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Interface Control Document Between the EOSDIS Core System (ECS) and the Science Investigator-Led Processing Systems (SIPS)

Volume 3: ECS-ASTER Observation Schedule File (OSF) Parser System Data Flows

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Greenbelt, Maryland

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Volume 3:

ECS-ASTER Observation Schedule File (OSF) Parser System Data Flows

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1. Introduction

1.1 Scope

This volume provides specific information about the interfaces between ECS at the EROS Data Center and the ASTER OSF Parser System. The ECS and the ASTER OSF Parser System are components of the EOSDIS. The interfaces defined are in support of routine production of ASTER Parsed Observation Schedule Files used in ASTER Expedited Science Processing at EROS Data Center. The files will be transferred according to the protocols defined in the SIPS ICD Volume 0.

Included are:

- Documentation references.
- Context information for the ECS-ASTER OSF Parser System interfaces.
- Identification of products generated by ASTER OSF Parser System for transfer to ECS for archive and distribution including data product granule size and transfer frequency.

1.2 Mission Description

The ASTER OSF Parser System provides an essential data product for the generation of ASTER Level 1 Expedited Data Sets (L1EDS). The Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) instrument is part of the EOS AM-1 (Terra) payload. The ASTER instrument is provided for flight on the AM-1 spacecraft by the Ministry of International Trade and Industry of Japan (MITI). The Earth Remote Sensing Data Analysis Center (ERSDAC) manages the ground data system for ASTER in Japan.

The ASTER Observation Schedule File (OSF) is generated by ERSDAC's ground data system on a daily basis, and this file is used by ERSDAC-developed PGEs to generate ASTER Level 1 data. In the US, the ERSDAC-developed PGEs will be used to generate Level 1 data products from expedited Level 0 data. OSFs provided by ERSDAC need to be pre-processed by the ASTER OSF Parser System in the United States so that they can be used specifically for L1EDS at EDC.

The ASTER OSF Parser System is funded and operated under the direction of the ESDIS Project. The hardware and software that comprise the system are housed at the Goddard Space Flight Center in Building 32.

1.3 System Assumptions and Constraints

The ASTER OSF Parser System will receive all necessary input for processing from sources outside of ECS. In particular, the ASTER Observation Schedule and ASTER One-Day Schedule files will be received by the ASTER OSF Parser System via an interface with ASTER Ground Data System (GDS) in Japan.

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2. ASTER OSF Parser System References

2.1 Parent Documents

423-41-57	Goddard Space Flight Center, Interface Control Document between the EOSDIS Core System (ECS) and the Science Investigator-led Processing Systems (SIPS). Volume 0.
None	Goddard Space Flight Center, ASTER OSF Parser Operations Agreement, August 1999.
None	Goddard Space Flight Center, ESDIS Project, ASTER OSF Parser Task Statement of Work.

2.2 Applicable Documents

The latest versions of all documents below should be used. The latest ESDIS Project documents can be obtained from URL: http://spsosun.gsfc.nasa.gov/ESDIS_Pub.html. ESDIS documents have a document number starting with either 423 or 505. The latest EOSDIS Core System (ECS) documents can be obtained from URL: http://edhs1.gsfc.nasa.gov/.

2.3 Information Documents

None

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3. ECS-ASTER OSF Parser System Interface Specifics

3.1 Interface Context

Figure 3-1 identifies the data flows between ECS at the EROS Data Center and ASTER OSF Parser System. These flows are accomplished via FTP. Descriptions of the data exchange framework supporting these flows are found in Volume 0 of the SIPS ICD. Specific characteristics of each direct data flow shown in Figure 3-1 including data types, file types, data transfer characteristics and format are described in section 4.1 below.

