

603-CD-005-002

EOSDIS Core System Project

ECS Operational Readiness Plan for the PM-1/Aqua Mission

October 2000

Raytheon Company
Upper Marlboro, Maryland

ECS Operational Readiness Plan – PM-1/Aqua Mission

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RESPONSIBLE ENGINEER

<u>Rodney Creecy /s/</u>	10/10/00
Rodney Creecy, Scientist/ Engineer	Date
Maintenance and Operations	
EOSDIS Core System Project	

SUBMITTED BY

<u>Gary W. Sloan /s/</u>	10/13/00
Gary Sloan, Manager	Date
Maintenance and Operations	
EOSDIS Core System Project	

Raytheon Company
Upper Marlboro, Maryland

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Preface

This document is a contract deliverable with an approval code of 1. As such, it requires Government review and approval prior to its acceptance and use. Class 1 documents will be under Contractor Configuration Control Board/Configuration Management Board control. Contractor-approved changes to documents under contractor configuration control are handled in accordance with Class I and Class II change control requirements described in the EOS Configuration Management Plan. Class I changes approved by the contractor CCB are forwarded to the Government for final approval and are not to be implemented until contractual direction is received from the Government. Class II changes approved by the contractor configuration control board are implemented under the board's authority.

This document does not address the Flight Operations System *Operations Readiness Plan*, which is now under separate cover as ECS #603-CD-004-001.

Any questions should be addressed to:

Data Management Office
The ECS Project Office
Raytheon Systems Company
1616 McCormick Dr.
Upper Marlboro, MD 20774-5301

Technical questions should be addressed to Rodney Creecy (301-925-0314 or e-mail to rodney@eos.hitc.com) or Lonney Head (301-925-0544 or e-mail to lhead@eos.hitc.com) of the System Operational Support Office.

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Abstract

This ECS PM-1/Aqua Operational Readiness Plan (DID 603/OP1) identifies and describes the activities required to prepare for, verify, and review the operational readiness of ECS PM-1/Aqua operations support. The plan covers the readiness of Maintenance and Operations (M&O) personnel, procedures, hardware, software, and databases. The roles and responsibilities of all organizations participating in this effort are established.

ECS PM-1/Aqua Operational Readiness verification consists of determining the status and connectivity of system components by system monitoring tools; assessment of staffing levels and certification; visual status checks; and the execution of Operational Readiness Exercises (ORE). The results from the ORE at all levels of the ECS PM-1 Aqua system are reviewed collectively at the system Operational Readiness Review (ORR) to declare the system ready for operations.

Keywords: ECS Operational Readiness, operational, operations, readiness, M&O, Maintenance and Operation

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Abbreviations and Acronyms

1. Introduction

1.1 Identification

This Operational Readiness Plan, CDRL item 111, whose requirements are specified in Data Item Description DID 603/OP1, is a required deliverable under the EOSDIS Core System (ECS) Contract (NAS5-60000). This is the initial submittal of this document for the PM-1/Aqua mission.

1.2 Scope

This Operational Readiness Plan identifies those activities required to prepare the ECS for operation of the PM-1/Aqua mission, and to assure that all required ECS functions are on-line and in operational-ready status in preparation for an operational system event. It covers the schedule period from Release 5A to 5B transition through the point of declaring ECS ready [Launch Readiness Decision (LRD)] for initial operations mission events for PM-1/Aqua. That readiness review is termed the ECS PM-1/Aqua Operations Readiness Review (ORR) and is a prerequisite to ECS participation in PM-1 Mission Readiness activities.

Because extensive planning, coordination and documentation is underway to support the Transition from Release 5A to 5B which happens to be coincident with preparations for DAAC/SMC Aqua Operational readiness, this M&O authored document will present a high level view of the Operational Readiness Plan. This cost effective approach will avoid double documentation, keep the authority for planning with the responsible ESDIS Programmatic Elements, and yet provide the reader with a sense of the overall plan.

Activities within the preparation and operational readiness periods are performed by several organizations as introduced in section 3.1.2, EGS Integration and Test, and defined in more detail later in the plan by specific sites (GSFC, EDC, LaRC, and NSIDC DAACs and the SMC). Flight elements are discussed in the Flight Operations System (FOS) Operational Readiness Plan under separate cover.

This plan identifies and describes the activities required to prepare, verify, and review the operational readiness of all ECS Release 2.0 Maintenance and Operations staff, procedures, hardware, software, and databases for PM-1 operations support. The relationship, roles, and responsibilities of all organizations participating in parts of this necessarily cooperative effort are explicitly established.

1.3 Document Organization

Section 1 describes the structure and scope of the document, identifies the topics covered, purpose and objectives, and the document organization.

Section 2 identifies the documentation from which this plan takes its authority, and to which the reader can refer for further information on the subject.

Section 3 identifies, describes, and reviews overall schedules; assigns responsibility for activities at the ECS System level; describes on-site tailoring of mission-specific procedures/ tasks and their associated roll-up for system-level review that must be accomplished before the ECS PM-1/Aqua Operational Readiness Review (ORR) can be successfully concluded. Those activities include high-level prerequisites to ORR, the exercises required to verify operational readiness, and the ORR itself. The ECS Operational Readiness Exercises (ORE) for each level of the system are identified and described as mission critical or mission essential and the purpose, scope, authority, criteria, and schedule for the ORR are detailed.

Section 4 identifies, describes, schedules, and assigns responsibility for the activities that must be accomplished at GSFC DAAC before the ECS PM-1/Aqua Operational Readiness Review (ORR) can be successfully concluded. Those activities include site-specific (and site-unique) prerequisites to ORR, the exercises required to verify operational readiness, and readiness for the ECS ORR itself. Sections 5, 6, and 7 describe similar information for EDC, LaRC, and NSIDC.

Section 8 describes schedules and assigns responsibility for the activities that must be accomplished at the ECS SMC before the ECS PM-1/Aqua Operational Readiness Review (ORR) can be successfully concluded. Those activities include PM-1/Aqua site-specific (and site-unique) prerequisites to ORR, the exercises required to verify operational readiness, and readiness for the ECS ORR itself.

Abbreviations and Acronyms contains the definitions for the abbreviations and acronyms used in this document.

2. Related Documents

2.1 Parent Documentation

The parent document is the document from which the scope and content of this ECS Operational Readiness Plan is derived.

603-CD-003	ECS Operational Readiness Plan
422-11-19-05	EOS Aqua Ground System Requirements Document, version June 2000
423-41-01	Goddard Space Flight Center, EOSDIS Core System (ECS) Statement of Work

2.2 Applicable Documentation

The following documents are referenced within this ECS Operational Readiness Plan, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume:

302/DV1	SDPS & CSMS Release B and FOS Release A and B Facility Plans
311/DV2	Database Design and Database Schema Specification
319/DV1	ECS I&T Plan
601-CD-001	Maintenance and Operations Management Plan for the ECS Project
603-CD-004	ECS Flight Operations System Operations Readiness Plan Release B
604-CD-001	ECS Operations Concept for the ECS Project: Part 1-- ECS Overview
604-CD-003	ECS Operations Concept for the ECS Project: Part 2A -- ECS Release A
605/OP2	Operations Scenarios for the ECS Project: Release-A
607-CD-001	Maintenance and Operations Manual for the ECS Project
608/OP1	ECS Operations Plan
611/OP3	Maintenance & Operations Procedures
622-CD-001	ECS Training Plan
625/OP3	Training Material
626-CD-100	M & O Certification Plan
627-CD-002	Security Risk Management Plan

162-TD-001	Science Software I&T operational Procedures for the ECS Project (aka The Green Book)
211-TP-005	Transition Plan 5A to 5B for the ECS Project
SO-1-013	Test Data Configuration Management, Project Instruction
420-05-03	Goddard Space Flight Center, Earth Observing System (EOS) Performance Assurance Requirements for the EOSDIS Core System (ECS)
423-41-02	Goddard Space Flight Center, Functional and Performance Requirements Specification for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS)
NAS5-32605-1109	EOS Ground System (EGS) Integration And Test Program Plan, Baseline (Deliverable 1109) DAAC Rehearsal Plans <i>Draft EGS Science System and Operations Certification Plan Development Process</i> document, 11 November 1997 version

2.3 Information Documentation

The following documents, although not referenced herein and/or not directly applicable, do amplify or clarify the information presented in this document. These documents are not binding on the content of the ECS Operational Readiness Plan.

