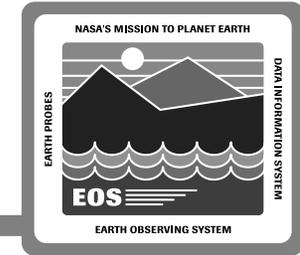


Operations Concepts

George Percivall

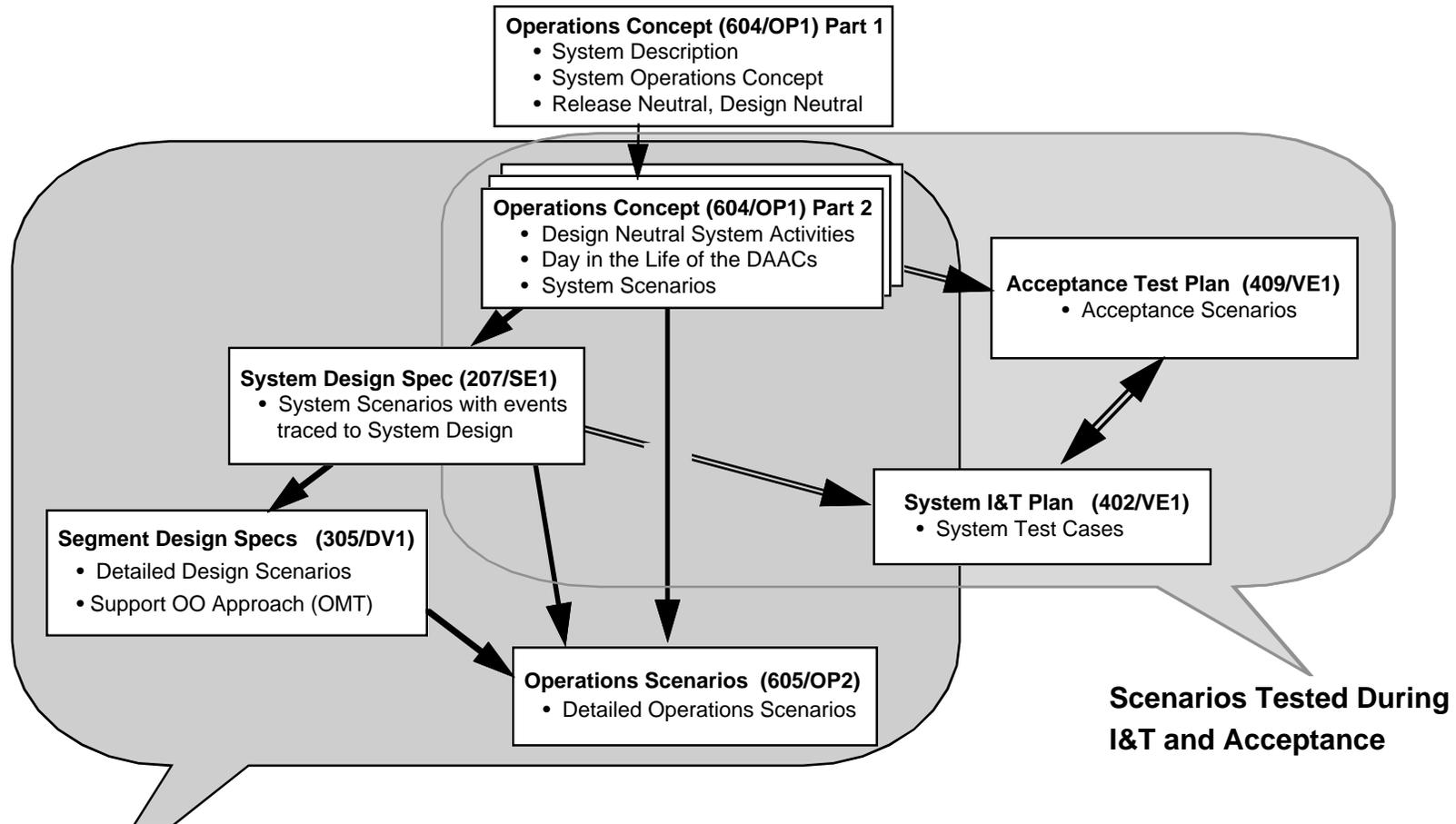
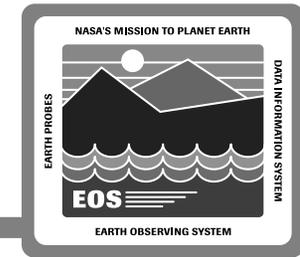
31 March 1995

