

212-WP-002-001

# Game Plan for the ECS Project

White Paper

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# Abstract

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This white paper explains the ECS project activities that will be performed in order to deliver Version 2 to the DAACs and enable them to become operational. It concentrates on Release 2.0, but will be updated as needed to reflect changes in the planning of these activities and to address the specifics of future Version 2 releases (i.e., 2.1, 2.2, 2.3, 2.4). These activities are identified along with the responsible organizations among Program Management, Program Controls, System Engineering, Development, Test, SSI&T, Deployment, and Operations and Maintenance. The Delivery Manager's authority and responsibilities for implementing this plan are also defined.

**Keywords:** Acceptance Test, Baseline Management, Capabilities, CCB, CM, Delivery Manager, Development, Documentation, Drop, Engineering Review Board, Features, Master Schedule, Metrics, MRB, Mode Management, Operational Readiness, Red Book, Release, SSI&T, System Verification, Test, Training, War Room

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# Change Information Page

<b>List of Effective Pages</b>			
<b>Page Number</b>		<b>Issue</b>	
Title iii through viii 1-1 and 1-2 2-1 through 2-30 3-1 and 3-2 A-1 through A-20 B-1 through B-10 C-1 through C-6 AB-1 and AB-2		Original Original Original Original Original Original Original Original	
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# Contents

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## Abstract

### 1. Introduction

1.1	Purpose .....	1-1
1.2	Organization .....	1-1
1.3	Review and Approval.....	1-1

### 2. Project Game Plan

2.1	Overview .....	2-1
2.2	Schedule .....	2-2
2.2.1	ECS Master Schedule.....	2-2
2.2.2	Metrics.....	2-7
2.3	Documentation .....	2-7
2.3.1	Release Documentation Management .....	2-7
2.3.2	DAAC Tailoring of ECS Documents.....	2-9
2.3.3	Release 2.0 Document Plan.....	2-9
2.4	Baseline Management .....	2-11
2.4.1	Overview of Baseline Management Process .....	2-11
2.4.2	Baseline Identification and Verification.....	2-12
2.4.3	Baseline Control.....	2-13
2.4.4	Mode Installation and Management.....	2-17
2.4.5	Non-Compliance Reports.....	2-19
2.4.6	Status Accounting.....	2-19
2.4.7	Configuration Audits.....	2-19
2.4.8	CM Baseline Repository .....	2-20
2.5	Development .....	2-20
2.6	Test.....	2-21
2.7	Science Software Integration & Test (SSI&T).....	2-22
2.8	Training and Certification .....	2-26

2.9	Operational Launch Readiness.....	2-27
2.10	Risk Management.....	2-30

### **3. Game Plan Implementation**

3.1	Delivery Manager.....	3-1
3.2	Daily Delivery Status Review .....	3-1
3.3	War Room .....	3-2

### **Appendix A. At Launch System Capabilities**

### **Appendix B. Features Mapped to Capabilities**

### **Appendix C. Documentation List**

#### **Figures**

2.2-1	ECS Master Schedule by Drop.....	2-4
2.4-1	Baseline Management Process .....	2-12
2.4-2	Developmental Baseline Management.....	2-17
2.9-1	Notional Transition from VATC to the DAACs.....	2-28

#### **Tables**

2.3-1	Minimum Required Documentation At Launch.....	2-10
2.4-1a	ECS Control Board Structure.....	2-14
2.4-1b	ECS Review Board Structure.....	2-15
2.4-2	Version 2 Configuration Management Roles and Responsibilities for ECS Organizations.....	2-16
2.7-1	SSI&T Checkout PGEs .....	2-23
2.7-2	Formal SSI&T PGEs .....	2-25

### **Abbreviations and Acronyms**

# 1. Introduction

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## 1.1 Purpose

The ECS Project Game Plan describes the approach to provide NASA an ECS with the necessary capability to satisfy the NASA mission. For each release, this plan identifies the development and deployment strategy, all items to be delivered, the responsible organizations, and key milestones. It also discusses mechanisms to be used to monitor progress. This document is applicable to contractor and government personnel working on and supporting the ECS program as it provides a single source of information concerning the key release activities. This document is expected to be evolutionary in nature and, therefore, will be refined and extended as events dictate.

## 1.2 Organization

This document is organized in three sections. Section 1 provides a general introduction to the purpose and intent of this document. Section 2 describes the plan. Section 3 defines roles and responsibilities of individuals and organizations for implementing this plan and explains the mechanisms that will be used.

## 1.3 Review and Approval

This White Paper is an informal document approved through the ECS CCB. The Delivery Manager is responsible for submission of this document and any subsequent changes to it. It does not require formal Government review or approval; however, it is submitted with the intent that review and comments will be forthcoming.

Hard copy of this document will be distributed to selected individuals. It will also be posted on the EDHS home page. Whenever revisions to this document are made, Program Controls will redistribute it to the distribution list or notify them that an update is available.