305-CD-004	Overview of SDPS and CSMS System Design Specification for the ECS Project
305-CD-005	SDPS Client Subsystem Design Specification for the ECS Project
305-CD-006	SDPS Interoperability Subsystem Design Specification for the ECS Project
305-CD-007	SDPS Data Management Subsystem Design Specification for the ECS Project
305-CD-008	SDPS Data Server Subsystem Design Specification for the ECS Project
305-CD-009	SDPS Ingest Subsystem Design Specification for the ECS Project
305-CD-010	SDPS Planning Subsystem Design Specification for the ECS Project
305-CD-011	SDPS Data Processing Subsystem Design Specification for the ECS Project
305-CD-012	CSMS Communications Subsystem Design Specification for the ECS Project

305-CD-013	CSMS Systems Management Subsystem Design Specification for the ECS Project, Final
305-CD-014	GSFC DAAC Design Specification for the ECS Project
305-CD-015	LaRC DAAC Design Specification for the ECS Project
305-CD-017	EDC DAAC Design Specification for the ECS Project
305-CD-018	Data Dictionary for Subsystem Design Specification for the ECS Project
305-CD-019	System Monitoring and Coordination Center Design Specification for the ECS Project
409/VE1	ECS Overall System Acceptance Test Plan
411/VE1	ECS Overall System Acceptance Test Procedures
500-1002	Goddard Space Flight Center, Network and Mission Operations Support (NMOS) Certification Program

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3. Overall ECS PM1/Aqua DAAC Operational Readiness Plan

This operational readiness plan identifies the activities and events that will occur at each DAAC as part of the ECS PM1/Aqua readiness effort and the necessary support that M&O personnel must provide to such activities in accordance with the EOS Aqua Ground System Requirements Document.

The M&O Operational Readiness and Performance Assurance function supports ECS operations at all locations. It is the focal point for the planning and monitoring of all training, operational exercises, operator certification, and support for system rehearsals and certification, including the preparation of operations procedures and building of data bases.

The following subsections provide the EOS Aqua mission-specific requirements for the EOSDIS Core System (ECS) Distributed Active Archive Centers (DAACs) and the Langley Research Center (LaRC) Tropical Rainfall Measurement Mission (TRMM) Information System. (LaTIS). The DAAC s involved in the Aqua mission are the GSFC DAAC, the National Snow and Ice Data Center (NSIDC) DAAC, the EROS Data Center (EDC) DAAC and the LaRC DAAC.

9100 GSFC DAAC Requirements

9100.1

ECS at the GSFC DAAC shall perform the principal functions of ingesting, archiving and distributing MODIS and AIRS instrument suite (includes the AIRS, AMSU, and HSB instruments) Level 0 data from EDOS.

9100.2

ECS at the GSFC DAAC shall generate, archive and distribute MODIS Level 1 data products and a limited set of Level 2 and Level 3 products and provide these products to MODAPS for higher-level processing.

9100.3

ECS at the GSFC DAAC shall generate, archive, and distribute AIRS instrument suite Level 1 and higher data products.

9100.4

ECS at the GSFC DAAC shall perform the principal functions of ingesting, archiving and distributing MODIS higher-level ocean and atmospheric data from MODAPS (including metadata, browse data, and associated correlative data as appropriate).

9100.5

ECS at the GSFC DAAC shall provide data to the MODIS SCFs and receive QA metadata updates from the MODIS SCFs and QA Facilities.

9100.6

ECS at the GSFC DAAC shall perform ingest and archive of the EMOS-generated carryout files (i.e., spacecraft housekeeping carryout files for MODIS and AIRS and attitude carryout files) and history data, and provide the appropriate history data back to EMOS upon EMOS request.

9100.7

ECS at the GSFC DAAC shall ingest and archive definitive orbit, and predicted orbit data from the FDS.

9100.8

ECS at the GSFC DAAC shall data preprocess (DPREP) orbit data (i.e., definitive orbit or predicted orbit data from FDS), and attitude carryout files from EMOS into a form usable by the science software.

9100.9

ECS at the GSFC DAAC shall provide data to the AIRS SCFs and receive QA metadata updates from the AIRS SCFs.

9200 NSIDC DAAC Requirements

9200.1

ECS at the NSIDC DAAC shall perform the principal functions of ingesting, archiving and distributing AMSR-E Level 0 science data and associated Ground Based Attitude Determination (GBAD) data from EDOS.

9200.2

ECS at the NSIDC DAAC shall perform the principal functions of ingesting, archiving, and distributing MODIS higher-level snow and sea ice data from MODAPS (including metadata, browse data, and associated correlative data as appropriate).

9200.3

ECS at the NSIDC DAAC shall perform the principal functions of ingesting, archiving, and distributing AMSR-E Level 1A data (including metadata) from the JPL PO DAAC.

9200.4

ECS at the NSIDC DAAC shall perform the principal functions of ingesting, archiving, and distributing AMSR-E Level 2 and Level 3 data (including metadata, browse data, and associated correlative data as appropriate) from the AMSR-E SIPS at MSFC GHCC.

9200.5

ECS at the NSIDC DAAC shall provide data to and receive QA metadata updates from the AMSR-E SIPS at MSFC GHCC.

9200.6

ECS at the NSIDC DAAC shall provide data to the MODIS SCFs and receive QA metadata updates from the MODIS QA Facility.

9200.7

ECS at the NSIDC DAAC shall provide all L0 AMSR-E science and GBAD data to NASDA for the first 90 days of the mission only, and shall serve as a backup for these data after the first 90 days.

9300 EDC DAAC Requirements

9300.1

ECS at the EDC DAAC shall perform the principal functions of ingesting, archiving and distributing MODIS higher-level land data from MODAPS (including metadata, browse data, and associated correlative data as appropriate).

9300.2

ECS at the EDC DAAC shall provide data to the MODIS SCFs and receive QA metadata updates from the MODIS QA Facility.

9400 LaRC DAAC Requirements

9400.1

ECS at the LaRC DAAC shall ingest and archive definitive orbit, and predicted orbit data from the FDS.

9400.2 No longer Required.

ECS at the LaRC DAAC shall data preprocess (DPREP) orbit data (i.e., definitive orbit or predicted orbit data from FDS), and attitude carryout files from EMOS into a form usable by the science software.

9400.3

ECS at the LaRC DAAC shall provide copies of definitive orbit, and predicted orbit data from the FDS to LaTIS.

9400.4 No longer Required

ECS at the LaRC DAAC shall perform ingest and archive of the EMOS generated attitude carryout files.

9500 LaTIS Requirements at the LARC DAAC

9500.1

LaTIS at the LaRC DAAC shall perform the principal functions of ingesting, archiving and distributing CERES Level 0 data from EDOS.

9500.2

LaTIS at the LaRC DAAC shall generate, archive, and distribute CERES Level 1 and higher data products.

9500.3

LaTIS shall ingest Data Pre-Processing (DPREP) output from the LaRC DAAC.

9600 ECS DAAC System-Level Requirements

9600.1

ECS shall support Aqua pre-launch testing activities such as operational readiness testing and simulations at all DAACs.

9600.2

ECS shall support Aqua operations and testing concurrently at all DAACs while simultaneously supporting Landsat-7, ACRIM, and Terra operations and system upgrades.

9600.3

ECS at all DAAC sites shall support a rolling archive strategy for Aqua data whose size is based on the following assumptions: Level 1A data is to be deleted 6 months after processing to Level 1B, Level 1B data is to be deleted 6 months after reprocessing, Level 2 data is to be deleted 6 months after processing to L3, L3 data is to be deleted 6 months after reprocessing.

9600.4

ECS shall support 2-way interoperability with the EOS Data Gateway (EDG) at all DAACs and LaTIS.

3.1 Prerequisites to DAAC ORE and ORR

This section identifies the major DAAC activities and events which must be successfully completed prior to M&O exercises to determine readiness to perform system operations. The major difference between the approach taken for AM1/Terra and PM1/Aqua Operations Readiness Planning is that for Aqua the entire Terra version of ECS and its maintenance infrastructure exists; thus ECS simply evolves to accommodate Aqua.

3.1.1 ECS System Turnover Activities for PM1/AQUA

The ORR and ORE events for Aqua are not precisely linked to a given ECS Release Turnover event but, rather, are more closely coupled with the programmatic evolution of ECS. Mainly, this evolution adds capacity and performance needed to accommodate the increased volume stemming from the addition of Aqua sensors. For example, ECS Release 5B is technically a Terra evolutionary release which will be in place at the DAACs prior to Aqua Initial Checkout. A nominal patch to Release 5B for Aqua ESDTs will enable Aqua rehearsals. ECS will continue to evolve during the Aqua initial checkout phase to add capacity and performance needed to support full Aqua operations.