PDR Direction for Revision of Operations Concept Document



- **Establish a configurable set of day-in-the-life operations scenarios and take them to the next lower level of detail**
 - **ECS Documents Containing Scenarios**
- **Release Specific Operations Concepts**
 - **Split Operations Concept Document (OCD) into Release Specific Volumes**
- **Site Specific Operations Concepts**
 - **OCD to contain Activities for a “Day in the Life” of each Site (DAACs & SMC)**
- **Developed in coordination with operational sites**
 - **Continue Ops Telecons**
 - **Operations Concepts Workshop (Release A - June 95)**

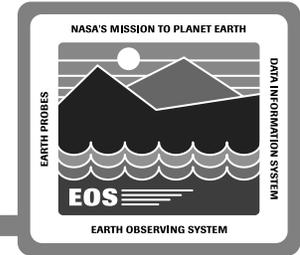
Relationships of ECS Documents Containing Scenarios



**Configurable Set of Scenarios,
With Increasing Detail**

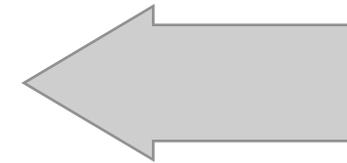
**Scenarios Tested During
I&T and Acceptance**

OCD Volumes



ECS Operations Concept: Part 1 - ECS Overview

- System Description
- System Scenarios
- Release Neutral, Design Neutral

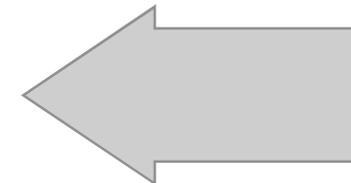


ECS Operations Concept: Part 2A - ECS Release A

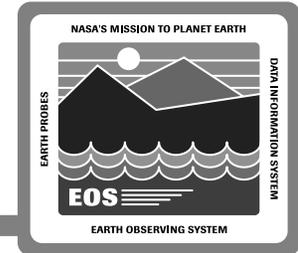
- How ECS will support Missions for Release A
- Design Neutral System Activities for Release A
- Day in the Life Activities for each Site in Release A
- Cross Site System Scenarios for Release A

ECS Operations Concept: Part 2B - ECS Release B

- How ECS will support Missions for Release B
- Design Neutral System Activities for Release B
- Day in the Life Activities for each Site in Release B
- Cross Site System Scenarios for Release B