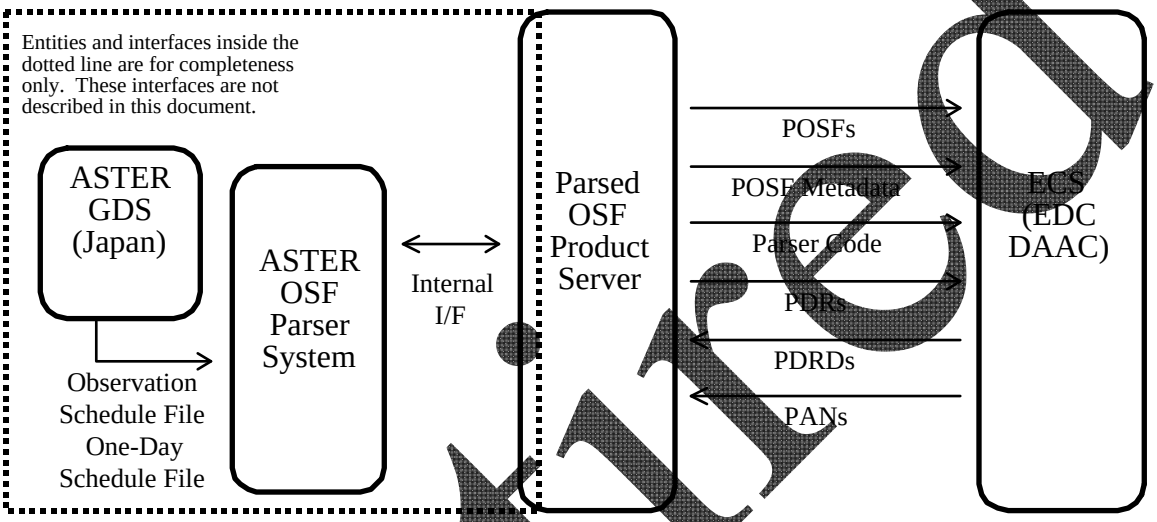

Figure 3-1. Context Diagram for ECS-ASTER OSF Parser System Interface.

3.2 Network Topology

Figure 3.2 shows a general overview of the network topology. The OSF Parser system is housed in Building 32 at GSFC and is connected to the EOSDIS Backbone Network (EBnet). EBnet is a private network linking the components of the EOSDIS. At the EDC DAAC, the ECS Ingest system is also connected to the EBnet. Data passed between the ASTER OSF Parser System and the ECS ingest system flows through the EBnet and is thereby isolated from the public Internet.

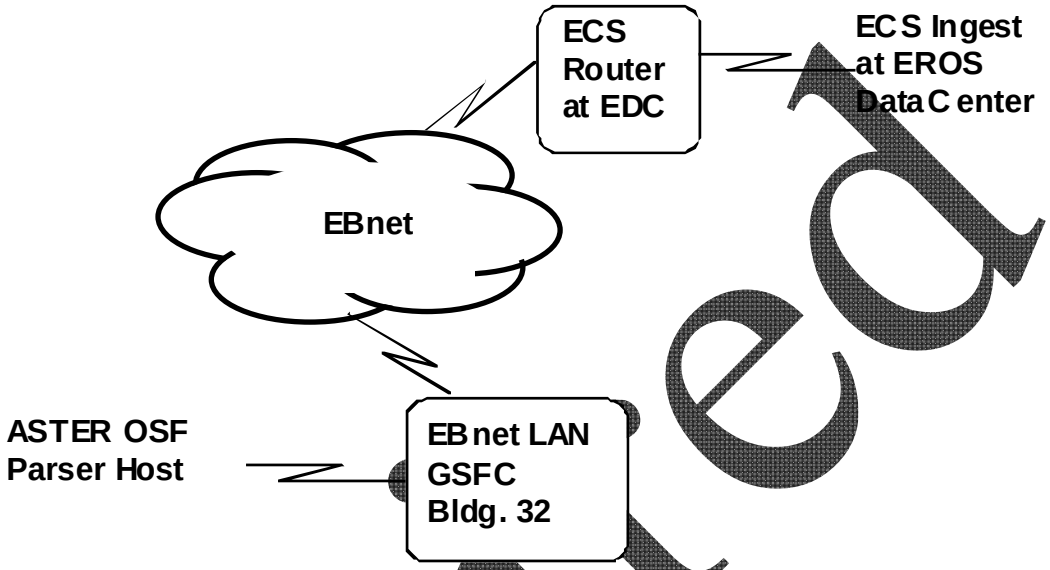

Figure 3-2. Network Interfaces between ECS and ASTER OSF Parser System

4. ASTER OSF Parser System Data Types and Volumes

4.1 Standing Order Subscriptions

Volume 0 of this ICD describes the subscription mechanism. There are no standing order subscriptions defined for this interface. All products used for production of the Parsed OSF file are either obtained from ASTER GDS in Japan or generated by the ASTER OSF Parser System.