Thus there will be no specific ECS Release Readiness Review for ECS PM1/Aqua. Nevertheless, the DAACs maintain their own Aqua Operations Readiness Schedule. These schedules are presented in the following sections for each DAAC.

3.1.2 EGS Integration and Test

The ESDIS Ground Systems (EGS) Integration and Test Program is a certification process which will verify the necessary capabilities are in place to support the functions to support the PM1/Aqua mission.

The EGS I&T Program consists of two main efforts: 1) the Confidence Test Program comprised of the Interface Confidence Test series (ICT), and 2) the Flight Projects Joint Testing Program comprised of the System Confidence Test Series (SCT)

As part of the Certification Test development process it will be necessary to identify all essential operational activities which occur during a day, at each DAAC. This will include all operational activities along with the frequency and times of occurrence during a day. The Timeline Charts will be used as a master reference to develop the “3 Days in the Life” Certification Test scope, and will be cross-referenced to test packages and DAAC operations procedures which verify the activities. This test shall be referred to as SCT. SCT events are found on the DAAC’s Aqua Operations Readiness Schedule. SCT is documented in a separate test plan. Some highlights of SCT are discussed below.

3.1.2.1 Purpose

The EGS certification will verify the capabilities to support the functions to support the PM1/Aqua mission.

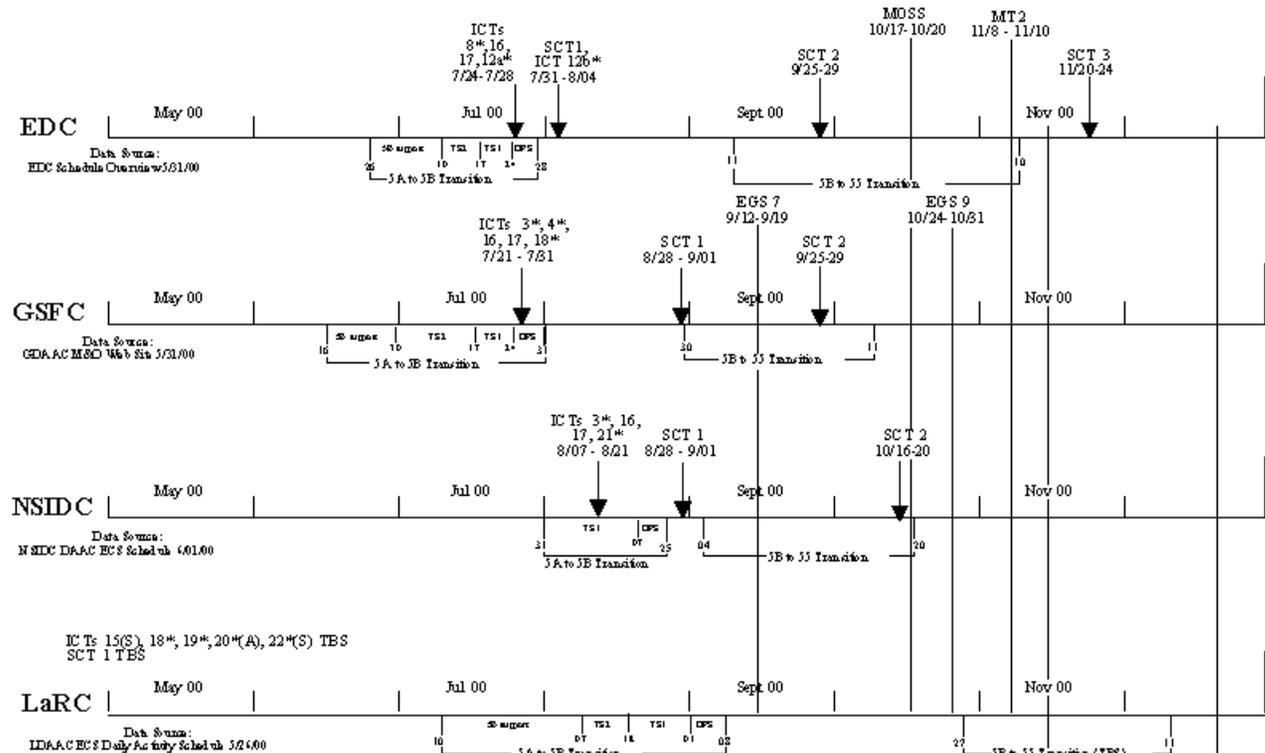
The EGS I&T Program consists of two main efforts: 1) the Confidence Test Program, and 2) the Flight Projects Joint Testing Program.

The Confidence Test Program focuses on demonstrations of key functionality and mission critical requirements, and emphasizes operability. The objective of the overall EGS I&T Program is to demonstrate and certify EGS Mission Readiness as a precursor to Operations Readiness Testing conducted by the Mission Operations Manager and Science Operations Manager. A continuously evolving set of confidence test packages is maintained at the EGS Component, EGS Interface, and EGS System levels. The EGS I&T team leads the development and execution of individual confidence test packages. Confidence test packages include test procedures, test data, and other supporting material, and are designed to exercise the system in its final form.

3.1.2.2 Launch Critical/Essential Functional Milestones

A detailed EGS Science System and Operations Certification planning and preparation schedule needs to be developed after review and revision of DAAC Launch Critical and Launch Essential functions. These milestones are identified for each DAAC in the following sections. The major DAAC activities and events, which must be successfully completed prior to ORR, are found in the schedule below.

Aqua/5B Test Activities by DAAC



- Key to ICT's**
- 3* = EDOS
 - 4* = NOAA
 - 8* = Landsat 7
 - 12* = Aster GDS
 - 15 = SAGE MOC
 - 16 = EDG
 - 17 = M ODAPS
 - 18* = EMOS/FDS
 - 19* = L ATIS
 - 20* = ACRIM
 - 21* = AMSR + SIPS
 - 22* = SAGE SIPS

NO IE: All DAAC activity dates subject to negotiation/revision

ICI = Interface Confidence Test (Asterisk Test)
 SUI = System Confidence Test (Asterisk Test)
 MI = Mission Test 2 (Spacecraft Test)
 MOSS = Mission Ops and Science Systems (ESII Start)
 EGS = EGS Ground System (MRTI Test)

Aqua ORR 11/15/00
 Aqua LRD 12/21/00
 Aqua tests by DAAC 9/6/01/00

* = Priority tests

3.1.2.3 M&O Roles and Responsibilities

The EGS I&T Team requests that M&O personnel be designated as part of the test team for the duration of the test period. That will require people from positions at each DAAC and the SMC. Multiple shift operations may be required to complete all planned EGS I&T procedures.

3.1.2.4.2 Office Resources

The EGS I&T Team may send people to each site in the role of Test Conductor and team members. They will require access to specific infrastructure such as desk space, telephone, computer with office automation tools, FAX, and copier provision. The EGS Team and the DAAC Manager will negotiate the specifics prior to the test.

3.1.2.4.3 System Access

Dedicated ECS system access **shall not be** required for the scheduled I&T activity. The test will use live Terra operations rather than simulating Terra events. Terra operations may be diminished in the areas of reprocessing or special OPS but nominal Terra (and Landsat 7) services may not be discontinued. It is envisioned that Aqua test data will be ingested and run through end-to-end processing in such a way that the general user community will not be aware of the test data's presence. User accounts for the test team will be established by ECS PM1/Aqua M&O personnel.

3.1.2.4.4 Test Databases

The EGS I&T Plan requires that selected simulated PM1/AQUA data be available for test operations. This data shall be versioned such that it is not made available to the general public.

Provision of test data is the responsibility of the EGS I&T Team.

3.1.2.4.5 Other Requirements

Badging and security registration is required to allow test team visitors campus, building, and restricted room access. Certain sites require substantial notification of visits and clearance for foreign nationals.

3.1.3 DAAC PM1/AQUA Preparation

3.1.3.1 Configuration Management

3.1.3.1.1 Purpose

The objective of PM1/Aqua ECS CM activities is to control the baseline configuration of ECS hardware, software, and firmware components deployed to the sites; control changes to these components and associated documentation; and record and report information concerning approved baseline resources changes. This configuration baseline and any associated liens are recorded in the Version Description Document (VDD).