ECS Ops Concept Doc, Part 1



1. Introduction

2. Related Documentation

3. EOS Overview

3.1 Mission to Planet Earth

3.2 Earth Observing System

3.4 ECS System Description

3.4.1 ECS Architecture

3.4.2 ECS External Interfaces

4. System Operations

4.1 EOSDIS Operations

4.1.1 Mission Operations

4.1.2 Science Data Operations

4.2 ECS Operations Locations

4.3 ECS Operations Concept

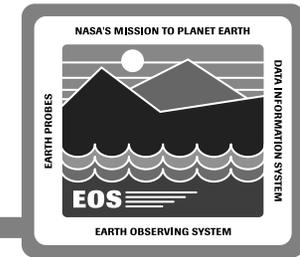
4.3.1 ECS System Management Operations

4.3.2 ECS Mission Operations

4.3.3 Science Data Operations

OCD Part 1, Section 3

EOS Overview



3.1 Mission to Planet Earth

3.2 Earth Observing System

3.4 ECS System Description

3.4.1 ECS Architecture

3.4.2 ECS External Interfaces

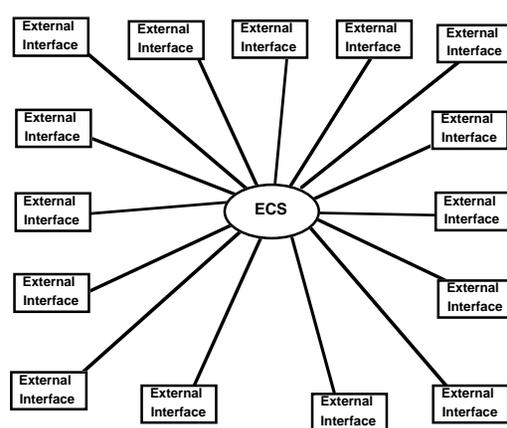


Figure 3-4. ECS Interfaces Context Diagram

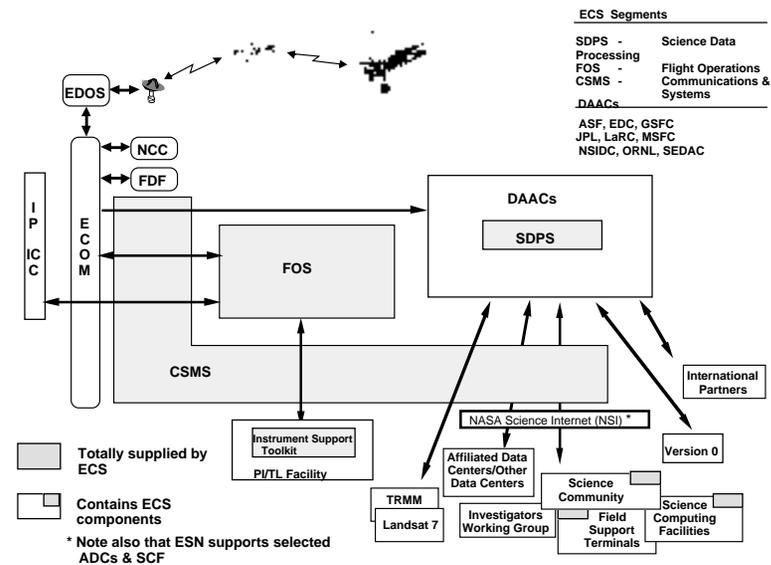
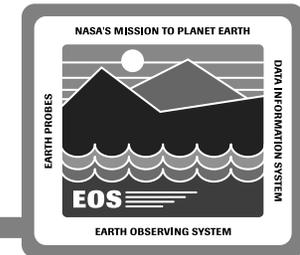


Figure 3-3. ECS System Architecture Context Diagram

OCD Part 1, Section 4 System Operations



4.1 EOSDIS Operations

4.1.1 Mission Operations

4.1.2 Science Data Operations

4.2 ECS Operations Locations

4.3 ECS Operations Concept

4.3.1 ECS System Management Operations

4.3.2 ECS Mission Operations

4.3.3 Science Data Operations

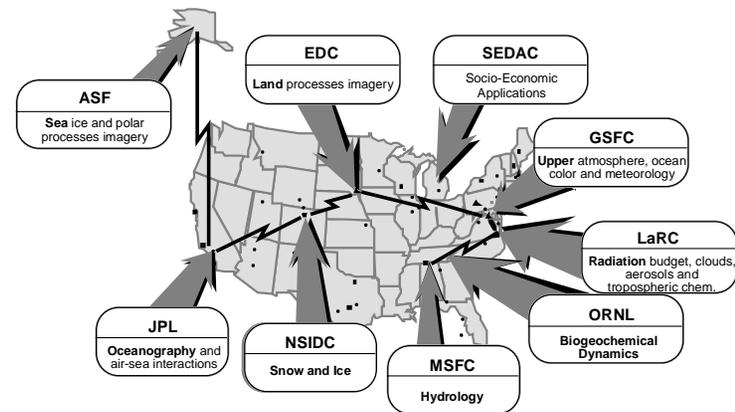


Figure 4-1. DAAC Locations and Expertise

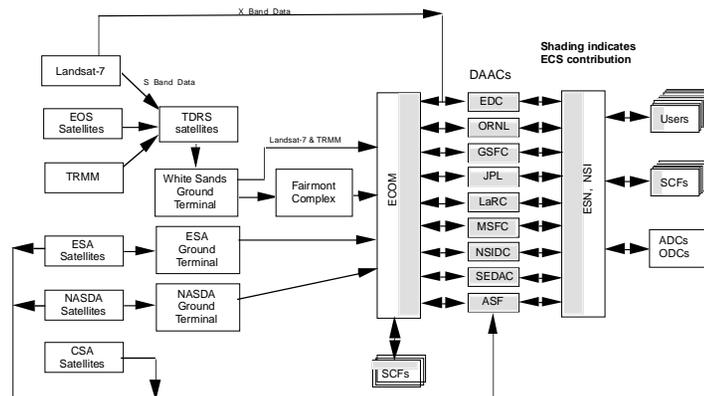
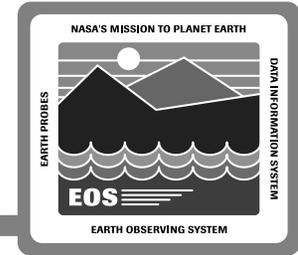


