            <Dynamic>0</Dynamic>
            <MinIndex>3</MinIndex>
            <MaxIndex>3</MaxIndex>
         </Dimension>
         <DataSize>
            <Count>4</Count>
            <Type>byte(s)</Type>
         </DataSize>
         <Datum>
            <Description>Spacecraft attitude with respect to the Geodetic Reference Frame Coordinates (roll, pitch, yaw) at
the mid-time of scan</Description>
```

```
        <DatumOffset>0</DatumOffset>
        <Scaled>0</Scaled>
        <MeasurementUnits>arcsecond</MeasurementUnits>
        <RangeMin>
        </RangeMin>
        <RangeMax>
        </RangeMax>
        <DataType>32-bit floating point</DataType>
        <FillValue>
          <Name>NA_FLOAT32_FILL</Name>
          <Value>-999.9</Value>
        </FillValue>
        <FillValue>
          <Name>MISS_FLOAT32_FILL</Name>
          <Value>-999.8</Value>
        </FillValue>
        <FillValue>
          <Name>ERR_FLOAT32_FILL</Name>
          <Value>-999.5</Value>
        </FillValue>
        <FillValue>
          <Name>VDNE_FLOAT32_FILL</Name>
          <Value>-999.3</Value>
        </FillValue>
      </Datum>
    </Field>
    <Field>
      <Name>QF1_CRISSDRGEO</Name>
      <Dimension>
        <Name>Scan</Name>
        <GranuleBoundary>1</GranuleBoundary>
        <Dynamic>0</Dynamic>
        <MinIndex>4</MinIndex>
```

```
      <MaxIndex>4</MaxIndex>
    </Dimension>
    <DataSize>
      <Count>1</Count>
      <Type>byte(s)</Type>
    </DataSize>
    <Datum>
      <Description>Attitude and Ephemeris availability status</Description>
      <DatumOffset>0</DatumOffset>
      <Scaled>0</Scaled>
      <MeasurementUnits>unitless</MeasurementUnits>
      <DataType>2 bit(s)</DataType>
      <LegendEntry>
        <Name>Nominal - E&amp;amp;A data available</Name>
        <Value>0</Value>
      </LegendEntry>
      <LegendEntry>
        <Name>Missing Data &lt;= Small Gap</Name>
        <Value>1</Value>
      </LegendEntry>
      <LegendEntry>
        <Name>Small Gap &lt; Missing Data &lt;= Granule Boundary</Name>
        <Value>2</Value>
      </LegendEntry>
      <LegendEntry>
        <Name>Missing Data &gt; Granule Boundary</Name>
        <Value>3</Value>
      </LegendEntry>
    </Datum>
    <Datum>
      <Description>Spare</Description>
      <DatumOffset>2</DatumOffset>
      <Scaled>0</Scaled>
```

```
            <MeasurementUnits>unitless</MeasurementUnits>
            <DataType>6 bit(s)</DataType>
          </Datum>
        </Field>
        </ProductData>

</NPOESSDataProduct>
```

APPENDIX B – NPOESS DELIVERED DOCUMENTATION

The following is a list of the documentation delivered by NPOESS to the external community via the Documentation Release Packages. See the JPSS CDFCB-X Vol. I, 474-00001-01, for information regarding Release Packages. This list of documents completes the set of documentation to understand the NPP/NPOESS Data Products.

Table B-1, NPOESS Delivered Documentation

Document Title	Doc Number	Collection Short Name
Science Documents		
ATBD for OMPS Nadir Profile Ozone	474-00026	ATBD-NP-Ozone
ATBD for OMPS Nadir Total Column Ozone	474-00029	ATBD-IR-TC-Ozone
ATBD for VIIRS Sea Surface Temperature	474-00048	ATBD-VIIRS-SST
ATBD for VIIRS Aerosol Optical Thickness & Aerosol Particle Size Parameter	474-00049	ATBD-VIIRS-AOT-APSP
ATBD for VIIRS Atmospheric Correction Over Ocean	474-00050	ATBD-VIIRS-Atm-Correction-Over-Ocean
ATBD for VIIRS Suspended Matter	474-00046	ATBD-VIIRS-SusMatter
ATBD for VIIRS Cloud Base Height	474-00045	ATBD-VIIRS-CBH
ATBD for VIIRS Cloud Cover/Layers	474-00044	ATBD-VIIRS-CCL
ATBD for VIIRS Cloud Effective Particle Size and Cloud Optical Thickness	474-00042	ATBD-VIIRS-Cloud-EPS-COT