There are multiple levels of configuration management within the ECS Project. DAAC-level CCBs interact with the Science Systems Program Configuration Management Board (PCMB). The PCMB and the ECS Development CCB interacts directly with the ESDIS CCB. The ECS PM1/Aqua CCB manages installation and changes at each location prior to turnover under the governance of the ECS Development CCB and, as necessary, the ESDIS and host center CCBs. The ECS M&O organization at each center supports the host organization CCB. In accordance with the ESDIS Configuration Management Plan, GSFC #423-10-21, and the ESDIS Distributed Active Archive Center (DAAC) Strategic/Management Plan, the ESDIS CCB provides configuration control over all ECS developed CIs.

3.1.3.1.2 Specification

ECS Configuration Management requirements are provided in the ESDIS CM Plan, Maintenance and Operations Configuration Management Plan for the ECS Project (102-CD-002-001), and the Section 9 CM Procedures of the M&O Operations Procedures (611-CD-001-001).

3.1.3.1.3 Schedule/Status at CST

Operations CM entails control of ESDIS approved products introduced to the operational environment at or after the PM1/Aqua Operations Readiness Review (ORR). Prior to ORR, CM of ECS products is administered by the ECS development organization.

3.1.3.1.4 ECS M&O Responsibilities

Each site maintains control over its site operational environment and products developed and/or delivered outside of the ECS project. Science software—which facilitates the ECS production of Standard Products—is developed by science investigators at the SCFs. Science software developers are responsible for CM of their science software and for transferring all components of the software delivery package to the DAAC. Once the science software is delivered to the DAAC, it and its supporting documentation and data are placed under the custody of the local DAAC CM organization supported as needed by ECS local personnel. The Integration and Testing (I&T) of the science software at the DAAC is conducted by the DAAC management in coordination with the local ECS Project Science Software I&T team. Changes to science software during I&T are coordinated with the science software developer and, if necessary, other DAACs by the I&T team. Changes approved by the science software developer are incorporated in a CM-controlled environment. After acceptance, the revised science software package and all test data are transferred to the control of the local DAAC Manager. The process ensures that each DAAC controls their science software and that science software developers have full visibility into the process and results. Changes to science software having inter-DAAC dependencies will require coordination with the affected DAACs. The local DAAC CM organizations will ensure that coordination and agreement is completed before changed science software is moved into production.

3.1.3.2 Computer Systems Preparation

A detailed listing of the installed hardware and software baseline is currently included in the management database, and the property management inventory report.

3.1.3.3 Database Preparation

Each DAAC will have in place a process which enables simulated Aqua data to be processed in an operational setting and yet remain hidden from view from the general public.

3.1.3.4 Operational Procedures Preparation

3.1.3.4.1 Purpose

ECS PM1/Aqua will be delivered with release specific procedures and instructions for effective operation of the system. Operations procedures are defined as the step-by-step commands or on-line procedures needed to perform a function. The Operations Instructions are the off-line procedures or directives for performing administrative, operations, management or operations support activities, e.g., Configuration Management, Problem Management, Performance Reporting, etc. Each DAAC may modify these procedures and instructions to accommodate site-specific M&O requirements.

3.1.3.4.2 Specification

ECS Operational Procedures are documented in DID 611 but may be superseded by DAAC generated procedures in local documentation.

3.1.3.4.3 Schedule/Status at CSR

The initial ECS PM1/Aqua procedures will be delivered prior to CSR. An update to the initial delivery must be completed by each site before PM1/Aqua EGS testing.

3.1.3.5 Maintenance & Operations Staffing

3.1.3.5.1 Purpose

ECS maintenance and operations organizations must recruit, hire, and schedule ECS M&O personnel to be ready to operate each site to the required level of performance commensurate with ECS operating plans and program milestones.

3.1.3.5.2 Specification/Schedule

ECS operations positions and general schedule are identified and described in DID 607.

Staffing levels for each position are as required by local site management plans in response to ESDIS direction.

3.1.3.5.3 Hours of Operation

Each DAAC will provide a schedule of hours of operation.

3.1.3.5.4 ECS M&O Responsibilities

Local site managers must provide staffing as required.

3.1.3.6 Maintenance & Operations Training

Readiness for PM1/Aqua requires that M&O personnel be given training in the operation of the ECS and the COTS products that are integrated with the ECS. ECS M&O will conduct classroom training in ECS operation. COTS training provisions have been made in M&O budgets for each operating location and must be applied as required by each site manager.

Training will be conducted at the DAAC facilities. It is the responsibility of the local manager to arrange training facilities, schedule work schedules for trainees to allow class attendance without disruption, and make the ECS system available as required to support hands-on training periods.

3.1.3.7 Logistics Systems Preparation

3.1.3.7.1 Purpose

Logistics support plans provide for ECS maintenance and sparing of ECS sites in coordination with local site M&O personnel.

3.1.3.7.2 Specification

ECS logistics requirements specifications are provided in DID 613 COTS Maintenance Plan.

The COTS Maintenance Plan addresses the PM1/Aqua maintenance concept and the responsibilities of the ECS Project for the commercial off-the-shelf hardware and software supplied by the ECS Contractor and government furnished equipment (GFE). The plan identifies the sources of maintenance support at ECS sites, periods of coverage, and responsibilities of the M&O staff and contracted maintenance providers.

An overview of planned logistics provisions is provided below to present a complete summary of operational readiness actions in the period just before, and during, early system operations. The actual, specific logistics provisions found in updated, approved plans and procedures will supersede this overview.

3.1.3.7.3 Schedule

ECS COTS hardware and software is under vendor maintenance when system operations commence.

Maintenance coverage during operations will sustain mission-critical operations. Generally, the principal period of maintenance (PPM) at the DAACs, EOC, SMC, and EDF will be 8AM to 5PM local, Monday through Friday, excluding local holidays.

Third-party maintenance providers and OEMs under maintenance subcontract have a 4 hour on-site response time after being notified of an equipment failure during the principal period of maintenance (PPM). Response for contracted maintenance support outside the PPM is provided on an as-required basis. If failures occur outside the PPM, the site should consider deferring OEM or maintenance subcontractor response until the next day if the malfunctioning system is not critical to ECS operations. This includes maintenance actions that would extend outside the PPM hours.

3.1.3.7.4 ECS M&O Responsibilities

Working under the general direction of the ECS M&O Manager, the ECS ILS Manager manages the ECS COTS maintenance program and other logistics operations. This includes the budget and expenditures associated with COTS Hardware and Software maintenance and the provisioning of spares in support of maintenance operations. The ILS Office (ILSO) assists ESDIS in the development of ECS COTS Hardware and Software maintenance policy; monitors and coordinates maintenance operations at the ECS sites; and manages maintenance support provided by vendors and OEMs.

Daily management and execution of DAAC, SMC, and EOC Hardware and Software maintenance is under the operational control of the DAAC, SMC, and EOC managers. Each site has a designated local maintenance coordinator (LMC) who executes maintenance support at the site, including problem diagnosis and isolation, maintenance support coordination, problem resolution, and recording COTS Hardware/Software maintenance actions performed at the site.

Problem Resolution.

The principal COTS Hardware and Software maintenance resource at the sites is the local maintenance coordinator (LMC), who also functions as the site's maintenance engineer. The LMC performs the initial fault diagnostics to isolate the cause of COTS Hardware and Software problems; determines the source of the maintenance support for the failed unit; and records the problem and its resolution into the management systems. The LMC may be the principal maintenance source for selected equipment having high A_0 and or low MDT requirements. As a principal maintenance source, the LMC is responsible for isolating failures to the LRU and replacing it with an on-site spare. This self-maintenance approach provides faster maintenance response than contracted maintenance support. The LMC is immediately available, understands the ECS architecture and operational requirements, and represents a lower cost maintenance approach for certain critical equipment.

The LMC is assisted by the site's system and network administrators to isolate and resolve problems. The DAAC's local help desk (for science user problems) and systems administrators (for operator problems) initiate the maintenance action by preparing a Trouble Ticket.

Trouble Tickets are monitored until problems are resolved and their resolution verified. Once verified, the LMC closes the Trouble Tickets and updates the Baseline Manager (if a change to the configuration baseline was required).

Changes to custom Software are accomplished by ECS sustaining engineers following current procedures established in the Terra timeframe.

SMC Support.

The SMC provides support for developed application Software, network, and design problems and monitors Trouble Tickets logged by the sites. Using the Trouble Ticketing system to recall similar problems, the SMC can assist the sites in problem diagnosis/resolution through reviewing previous configuration changes and problems reported against the equipment and subsystems. The SMC can also review similar problems experienced at other DAACs to identify possible causes and offer corrective actions.