Figure 4-4. EOS Science Data Flow

ECS Ops Concept Doc, Part 2B

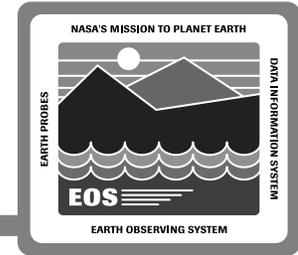
Release B Ops Concept



- 1. Introduction**
- 2. Related Documentation**
- 3. Release Overview**
 - How missions are supported by sites
- 4. Release System Activities**
 - Design Neutral, Product Neutral
 - “Piece Part” Activity Descriptions
- 5. Site Overviews**
 - How a site supports several missions
- 6. System Scenarios**
 - Cross site, product specific scenarios

Release Overview

Part 2B, Section 3



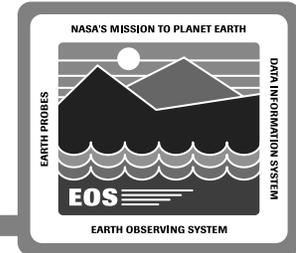
3. Release Overview

- 3.1. Release B Mission Statement
- 3.2. Missions Supported by ECS Release B
- 3.3. Interdisciplinary Investigators
- 3.4. Version 0 Data Migration
- 3.5. ECS Functionality (from SOW)
- 3.6. ECS Sites for Release B
- 3.7. Description of ECS Support for Missions