ATBD for VIIRS Cloud Top Parameters	474-00041	ATBD-VIIRS-CTP
ATBD for VIIRS Surface Albedo	474-00040	ATBD-VIIRS-Albedo
ATBD for VIIRS Land Surface Temperature	474-00051	ATBD-VIIRS-LST
ATBD for VIIRS Vegetation Index	474-00039	ATBD-VIIRS-VI
ATBD for VIIRS Snow Cover	474-00038	ATBD-VIIRS-SC
ATBD for VIIRS Surface Type	474-00037	ATBD-VIIRS-Surface-Type

Document Title	Doc Number	Collection Short Name
ATBD for VIIRS Ice Surface Temperature	474-00052	ATBD-VIIRS-IST
ATBD for VIIRS Net Heat Flux	474-00036	ATBD-VIIRS-NHF
ATBD for VIIRS Ocean Color/Chlorophyll	474-00035	ATBD-VIIRS-OCC
ATBD for VIIRS Surface Reflectance	474-00034	ATBD-VIIRS-Surface-Reflectance
ATBD for VIIRS Cloud Mask	474-00033	ATBD-VIIRS-Cloud-Mask
ATBD for VIIRS Imagery Products	474-00031	ATBD-VIIRS-Imagery
ATBD for VIIRS Active Fires	474-00030	ATBD-VIIRS-Active-Fires
ATBD for VIIRS Geolocation	474-00053	ATBD-VIIRS-Geolocation
ATBD for VIIRS Radiometric Calibration	474-00027	ATBD-VIIRS-Radiometric-Calibration
ATBD for VIIRS Earth Gridding	474-00028	ATBD-VIIRS-Earth-Gridding
ATBD for CrIS SDRs	474-00032	ATBD-CrIS-SDRs
ATBD for CrIS EDR	474-00056	ATBD-CrIS-EDR
ATBD for ATMS SDR Radiometric Calibration	474-00043	ATBD-ATMS-CAL-SDR
ATBD for VIIRS Sea Ice Characterization	474-00047	ATBD-VIIRS-SeaIceCharacerization
OAD for OMPS Nadir Profile SDR Software	474-00081	OAD-OMPS-NP-SDR
OAD for OMPS Total Column SDR Software	474-00077	OAD-OMPS-TC-SDR
OAD for Ozone Mapping and Profiler Suite (OMPS) Total Column (TC) EDR Software	474-00066	OAD-OMPS-TC-EDR
OAD for Ozone Mapping and Profiler Suite (OMPS) Nadir Profile (NP) IP Software	474-00067	OAD-OMPS-NP-IP
OAD for VIIRS Cloud Mask IP Software	474-00062	OAD-VIIRS-Cloud-Mask-IP
OAD for VIIRS Cloud Perform Parallax Correction Software	474-00088	OAD-VIIRS-PPC-IP
OAD for VIIRS Cloud Optical Properties (COP) Software	474-00074	OAD-VIIRS-COP-IP
OAD for VIIRS Active Fires (AF) Application Related Product (ARP) Software	474-00064	OAD-VIIRS-AF-ARP

Document Title	Doc Number	Collection Short Name
OAD for VIIRS NCC Imagery EDR Software	474-00060	OAD-VIIRS-NCC-EDR
OAD for VIIRS Cloud Base Height (CBH) IP Software	474-00084	OAD-VIIRS-CBH-IP
OAD for VIIRS Cloud Cover/Layers and Generate Cloud EDR Software	474-00085	OAD-VIIRS-CCL-GCE-EDR
OAD for VIIRS Cloud Top Parameters (CTP) EDR Software	474-00083	OAD-VIIRS-CTP-EDR
OAD for VIIRS Land Surface Temperature EDR Software	474-00070	OAD-VIIRS-LST-EDR
OAD for VIIRS Snow Cover EDR Software	474-00086	OAD-VIIRS-Snow-Cover-EDR
OAD for VIIRS Surface Type EDR Software	474-00068	OAD-VIIRS-SType-EDR
OAD for VIIRS Vegetation Index EDR Software	474-00063	OAD-VIIRS-VI-EDR
OAD for VIIRS Sea Surface Temperature EDR Software	474-00061	OAD-VIIRS-SST-EDR
OAD for VIIRS Ice Surface Temperature (IST) EDR Software	474-00072	OAD-VIIRS-IST-EDR
OAD for VIIRS Net Heat Flux (NHF) EDR and Ocean Surface Albedo (OSA) IP Software	474-00082	OAD-VIIRS-NHF-EDR-OSA-IP
OAD for Atmospheric Correction Over Ocean (ACO) / Ocean Color Chlorophyll (OCC) Software	474-00057	OAD-VIIRS-ACO-OCC-EDR
OAD for VIIRS Sea Ice Age EDR Software	474-00087	OAD-VIIRS-SIA-EDR
OAD for VIIRS Land Surface and Ice Albedo (LISA) IP and Combined Albedo (CA) EDR Software	474-00080	OAD-VIIRS-LISA-IP-CA-EDR
OAD for VIIRS Surface Reflectance IP Software	474-00069	OAD-VIIRS-SR-IP
OAD for Gridding and Granulation and VIIRS Gridded IP (GIP) Software	474-00075	OAD-G-G-VIIRS-GIP
OAD for Cross-track Infrared Sounder (CrIS) SDR Software	474-00071	OAD-CrIS-SDR
OAD for Advanced Technology Microwave Sounder (ATMS) SDR Software	474-00076	OAD-ATMS-SDR