Spares Provisioning.

Spare parts may be provisioned at the sites to ensure replacement COTS LRUs are available to effect the immediate repair of failed critical equipment. These sparing determinations are documented in the Replacement and Spare Parts List (DID 618). Spares provisioning levels may be adjusted after sufficient failure data is gathered during ECS operations to warrant adjusting site spares quantities and types. Spares used at the sites are reported to the ILS Maintenance Coordinator, who will replenish site stocks, as needed. The use and replenishment of site spares is monitored by the ILS Maintenance Coordinator.

3.2 Operational Readiness Exercises (ORE)

3.2.1 Introduction

This section describes DAAC participation in a hierarchy of system readiness verification at the following various:

- DAAC Functionality and Interfaces
- ECS System Functionality and Internal Interfaces
- ECS External Interfaces

The hierarchy begins with each DAAC verifying internal readiness, expands to inter-DAAC, and DAAC to EOS connectivity, and then to ECS system network readiness verification, and concludes with verification of operability of ECS system connectivity to external systems. The readiness verification activity culminates in an Operational Readiness Review which declares the ECS ready to support system operations.

3.2.2 DAAC Operational Readiness Exercises

This exercise is waived for each DAAC already certified under Terra because Aqua does not in itself add new DAAC operational requirements other than increased performance and capacity.

3.2.3 DAAC Participation in ECS Readiness Exercise

The Operational Readiness Exercises (ORE) will be conducted to determine the readiness of each DAAC to provide services. The DAAC will participate in system-level exercises to verify that communications and user data services operate across individual site boundaries. The system-level ORE will be conducted under the coordination of a test director, to verify that the functional capabilities of ECS are ready to support operations. The ORE will concentrate on operational procedures, human interfaces, operational databases, and Aqua time frame performance specifications. These exercises are documented in the System Confidence Test Series (SCT) test plan which is unique for each DAAC.

3.3 DAAC Participation in ORR

The ESDIS Operational Readiness Review (ORR) will be conducted to determine the readiness of each ESDIS element to provide operational services. The review will be conducted by ESDIS. The ORR will concentrate on confirming the operational readiness of hardware and software, operational procedures, human interfaces, and operational database readiness.

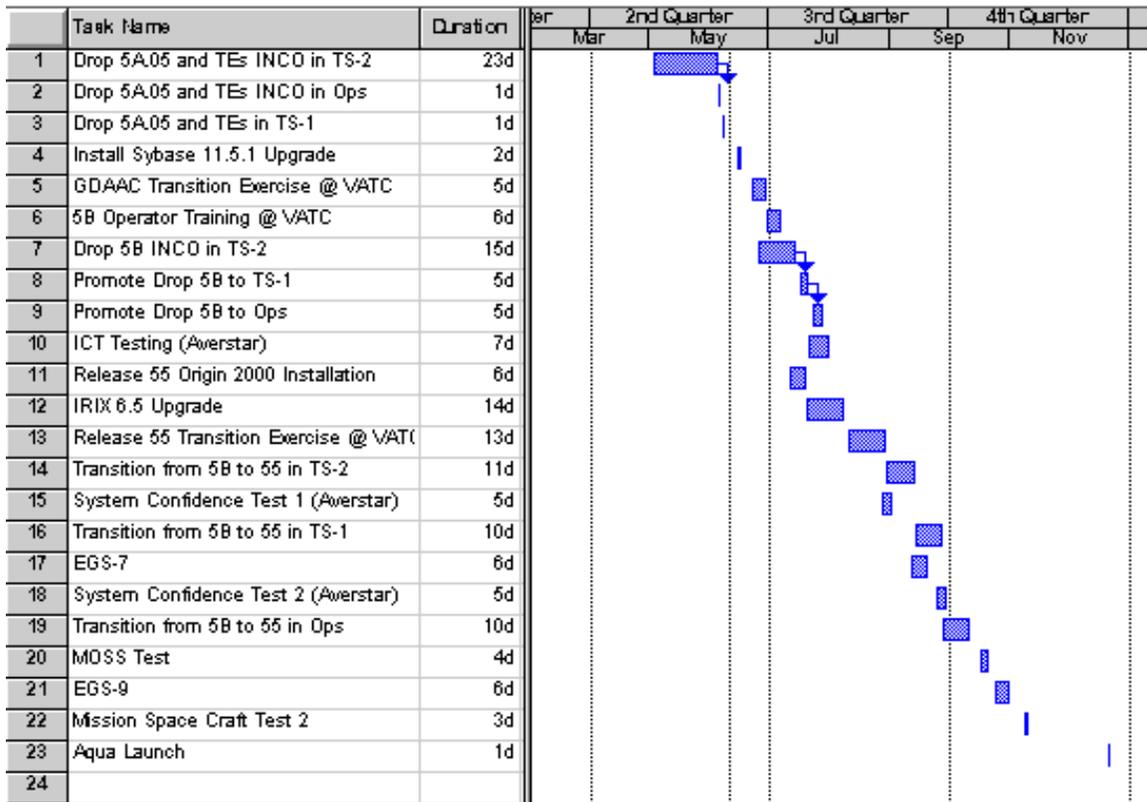
ECS M&O staff will support the ESDIS DAAC Manager in preparing monthly Terra and Aqua ORR status briefings to ESDIS and reporting the DAAC's readiness for combined Terra and Aqua operations at the ESDIS Science ORR.

4. GSFC ECS PM1/Aqua DAAC Operational Readiness Plan

This section identifies items which are specific to GSFC with respect to the overall plan presented in Section 3.0 above.

4.1 Prerequisites to DAAC ORE and ORR

The major GDAAC activities and events which must be successfully completed prior to ORR are found in the schedule below:



At the time ORR is scheduled, the GDAAC will be prepared to present its readiness to support the Aqua Mission Critical and Mission Essential Functions listed below.

NOTE: Support of standing Terra (AM-1) requirements remains the same and will be accomplished in concurrence with Aqua (PM-1) activities. The list below will only address increases that result from the additional work required to support Aqua (PM-1).

Mission Critical (Needed to Calibrate the Instrument)

NOTE: MODIS Cal/Val period is Launch plus 90 days. AIRS Cal/Val period is Launch plus up to nine months.

- MODIS Ingest and Archive (~77 GB/Day)
 - 12 MODIS L0 Production Data Sets (70 GB/Day)
 - Orbit and Attitude Files (<1 GB/Day)
 - NOTE: Sources for Input Data for DPREP is Still Being Finalized
 - 0-2 MODIS Expedited Data Set Files (<4 GB/Day)
- AIRS Ingest and Archive (~18 GB/Day)
 - 252 AIRS L0 Production Data Sets (13 GB/Day)
 - Orbit, Attitude, and Carryout Files (<1 GB/Day)
 - NOTE: Sources for Input Data for DPREP is Still Being Finalized
 - Other AIRS Ancillary Files (<2 GB/Day)
- MODIS Production (~332 GB/Day)
 - DPREP O/A Runs (<1 GB/Day)
 - 1728 MODIS Level 1 Output Products from PGEs 1 and 2
- AIRS Production (57 GB/Day)
 - 2160 Level 1A Output Products (19 GB/Day)
 - 1680 Level 1B Output Products (38 GB/Day)
- MODIS Distribution (~56 GB/Day)
 - L1B to MCST for Instrument Calibration
 - 0-2% MODIS EDS to MCST for Cal/Val
 - 10% of Data Volume for MODIS L1 Products to MODIS SCFs for QA
- AIRS Distribution (~8 GB/Day)
 - AIRS L0 Products to AIRS TLSCF
 - Level 1A and 1B AIRS Instrument Suite Products to AIRS TLSCF
- MODIS and AIRS Science Software Integration and Testing (SSI&T)
 - Ongoing for Newly Delivered PGEs

Mission Essential (Accomplished After Cal/Val Period is Expired)

- MODIS and AIRS Ingest and Archive (~31 up to ~60 GB/Day)
 - 29 GB/Day of MODIS L2-L4 Products (Ramping to 58 GB/Day)
 - NOAA Ancillary Data Sets for AIRS (<3 GB/Day)
- MODIS and AIRS Production (~136 GB/Day)
 - MODIS PGE 2A 286 Output (<30 GB/Day)