- Mission support viewpoint

Release B Missions

Part 2B, Section 3.2

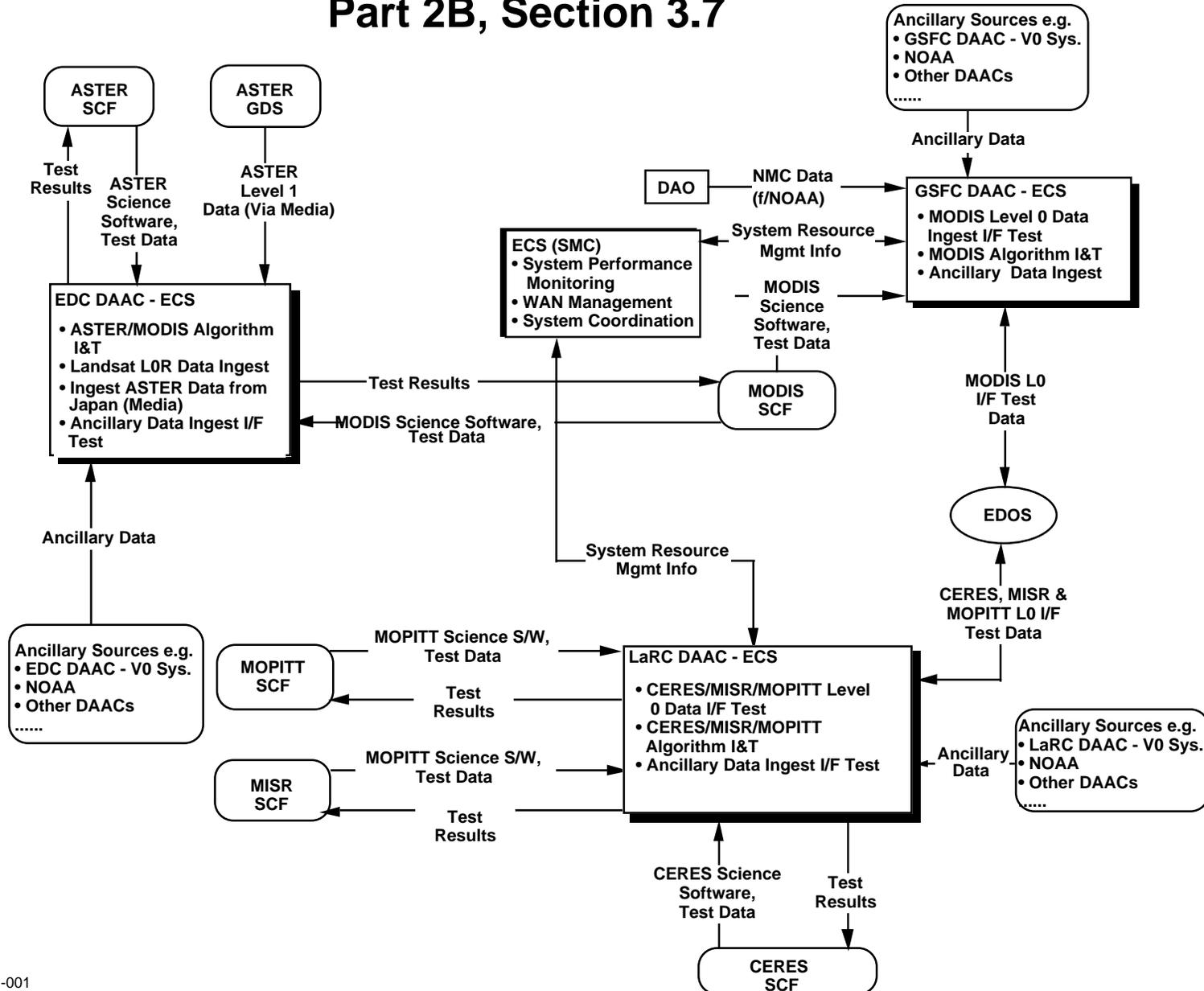


Mission	Instruments	Launch Date
TRMM	CERES, LIS, VIRS, PR, TMI	17 August 1997 Initially Supported by ECS Release A
EOS AM-1	ASTER, CERES, MISR, MODIS, MOPPIT	30 June 1998
Landsat 7	ETM+	May 1998
FOO	COLOR	May 1998
ADEOS II	SeaWinds	February 1999
ALT RADAR (CNES or GFO)	MR, SSALT	March 1999
ACRIMSAT	ACRIM	June 1999
METEOR	SAGE III	August 1998
ERS-1	SAR	July 1991
ERS-2	SAR	February 1992
JERS-1	SAR	Spring/Summer 1995
RADARSAT	SAR	September 1995

Plus Data Assimilation Office

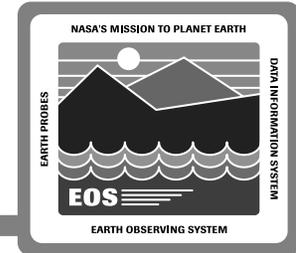
Mission Support Example (AM-1)

Part 2B, Section 3.7



Release B "Key" System Activities

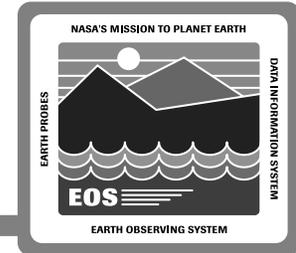
Part 2B, Section 4



4.1 Pull Users and User Services Activities	4.1.1 User Registration
	4.1.2 User Reporting
	4.1.3 Data Ordering and Tracking
4.2 Information Management Activities	4.2.1 Metadata
	4.2.1.1 Metadata Management
	4.2.2 Data Management
	4.2.2.1 Schema
	4.2.2.2 Sessions
4.3 Data Input Activities	4.2.2.3 Subscriptions
	4.3.1 Level 0 Data Ingest
	4.3.2 Electronic Ingest Of Ancillary And Other Non-Level 0 Data
	4.3.3 Media Ingest Of Ancillary And Other Non-Level 0 Data
4.4 Data Storage Activities	4.3.4 Version 0 (V0) Data Migration
	4.4.1 Working Storage and Data Archival
4.5 Data Distribution Activities	4.4.1 Working Storage and Data Archival
	4.5.1 Electronic Data Distribution
	4.5.2 Media Distribution

Release B "Key" System Activities

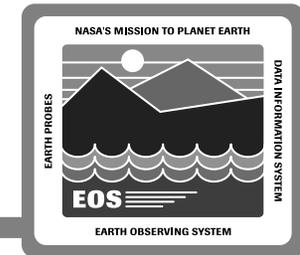
Part 2B, Section 4



4.6 Production Planning Activities	4.6.1 Plan Creation
	4.6.2 Plan Activation/Cancellation
	4.6.3 Planning Database Modification
	4.6.4 Plan Viewing / Monitoring
	4.6.5 Standard Production Request
	4.6.6 On-Demand Production Request
	4.6.7 Re-processing Production Request
	4.6.8 Planning Failure Recovery
4.7 Production Execution & Processing Activities	4.7.1 Production Processes
4.8 Science Software Integration & Test Activity	4.8.1 Initial Delivery
	4.8.2 Science Software Update

Release B "Key" System Activities

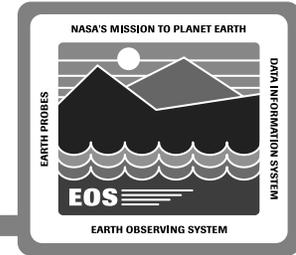
Part 2B, Section 4



4.9	System Management Activities	
4.9.1	Resource Planning	4.9.1.1 Resource Planning/Scheduling - Local Sites
		4.9.1.2 Resource Planning - System
4.9.2	Resource Management	4.9.2.1 Resource Management - Local
		4.9.2.3 Resource Management - System
4.9.3	Security Management	4.9.3.1 Security Management - Local
		4.9.3.2 Security Management - System
4.9.4	WAN Network Management	4.9.4.1 WAN Network Management - Monitoring
		4.9.4.2 WAN Network Management - Control
		4.9.4.3 WAN Network Management - Anomalous Condition
4.9.5	Performance Management	4.9.5.1 Performance Management - Local
		4.9.5.2 Performance Management - System
4.9.6	System Administration	4.9.6.1 System Administration (Local)
		4.9.6.2 System Administration (System)
4.9.7	Configuration Management (CM)	4.9.7.1 System Configuration Management
4.9.8	Accounting and Billing	(no subsections)
4.9.9	Backup and Recovery	(no subsections)