OAD for VIIRS Geolocation (GEO) SDR and Calibration (CAL) SDR Software	474--00090	OAD-VIIRS-CAL-GEO-SDR
OAD for Advanced Technology Microwave Sounder (ATMS) Resampling (Remap) SDR Software	474-00092	OAD-ATMS-Remap-SDR

Document Title	Doc Number	Collection Short Name
OAD for VIIRS Ground Track Mercator (GTM) Imagery Environmental Data Record EDR Software	474-00093	OAD-VIIRS-GTM-EDR
OAD for VIIRS Sea Ice Concentration (SIC) IP Software	474-00094	OAD-VIIRS-SIC-IP
OAD for VIIRS Sea Ice Quality (SIQ) IP and Surface Temperature (ST) IP Software	474-00095	OAD-VIIRS-SIQ-IP-ST-IP
OAD for VIIRS Gridded Surface Albedo (GSA) IP Software	474-00078	OAD-VIIRS-GSA-IP
OAD for VIIRS Aerosol Products IP-EDR Software	474-00073	OAD-VIIRS-Aerosols-IP-EDR
OAD for Cross-track Infrared and Advanced Technology Microwave Sounder Suite (CrIMSS) EDR Software	474-00065	OAD-CrIMSS-EDR
OAD for Granulate Ancillary Software	474-00089	OAD-Gran-ANC
OAD for Common Geolocation Software	474-00091	OAD-Cmn-Geo
OAD for Common Adjacency Software	474-00097	OAD_Cmn_Adj
JPSS EDR Production Report (EDR/PR)	474-00024	JPSS-EDRPR
EDR Interdependency Report (EDR/IR)	474-00007	JPSS -EDRIR
Interface Control Documents (ICD)		
JPSS Common Data Format Control Book – External - Volume I (Overview)	474-00001-01	JPSS-CDFCB–X-Vol-I
JPSS Common Data Format Control Book – External - Volume II (RDR Formats)	474-00001-02	JPSS-CDFCB-X-Vol-II
JPSS Common Data Format Control Book – External - Volume III (SDR/TDR Formats)	474-00001-03	JPSS-CDFCB-X-Vol-III
JPSS Common Data Format Control Book – External - Volume IV - Part I (IPs, ARPs, and Geolocation Data)	474-00001-04-01	JPSS-CDFCB-X-Vol-IV-Part-1
JPSS Common Data Format Control Book – External - Volume IV - Part 2 (Imagery, Atmospheric, and Cloud EDRs)	474-00001-04-02	JPSS-CDFCB-X-Vol-IV-Part-2
JPSS Common Data Format Control Book – External - Volume IV - Part 3 (Land and Ocean/Water EDRs)	474-00001-04-03	JPSS-CDFCB-X-Vol-IV-Part-3

Document Title	Doc Number	Collection Short Name
JPSS Common Data Format Control Book – External - Volume IV - Part 4 (Earth Radiation Budget and Space EDRs)	474-00001-04-04	JPSS-CDFCB-X-Vol-IV-Part-4
JPSS Data Product Profiles	Profile Dependent – See the JPSS CDFCB-X Vol. I, 474-00001-01, for document number and Collection Short Name convention	
JPSS Common Data Format Control Book – External - Volume V (Metadata)	474-00001-05	JPSS-CDFCB-X-Vol-V
JPSS Common Data Format Control Book – External - Volume VI (Ancillary Data, Auxiliary Data, Messages, and Reports)	474-00001-06	JPSS-CDFCB-X-Vol-VI
JPSS Common Interfaces and Services ICD Volume 1: External	474-00002-01	JPSS-CIS-ICD
NPP Mission Data Format Control Book (MDFCB)	GSFC 429-05-02-42	NPP-MDFCB
NPP Spacecraft High Rate Data (HRD) RFICD to the Direct–Broadcast Stations	GSFC 429-03-02-24	NPP-SC-HRD-RF-ICD
NPP X-Band Data Format ICD	GSFC-429-05-02-102	NPP-X-Band-DFCB
NPOESS Data Mapping	D35853	NPOESS-Data-Mapping
Software Documents		
NPOESS Application Program Interface (API) User's Guide - Volume I (C++)	474-00019-01	JPSS-API-User-Guide-Vol-I
NPOESS Application Program Interface (API) User's Guide - Volume II (Java and Java Messaging Service (JMS))	474-00019-02	JPSS-API-User-Guide-Vol-II
Specifications		
NPOESS System Specification	SY15-0007	NPOESS-System-Spec
Data Processing Element Specification	SS23-0051	NPOESS-DPE-Spec
System Documents		
NPOESS Acronyms	474-REF-00123	NPOESS-Acronyms
NPOESS Glossary	474-REF-	NPOESS-Glossary

Document Title	Doc Number	Collection Short Name
	00119	

APPENDIX C – DATA MNEMONIC TO INTERFACE MAPPING

See 474-00001-01, CDFCB-X Vol. I, Appendix B for the Data Mnemonic to Interface Mapping.