- When PGE03 is ready to engage processing of a specific time period a query is made to inquire about the availability of the associated NOAA Ancillary files (SEA_ICE, GDAS, Reynolds, OZ_Daily....). If these or any of the files are not available, PGE03 production continues. For the benefit of the downstream customers, the metadata reflects the fact that the ancillary data was not used in the production of the MOD07 (288), MOD35 (288), and MODVOLC (288) products (for a total of 864 Mission Essential products per day.
 - MODIS PGE 71 (17 GB/Day)
 - 1200 AIRS Level 2 Output Products (<88 GB/Day)
 - 8 AIRS Summary Output Products (<1 GB/Day)
- MODIS Distribution (~390 GB/Day)
- MCST for Improved Instrument Calibration
 - MODAPS: DPREP, L1B, CloudMask, Atmospheric Profile and Ancillary Data Files
 - MODIS L1B subsets and Geolocation to LaTIS
 - Distribution to End Users via FTP and via 8mm Tape
 - This includes Distribution of MODIS L2-L4 Products to General Users
 - L1A Subset to University of Miami
- AIRS Distribution (226 GB/Day)
- 10% of AIRS Ingest and Production (L1A, 1B, and 2) Volume to AIRS TLSCF
 - 100% of AIRS Production Output to External Users
- QA
- Update Science QA Flag on MODIS and AIRS Products as Needed
- Fault Recovery (Same requirement for Terra)
- From Extended EDOS, FDD, or “Larry” Server Outage
 - From Ingest and Distribution of Bad Data
 - From Data Corruption within the Archive

4.1.1 ECS System Turnover Activities for PM1/AQUA

GFSC will operate with Drop 5B after conversion to the Release 55 (Origin 2000 and IRIX 6.5 O/S upgrade) during the performance of the OREs.

4.1.2 EGS Integration and Test

During the Aqua launch time frame, Mission Critical Operational objectives will be the continued satisfaction of Terra (AM-1) MODIS data ingest, archive, processing, and distribution, ASTER expedited data transfer to ERSDAC, and Aqua calibration support for MCST, SDST, and other critical users.

A detailed EGS Science System and Operations Certification planning and preparation schedule was developed after review and revision of DAAC Launch Critical and Launch Essential functions. These milestones were identified in Section 3.1.2.2.

Other Requirements

Badging and security registration is required to allow test team visitors into the campus building and restricted room access.

4.1.3 DAAC PM1/AQUA Preparation

GDAAC will conduct and participate in ESDIS sponsored tests which will include ICTs, EGSs, Space Craft tests, Mission Confidence tests, and MOSS exercises, as well as DAAC specific OREs to ensure issues such as capacity, functionality, operator training, and Aqua mission support is fully exercised.

4.1.3.1 Configuration Management

GDAAC will utilize already established CM processes used to support current operations. Needs to modify CM processes to support Aqua are not anticipated.

4.1.3.2 Computer Systems Preparation

GDAAC will install, test, and utilize all ECS custom code software (Drop 5B), COTS products, and H/W (Origin 2000s) with IRIX 6.5 upgrades required to support Aqua data ingest, archive, processing and distribution.

4.1.3.3 Database Preparation

For the GDAAC, Aqua data is accommodated with ESDTs that are separate from Terra ESDTs. Therefore, techniques identical to those used to support Terra will be employed to hide all Aqua test data.

4.1.3.4 Operational Procedures Preparation

As specified in section 3.0 above. In addition, GDAAC will modify procedures delivered by ECS Landover, e.g., DID 611, to conform to local activities and any new functionality delivered with Drop 5B to support Aqua.

4.1.3.5 Maintenance & Operations Staffing

Hours of Operation

GDAAC hours of operation are as follows:

Shift Operations

Milestone	Hours	Shifts
Terra	24 X 7	2
Aqua	24 X 7	2

4.1.3.6 Maintenance & Operations Training

As specified in Section 3.0 above. GDAAC personnel will participate in transition training for Drop 5B, Release 55, ECS sponsored “delta” training to cover increased functionality with Drop 5B. In addition, OJT will continue to be a primary method for training and certifying operations personnel. Engineering personnel will continue to attend vendor sponsored training to ensure currency and proficiency with COTS hardware and software products utilized by the ECS system.

4.1.3.7 Logistics Systems Preparation

As specified in Section 3.0 above.

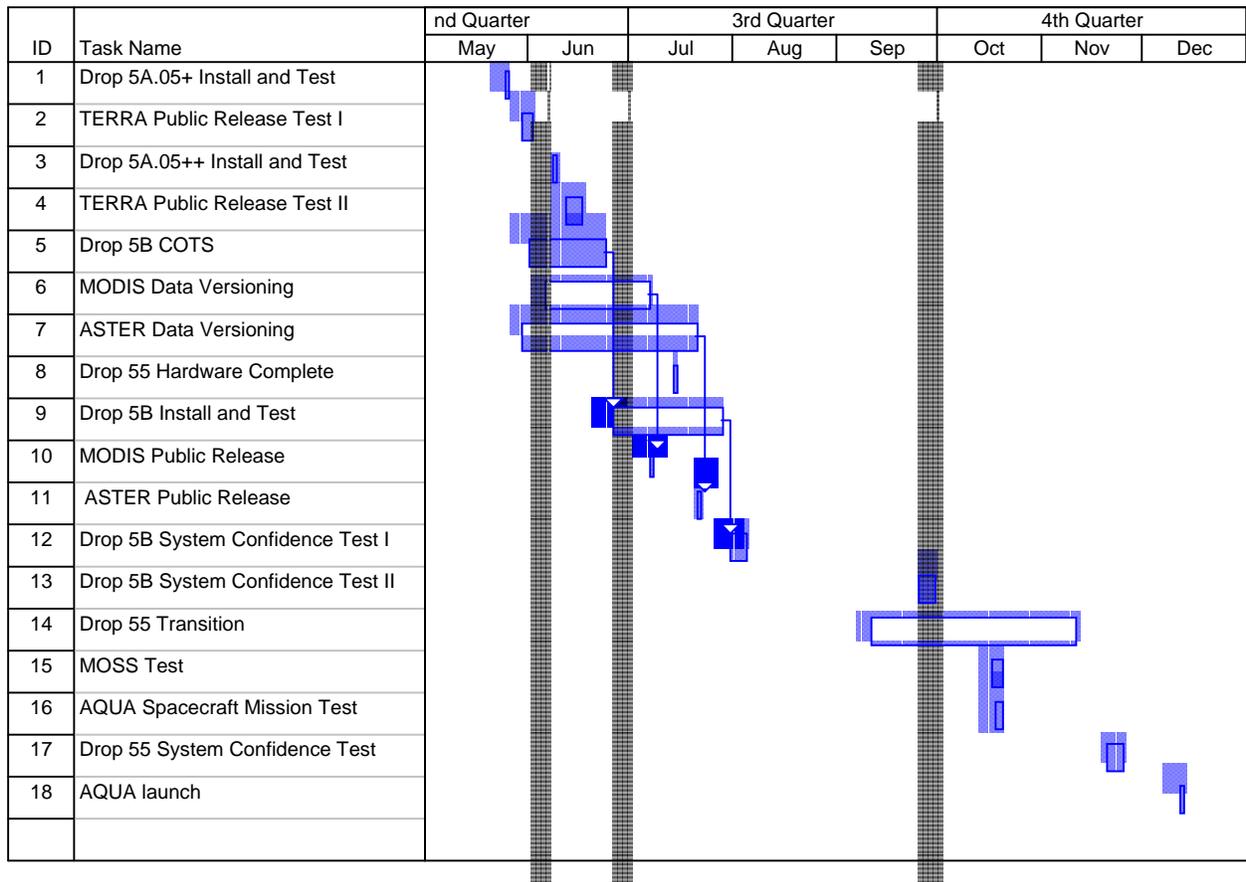
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5. EDC ECS PM1/Aqua DAAC Operational Readiness Plan

This section identifies items that are specific to EDC with respect to the overall plan presented in Section 3.0 above.

5.1 Prerequisites to DAAC ORE and ORR

The major DAAC activities and events that must be successfully completed prior to ORR are found in the schedule below.



5.1.1 ECS System Turnover Activities for PM1/AQUA

EDC will operate with Release 5B (55) during the performance of the OREs.

5.1.2 EGS Integration and Test

During the Aqua Launch timeframe, LANDSAT 7 and Terra Operations are Launch Critical and Aqua Operations are Launch Essential. This is because EDC Operations for Aqua are significantly downstream of the Aqua launch.