Site Overviews

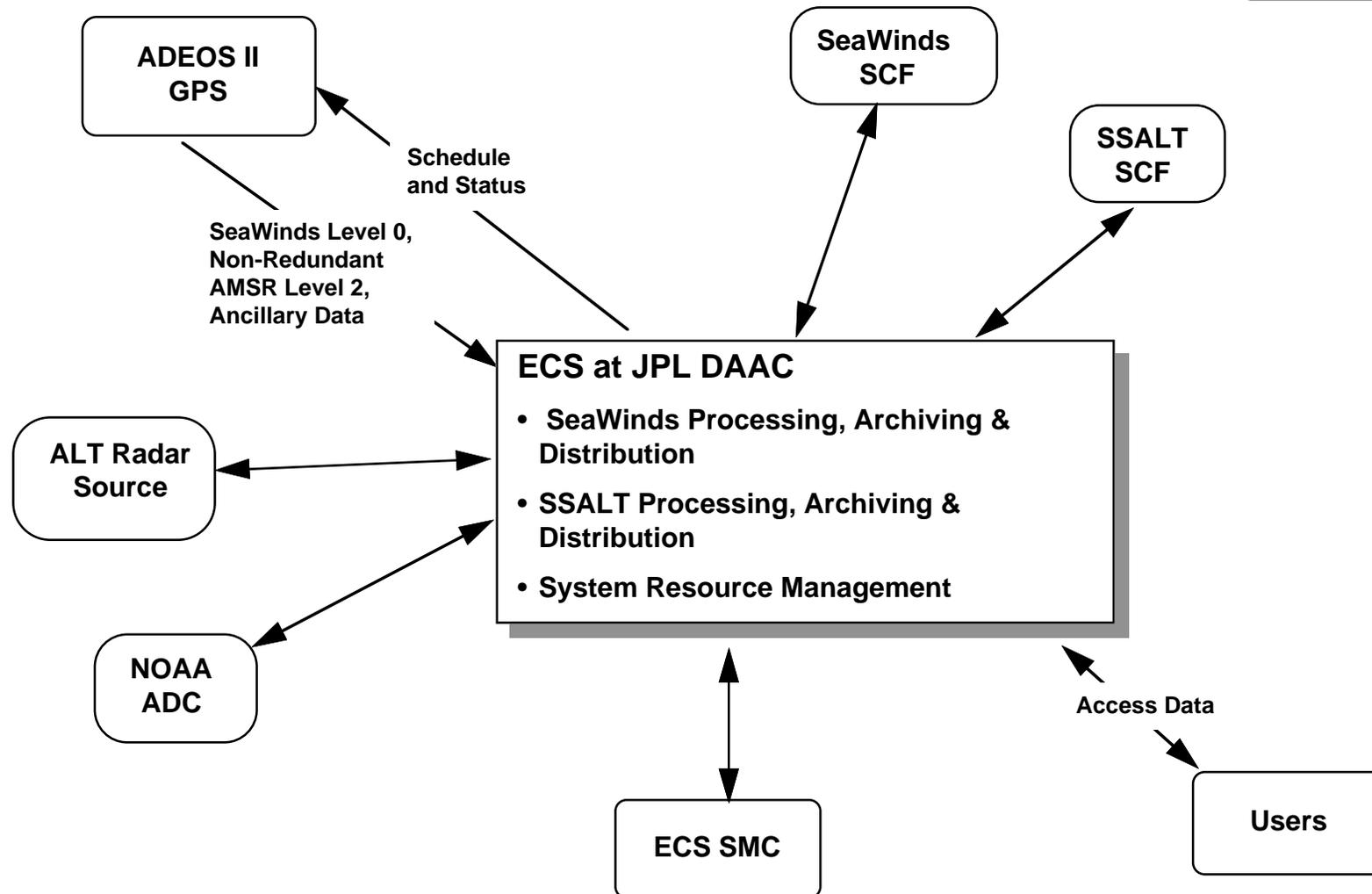
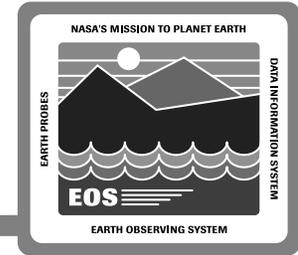
Part 2B, Section 5