Table 4-1. Types Obtained by Subscription Delivery

DATA_TYPE ShortName	FILE_ TYPE	Collection Description	Granule Size MB	Trigger/ Frequency
n/a	n/a	n/a	n/a	n/a

4.2 Products Produced by ASTER OSF Parser System for delivery to EROS Data Center

Figure 3-1 identifies the polling data flows between ECS at the EROS Data Center and ASTER OSF Parser System. These flows are accomplished via FTP. Descriptions of the data exchange framework supporting these flows are found in Section 4 of Volume 0 of the SIPS ICD. Specific characteristics of each direct data flow are described in this section; including data types, file types, data transfer characteristics and format.

The operational details of the data flows described here are detailed in a separate operations agreement document between the ASTER OSF Parser System and the EROS Data Center.

The PDR FILE_TYPES listed in Table 4-2 are defined for the ASTER OSF Parser System interface. This is a subset of the PDR types defined in Volume 0 of the SIPS ICD:

Table 4-2. Product Delivery Record FILE_TYPE Definitions

PDR FILE_TYPE	Description
SCIENCE	File is in unspecified format.
METADATA	File is ECS metadata in ODL format conformant with the ECS data model.
DAP	File is UNIX tar of a delivered algorithm package.

ASTER OSF Parser System is charged with routine production of the products listed in Table 4-3. Each POSF is a separate science granule. For each granule of the product, a separate metadata file is delivered.

Table 4-3. ASTER OSF Products

ESDT ShortName	ECS FILE_TYPE	Collection Description	Granule Size (KB)	Transfer Frequency
AST_POSF	SCIENCE METADATA	ASTER Parsed Observation Schedule File	0.2	5/day

The metadata for the Parsed OSF must contain the parameters outlined in Figure 4.1 below. The actual format of the metadata is ODL compliant with the B.0 data model.

```
Collection Metadata
  Collection Description Class
    Short Name = ast_posf
    Long Name = "ASTER Parsed Observation Schedule File"
    Collection Description = "Observation Schedule file Received
    from ASTER Ground Data System and Parsed for input to
    Level 1B Processing."
    Version ID = SHORT
  ECS Collection
    Revision Date = yyyy-mm-dd
    Processing Center = "ASTER OSF Parser System (GSFC)"
    Archive Center = EDC
Inventory Metadata
  ECS Data Granule
    Size MB ECS Data Granule = DOUBLE
    Local Granule ID = STRING
  Production Datetime = DATETIME
  Collection Description Class
    Short Name = ast_posf
    Version ID = SHORT
  Range Datetime
    Range Beginning Time = TIME
    Range Ending Time = TIME
    Range Beginning Date = DATE
    Range Ending Date = DATE
```

Figure 4-1. ASTER OSF Metadata Parameters

The products listed in Table 4-6 are associated with the products produced by the ASTER OSF Parser System.

Table 4-6. Other ASTER OSF Parser System Products

ESDT ShortName	ECS FILE_TYPE	Collection Description	Granule Size	Transfer Frequency
DAP	DAP METADATA	ASTER Observation File Parser Code, stored as a tar file	2 MB	Each time the parser is updated at ASTER OSF Parser System

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5. ASTER OSF Parser System-Unique Functional Requirements

None

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Abbreviations and Acronyms

ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
DAAC	Distributed Active Archive Center
DAP	Delivered Algorithm Package
EBnet	EOSDIS Backbone Network
ECS	EOSDIS Core System
EDC	EROS Data Center
EOSDIS	Earth Observing System Data Information System
EROS	Earth Resources Observations System
ERSDAC	Earth Resource Satellite Data Analysis Center (Japan)
ESDIS	Earth Science Data Information Systems (Project)
ESDT	Earth Science Data Type
FTP	File Transfer Protocol
GDS	(ASTER) Ground Data System (Japan)
GSFC	Goddard Space Flight Center
ICD	Interface Control Document
KB	Kilobyte
MB	Megabyte
ODL	Object Description Language
OSF	Observation Schedule File
PDR	Product Delivery Record
PGE	Product Generation Executive
POSF	Parsed Observation Schedule File
SIPS	Science Investigator-led Processing System

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