EDAAC Mission Critical Scenarios

OPS Ingest to Archive

Routine L7
ASTER Expedited Data
Full ASTER GDS D3 Tapes
Ancillary datasets
TERRA MODIS Data (78GB/day)

Science S/W Integration & Test

Plan and Run ASTER Routine Processing
Plan and Run ASTER On Demand Processing
ASTER DEM Production
Update QA Flag
Versioning Data
ASTER DAR

OPS Distribution

L7 Data
CCA metadata to L7 MOC/MMO
ASTER Data
TERRA MODIS Data (78GB/day)

System Support

Resource Management for 3 Modes

EDAAC Mission Essential Scenarios

User Services and User Access

Cancel Order
Track Order
Prioritize Order
Return Order
Promote VALIDs
Subscription Service Workaround
Access Directory, Inventory, Browse, Client

Data Management

Recover from Ingest of Bad Data
Prevent/Recover from Distribution of Bad Data
Replace Prior Data with Reprocessed Data
Segment Archive for Product Versioning
Segment Archive for Limited Access

OPS Distribution

AQUA MODIS Distribution

OPS Ingest to Archive

AQUA MODIS Data (78GB/day)

5.1.3 DAAC PM1/AQUA Preparation

EDAAC will participate in a number of exercises prior to Aqua launch including Interoperability Confidence Tests (ICT), System Confidence Tests(SCT), and MOSS exercises to ensure our readiness to support Aqua.

5.1.3.1 Configuration Management

EDC shall use the process in place for Terra without modification for Aqua.

5.1.3.2 Computer Systems Preparation

As shown on the schedule above, EDC will have in place Drop 5B(55) code, COTS products and appropriate hardware required to support Aqua. EDC shall provide a status of Computer Systems Preparation to ESDIS at Launch – 6 months, Launch – 1 month, and Launch + 4 months.

5.1.3.3 Database Preparation

For the EDC DAAC, Aqua data is accommodated with ESDTs that are separate from Terra. Therefore, techniques identical to those used for Terra will be employed to hide simulated ICO data.

5.1.3.4 Operational Procedures Preparation

EDC shall provide a status of Operational Procedures Preparation to ESDIS at Launch – 6 months, Launch – 1 months, and Launch + 4 months.

5.1.3.5 Maintenance & Operations Staffing

Hours of Operation

Shift Operations

Milestone	Hours	Shifts
Terra	24 x 7	3
Aqua	24 X 7	3

5.1.3.6 Maintenance & Operations Training

EDC shall provide a status of Maintenance & Operations Training to ESDIS at Launch – 6 months, Launch – 1 month, and Launch + 4 months.

5.1.3.7 Logistics Systems Preparation

EDC shall provide a status of Logistics Systems Preparation to ESDIS at Launch – 6 months, Launch – 1 months, and Launch + 4 months.

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6. LaRC ECS PM1/Aqua DAAC Operational Readiness Plan

This section identifies items which are specific to LaRC with respect to the overall plan presented in Section 3.0 above.

6.1 Prerequisites to DAAC ORE and ORR

The major DAAC activities and events, which must be successfully completed prior to ORR, are found in the schedule below.

Task Name	Duration	Start Date	Finish Date
LaRC 5A to 5B Transition	45d	7/10/00	9/11/00
LaRC 5B Training at GSFC	5d	7/10/00	7/14/00
LaRC 5B Install - TS2	10d	8/7/00	8/18/00
LaRC 5B Operator Training	5d	8/21/00	8/25/00
LaRC 5B Install - TS1	5d	8/21/00	8/25/00
LaRC 5B Regression Testing in TS1	5d	8/28/00	9/1/00
Final 5B SRA (LaRC)	0d	9/1/00	9/1/00
LaRC 5B Install - OPS	5d	9/5/00	9/11/00
LaRC 5B Configuration Registry	0d	9/11/00	9/11/00

6.1.1 ECS System Turnover Activities for PM1/AQUA

LaRC will operate with Release 5B during the performance of the OREs.

6.1.2 EGS Integration and Test

A detailed EGS Science System and Operations Certification planning and preparation schedule was developed after review and revision of DAAC Launch Critical and Launch Essential functions. These milestones are identified for in the following table.

No Launch Critical or Launch essential items at LaRC.

Other Requirements

Badging and security registration is required to allow test team visitors campus, building, and restricted room access.

6.1.3 DAAC PM1/AQUA Preparation

As specified in Section 3.0 above. Or include modification words here if there are DAAC specifics

6.1.3.1 Configuration Management

As specified in Section 3.0 above. Or include modification words here if there are DAAC specifics

6.1.3.2 Computer Systems Preparation

As specified in Section 3.0 above. Or include modification words here if there are DAAC specifics

6.1.3.3 Database Preparation

As specified in Section 3.0 above. Or include modification words here if there are DAAC specifics

6.1.3.4 Operational Procedures Preparation

As specified in Section 3.0 above. Or include modification words here if there are DAAC specifics

6.1.3.5 Maintenance & Operations Staffing

Hours of Operation

Each DAAC will provide a schedule of hours of operation.

Shift Operations

Milestone	Hours	Shifts
Terra	24X 7	3
Aqua	24 X 7	3

6.1.3.6 Maintenance & Operations Training

As specified in Section 3.0 above. Or include modification words here if there are DAAC specifics

6.1.3.7 Logistics Systems Preparation

As specified in Section 3.0 above. Or include modification words here if there are DAAC specifics

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7. NSIDC ECS PM1/Aqua DAAC Operational Readiness Plan

This section identifies items which are specific to NSIDC with respect to the overall plan presented in Section 3.0 above.

7.1 Prerequisites to DAAC ORE and ORR

The major DAAC activities and events which must be successfully completed prior to ORR are found in the schedule below.

Mission Critical	Mission Essential
<p>NISE</p> <p>Ingest, archival</p> <p style="padding-left: 40px;">2 MB / day ingest from NSIDC V0 Server via SIPS interface</p> <p>Distribution</p> <p style="padding-left: 40px;">Distribute to LaRC and GSFC via DAAC-to-DAAC subscription</p> <p style="padding-left: 40px;">4MB / day distribution</p>	<p>MODIS</p> <p>Ingest, archival</p> <p style="padding-left: 40px;">32 GB/D Terra, 8 GB/D Aqua ingest from PDR Server via SIPS interface</p> <p style="padding-left: 40px;">QA updates < 1 GB/D Terra, < 1GB/D Aqua</p> <p>Distribution</p> <p style="padding-left: 40px;">L2 & L3:16 GB/D Terra, 12 GB/D Aqua</p> <p style="padding-left: 40px;">QA updates possibly <1 GB/D each for Terra and Aqua</p> <p style="padding-left: 40px;">Track data subscriptions and user orders</p>
<p>AMSR</p> <p>Ingest, archival</p> <p style="padding-left: 40px;">AMSR-E L1a (5.1 GB/D), GBAD PDS (<1 GB/D), AMSR-E PDS (1.4 GB/D)</p> <p>Distribution</p> <p style="padding-left: 40px;">AMSR-E L0 (1.5 GB/D) for first 90 days NASDA, on demand thereafter</p>	<p>AMSER-E</p> <p>Ingest, archival</p> <p style="padding-left: 40px;">L2 + products from SIPS <1 GB/D</p> <p>Distribute</p> <p style="padding-left: 40px;">Data products 7 GB/D</p>

7.1.1 ECS System Turnover Activities for PM1/AQUA

NSIDC will operate with Release 5B during the performance of the OREs.

7.1.2 EGS Integration and Test

A detailed EGS Science System and Operations Certification planning and preparation schedule was developed after review and revision of DAAC Launch Critical and Launch Essential functions. These milestones are identified for in the following table.