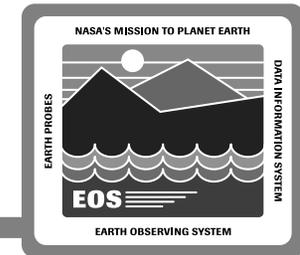
Section	Title	Content
5.X.1	Key Interfaces	<ul style="list-style-type: none">• Key interfaces for carrying out mission support• Interface Diagram for each site• References to IRDs/ICDs
5.X.2	Mission and Operations Activities	<ul style="list-style-type: none">• Site Operations to support missions
5.X.3	Day in the Life	<ul style="list-style-type: none">• Operations for a nominal day at each site• Based on activities described in Section 4• Day in the Life Diagram

X = Section for each DAAC (except SEDAC) and SMC

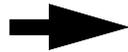
Figure 5-8 Release B Key Interfaces: JPL DAAC-ECS



DAAC Operational Mode Definitions

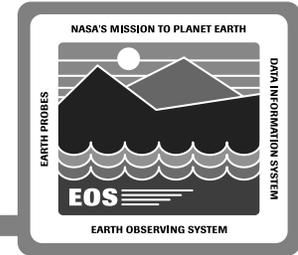


DAAC Mode	Definition
Release A Installation and Acceptance	Installation of Release A custom software, COTS software and hardware at a site. Regression testing as required to verify installation. Acceptance testing activities.
IV&V	TBD
Activation	Initial activation of DAAC
Nominal-Full Staff	Typical mode for DAAC operations. Includes all normal processing and user services. Does not include Release I&T or Launch activities.
Nominal-Reduced Staff	Similar to Nominal-Full Staff but with no user services or non-real time services. Does not include Release I&T or Launch activities.
Subsequent Release Installation and Acceptance	Nominal (full or reduced staff) activities along with ECS release installation and acceptance activities
Campaign	Nominal (full or reduced staff) activities along with activities to support a campaign of data acquisition for a specific opportunity.
TOO	Nominal (full or reduced staff) activities along with activities to support a TOO of data acquisition for a specific opportunity.
Pre-Launch	Nominal (full or reduced staff) activities along with pre-launch support activities
Launch	Nominal (full or reduced staff) activities along with launch support activities