Week Beginning	System	OPS	TS1
6/5	Upgrade Openview on 6.0 for HP PSR Sybase ASE 11.5.1for SGI and Sun Install Sybase ASE 11.5.1for SGI and Sun	Install and Test EDGRS	
6/12	Complete Sybase upgrade	Upgrade to Netscape Communicator V. 4.7	
6/19	Install Sybase Replication Server	HVAC Preventive Maintenance	Power upgrade for new equipment
6/26	Drop 5B PSR;	Participate in Install and Checkout at VATC	
7/3	Participate in EDC Drop 5B install into TS2		
7/10	IRIX 6.5 PSR; Drop 55 PSR	Install IDL 5.3	
7/17	Drop 55 Hardware set-up completed Switch IRIX 6.5 install and configuration on new equipment	Connect Servers to Gigabit Ethernet	
7/24	Participate in 55 Transition Integration/Exercise in VATC		Drop 5B install
7/31			Drop 5B Install
8/7		Drop 5B install	Begin ICT Testing
8/14			Regression Tests for Drop 5B Complete ICT Tests Operator Training?
8/21			
8/28	Begin 5B to 55 Transition	System Confidence Test (SCT1)	System Confidence Test (SCT1)
9/4	ssh transition complete at NSIDC		
9/11		EGS 7	
9/18		EGS 7	
9/25			
10/2			
10/9	Complete 5B to 55 Transition	System Confidence Test II (SCT 2) Performance Regression Test II for Drop 5B	System Confidence Test II (SCT 2) Performance Regression Test II for Drop 5B
10/16	MOSS Test (10/17 -10/19)	Spacecraft Mission Test (10/18 -10/19)	
10/23		EGS 9	
10/30		EGS 9	
11/6		Public Release of MODIS L2-L3 products	
11/13	Begin Additional Hardware Upgrades	Aqua ORR	
11/20			
11/27			
12/4			
12/11			
12/18	Aqua Launch (12/21)		
12/25			

7.1.3 DAAC PM1/AQUA Preparation

7.1.3.1 Configuration Management

NSIDC will continue to use the CM process in place Terra during the Aqua timeframe.

7.1.3.2 Computer Systems Preparation

NSIDC will install, test and utilize ECS custom code (5B), COTS, hardware (55) to support Aqua.

7.1.3.3 Database Preparation

For the NSIDC, Aqua data is accommodated with ESDTs that are separate from Terra ESDTs.

7.1.3.4 Operational Procedures Preparation

As specified in Section 3.0 above. In addition NSIDC will use internally documented procedures in conjunction with ECS documents to support 5B.

7.1.3.5 Maintenance & Operations Staffing

Hours of Operation

Shift Operations

Milestone	Hours	Shifts
Terra	8 X 5	1
Aqua	8 X 5	1

7.1.3.6 Maintenance & Operations Training

As specified in Section 3.0 above. Operations staff will attend ECS sponsored training, vendor training and will receive on-site training. Systems engineering will attend 55 ECS transition exercises and attend vendor training as needed.

7.1.3.7 Logistics Systems Preparation

As specified in Section 3.0 above.

8. SMC ECS PM1/Aqua DAAC Operational Readiness Plan

This section identifies items that are specific to SMC with respect to the overall plan presented in Section 3.0 above.

8.1 Prerequisites to DAAC ORE and ORR

The major DAAC activities and events that must be successfully completed prior to ORR are found in the schedule below.

5A to 5B Transition Schedule:

- SMC Install 5B in TS1
- SMC Install 5B in OPS

In preparation for Operational Readiness Plan, SMC will support the following Mission Critical and Mission Essential tasks.

ECS Software Distribution and Configuration:

SMC will provide the DAACs with software deliveries. Upon completion and validation at EDF, custom code drops and COTS will be distributed out to appropriate DAACs' sites based on based-line configuration.

Trouble Ticket Resolution:

The SMC will provide the DAACs with Trouble Ticket Resolution and analysis. Each DAAC is responsible for maintaining its own Trouble Ticket (Remedy) database. Upon review of a trouble ticket, the DAAC will be required to forward, to the SMC all trouble tickets that it deems to be system "ECS" level trouble tickets. The SMC will then review the trouble ticket and determine if a possible trend exists amongst the DAACs. If it appeared that a trend exists, the SMC will notify all DAACs

ASTER GDS:

In supporting ASTER, The SMC will provide a facility which trouble tickets will be exchanged between DAACs' sites.

Network Support:

SMC will serve as primary Domain Name Services (DNS) for DAAC sites. In addition, DNS will be transferred to secondary DNS servers which located at NSIDC and EDC.

User Profile Replication Server:

With the advent of database replication, SMC will be the focal point to support User Profile Replication Server. Once setup, database replication between the SMC and DAACs will be done automatically.

8.1.1 ECS System Turnover Activities for PM1/AQUA

SMC will operate with Release 5B (55) during the performance of the OREs.

8.1.2 EGS Integration and Test

During the Aqua launch timeframe, Mission Critical Operational objective will be the continued satisfaction of Terra (AM-1) MODIS data ingest, archive, processing, and distribution, ASTER expedited data transfer to ERSDAC, and Aqua calibration support for MCST, SDST, and other critical users.

A detailed EGS Science System and Operations, Certification planning and preparation schedule was developed after review and revision of DAAC Launch Critical and Launch Essential Functions.

8.1.3 DAAC PM1/AQUA Preparation

SMC will participate in test required by ESDIS.

8.1.3.1 Configuration Management (CM)

SMC will use the process in place for Terra without modification for Aqua. During this period, SMC will provide the DAACs with software deliveries. Custom code drops and custom COTS configuration files, upon completion of a successful pre-ship review meeting, are delivered from EDF CM to the SMC. The SMC is then responsible for distributing these files to the VATC and all sites as directed by the Configuration Control Board (CCB) by way of an approved configuration change request (CCR).

8.1.3.2 Computer Systems Preparation

SMC will ensure that all hardware are configured, maintained, and conformed with the EDF configuration management.

8.1.3.3 Database Preparation

SMC shall be the focal point for database preparation in two areas: (1) The SMC database is the primary database for all records in release 5B. The DAACs' databases are read-only copies. Having mentioned that, all account requests, user profile creation and profile modification activities will take place at the SMC and (2) With the use of database replication, database changes from SMC to other sites will be done automatically.

8.1.3.4 Operational Procedures Preparation

SMC will implement procedure delivered by EDF to conform to local activities and any new functionality delivered with release 5B to support PM1/Aqua.

8.1.3.5 Maintenance & Operations Staffing

Hours of Operation

Shift Operations

Milestone	Hours	Shifts
Terra	8x5	1
Aqua	8x5	1

8.1.3.6 Maintenance & Operations Training

SMC will participate in transition training for DROP 5B release. Also, SMC personnel will continue to attend vendor sponsored training to ensure proficiency with hardware and software products utilized by ECS systems.

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Abbreviations and Acronyms

A _o	Operational Availability defined mathematically as Mean Time Between Failure (MTBF) divided by MTBF plus Mean Down Time (MDT)
ADS	Archive Data Set
AT	Acceptance Test
ATO	Acceptance Test Organization
CCB	Change Control Board
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CI	Configuration Item
CM	configuration management
CMO	Configuration Management Office
COTR	Contracting Officer's Technical Representative
COTS	Commercial off the shelf
CSR	Consent to Ship Review
CSU	Computer Software Unit
DAAC	Distributed Active Archive Center
DID	Data Item Description
DMO	Data Management Office
DMP	DAAC Data Migration Plans
DSS	Data Server Subsystem
EBnet	EOSDIS Backbone Network
ECS	EOSDIS Core System
EDF	ECS Development Facility
EDOS	EOS Data and Operations System
EOC	EOS Operations Center
EOSDIS	Earth Observing System Data and Information System
EP	Evaluation Package

ESDIS	Earth Science Data and Information System (GSFC Code 505)
ETR	Element Test Review
F&PRS	Functional and Performance Requirement and Specification
FCA	Functional Configuration Audit
FOS	Flight Operations Segment
GFE	Government Furnished Equipment
GN	Ground Network
GSFC	Goddard Space Flight Center
I&C	Installation and Checkout
I&T	Integration and Test
ICD	Interface Control Document
ICT	Interface Confidence Test
ILS	Integrated Logistics Support
ILSO	Integrated Logistics Support Office
IPT	Integrated Product Teams
IST	Instrument Support Toolkit
IV&V	Independent Verification and Validation
LMC	Local Maintenance Coordinator
LPS	Landsat Processing System
LRU	Line Replacement Unit
LSM	Local System Management
M&O	Maintenance and Operations
MDT	Mean Downtime takes into account repair time plus logistics support
MODIS	Moderate-Resolution Imaging Spectroradiometer
Nascom	NASA Communications
NCR	Non-conformance Report
OEM	Original Equipmaent Manufacturers
OPSTEL	Operations Teleconference
OR	Operational Readiness
ORE	Operational Readiness Exercise

ORR	Operational Readiness Review
PCA	Physical Configuration Audit
PDS	Planetary Data System
PPM	Principal period of maintenance
QA	Quality Office
RRR	Release Readiness Review
SCT	System Confidence Test
SMC	System Monitoring And Coordination Center
TRMM	Tropical Rainfall Measuring Mission (joint US-Japan)
TRR	Test Readiness Review
VDD	Version Description Document

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