Modes are to be exhaustive and non-overlapping

Activities per Mode

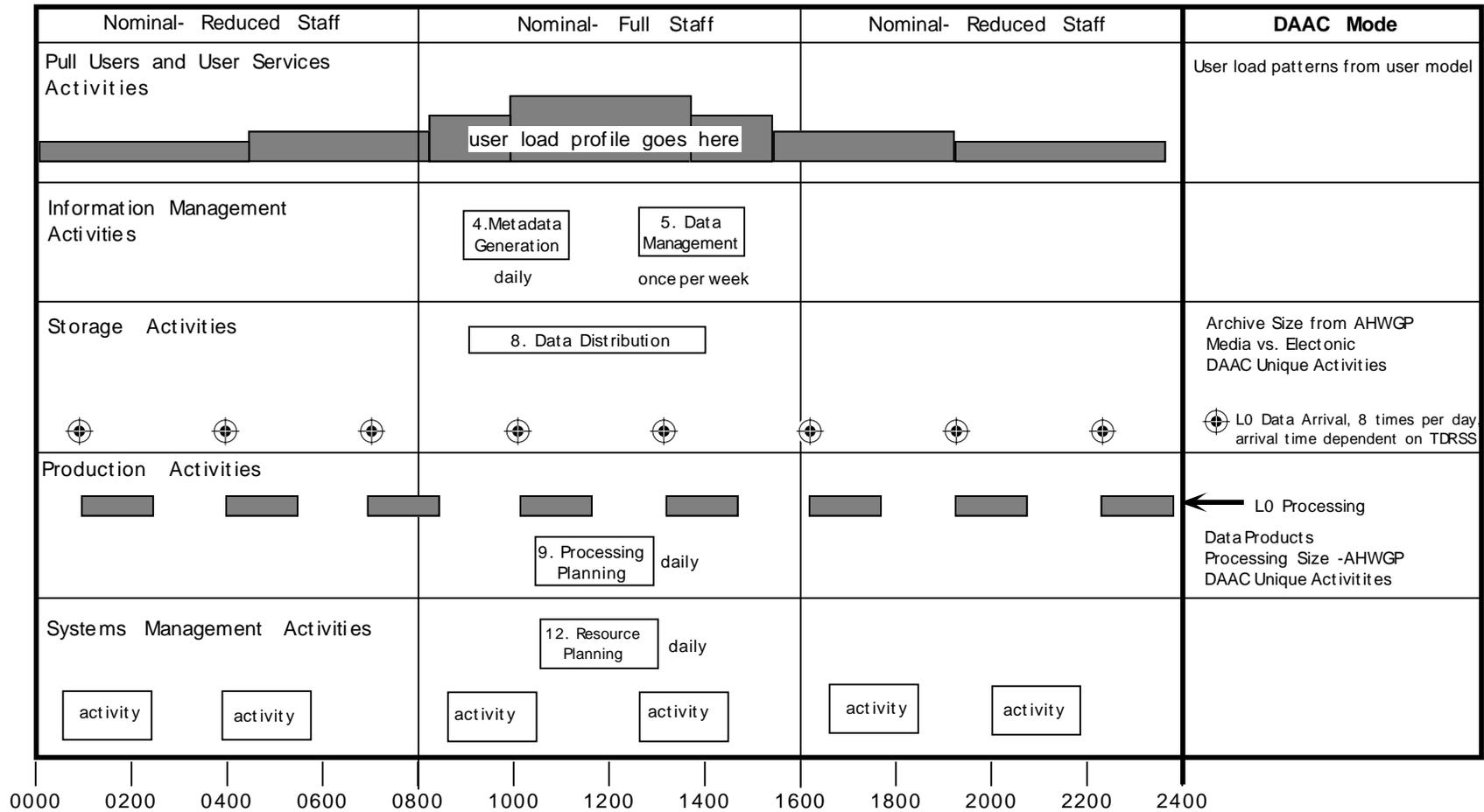


DAAC Mode	System Activities from Section 4																		Comments
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Release A Installation and Acceptance																			<ul style="list-style-type: none"> • See TBD for Installation Plan • See TBD for Acceptance Test Plan
IV&V																			<ul style="list-style-type: none"> • See TBD for ECS support of IV&V
Nominal-Full Staff																			Activities allowed in a mode to be indicated in this table
Nominal - Reduced Staff																			
Subsequent Release Installation and Acceptance																			<ul style="list-style-type: none"> • See TBD for Installation Plan • See TBD for Acceptance Test Plan
Campaign																			
TOO																			
Pre-Launch																			
Launch																			

Activities allowed but not required in a mode

Day in the Life: GSFC DAAC - ECS Release B

Section 5.X.3



Template for building the Day in the Life Descriptions for each DAAC and the SMC

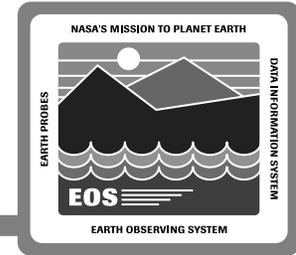
Day in the Life Descriptions will be for a Nominal Mode

The icons in the present version of this diagram show the way the information will be displayed

The frequency of events presently in the diagram are not accurate

System Scenarios

Part 2B, Section 6



6.1 System Management Scenarios

- 6.1.1 Cross-DAAC Software Upgrade Coordination
- 6.1.2 Cross-DAAC System Resource Management
- 6.1.3 System Management Recovery Scenario

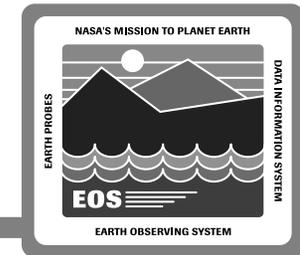
6.2 Push Scenarios

- 6.2.1 MODIS Planning and Processing
- 6.2.2 Cross-DAAC Production Coordination
- 6.2.3 Push Recovery Scenario

6.3 Pull Scenarios

- 6.3.1 Development of Land Surface Hydrologic Model
- 6.3.2 Development of Methods to Integrate Data Sets of Varying Resolutions
- 6.3.3 Pull Recovery Scenario

Operation Concepts Schedule



	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov
Part 1 Final Draft Return Comments Final 604, Part 1	@RIR by 4/21 ← @								
Part 2A Presentation Final 604, Part 2B	@Ops Workshop @CDR w/605 - Ops Scenarios								
Part 2B Annotated Outline Return Comments Baseline Outline Working Notebook Final @ CDR	@RIR by 4/7 ← @ @IDR								