Questions regarding technical information contained within this Paper should be addressed to the following ECS contacts:

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## 2. Project Game Plan

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### 2.1 Overview

The general philosophy behind this Game Plan assumes that success can be achieved by teaming with operational DAACs to deploy a usable ECS. This will allow the Hughes ECS team to combine ECS expertise with proven DAAC operational experience. This powerful combination will drive an emerging national asset to a position of operational readiness to support the EOS AM-1 and Landsat 7 launches.

The specific operating principles to which ECS will adhere are:

1. ECS will be fielded to four sites (GSFC, EDC, LaRC, and NSIDC) although only three, excluding NSIDC, will be operational at launch. The SMC will be established to monitor and report on system activities and facilitate inter-organization coordination.
2. ECS will perform system verification in the VATC (see section 2.2.1) to ensure a quality product prior to acceptance test at the DAACs. ECS development and test will then fully support DAAC-run interface and end-to-end testing and work with EGS through launch to ensure success of testing and certification.
3. SSI&T for all PGEs will be conducted in Landover (locally or by remote access) and/or at the GSFC until completion of regression testing of each site's initial installation.
4. Each hardware suite (test environment or DAAC) will utilize mode management to support the parallel execution of multiple instances of the ECS system (Ops, SSI&T, and Test) rather than requiring independent hardware suites for these multiple instances.
5. Change control from the established project delivery plan will only be made through a combined ECS and ESDIS coordinated decision resulting in a Delivery Manager submitted CCR to the ECS CCB until the completion of acceptance test, and by ESDIS thereafter.

The schedule, which is essentially resource loaded (with emphasis on development and test) and includes dependency logic, provides for early availability of capabilities through incremental deployment culminating in at launch capabilities that will meet or exceed those originally identified for B.0'. Documentation preparation is included in this schedule with priority given to documentation required to support M&O activities at launch. The schedule for software development and integration is based on estimates that reflect recent (Jan. 97 - Aug. 97) ECS past development experience and accounts for anticipated NCR workoff. A revised change management process that accurately tracks the baseline changes resulting from frequent incremental deliveries will focus on reliably tracking and reporting all NCRs and expediting high priority NCRs.

Acceptance testing will focus on DAAC identified launch critical and launch essential operational scenarios. This focus will surface NCRs affecting these scenarios as early as possible and minimize the likelihood of serious problems being discovered late in the test cycle. This will also make software available for Operations rehearsals, EGS testing, and SSI&T activities as early as possible following installation and checkout. Automation of the installation and checkout process is being developed to further reduce the time before an incremental delivery is available.

Training is provided in time for initial site deployments with training updates provided, as needed, in conjunction with subsequent incremental deliveries. Planned site participation in all deployment activities is expected to enhance formal training activities. DAAC-centric launch activities will be coordinated with ECS incremental deliveries, testing, and training through and after launch.

This approach will provide a focus to the ECS team that will allow them to concentrate on operations scenarios that will ensure useful capabilities will be provided at launch.

## **2.2 Schedule**

ECS Program Controls maintains multi-level schedules for the project. Input for these schedules is provided by the Cost Account Managers (CAM) who have responsibility for tasks and the resources to accomplish these tasks. In addition to making these schedules available to project personnel, Program Controls will provide the Delivery Manager with selected cross sections of the schedule at his discretion. Examples of these cross sections are tasks due on a particular day(s), tasks not completed on schedule, and tasks dependent on any given task.

### **2.2.1 ECS Master Schedule**

The Master Schedule, shown in Figure 2.2-1, is primarily a rollup of significant tasks from various lower level schedules maintained by other organizations. This schedule provides information that will make inter-organizational dependencies visible. It is presented sorted by drop (see definitions below), with tasks not associated with a particular drop (i.e., launches, on going SSI&T activities across drops) appearing at the end.

The following definitions explain the terms used in or relevant to the schedule.

Version 2:

As stated in the ECS Statement of Work, EOSDIS Version 2 encompasses the previously defined ECS Releases B and C, which have been replaced with Releases 2.x. EOSDIS Version 2 begins with support of AM-1, while EOSDIS Version 1 was intended to support TRMM and EOSDIS Version 0, which preceded ECS, provided integrated access to the existing DAACs.

Release:

A significant system delivery that will be deployed to the DAACs for operational use. Currently planned Version 2 Releases are 2.0, 2.1, 2.2, 2.3, and 2.4.

#### Drop:

An incremental package of ECS custom software satisfying the capabilities allocated to that drop and all previous drops. There are six drops (1, 2, 3, 3.5, 4, and 5) identified that will cumulate to form Release 2.0. The capabilities that will be provided in each of these drops are listed in Appendix A.

#### Turned Over:

The configuration contains the agreed upon functionality and is ready for turnover to a controlled environment (Mini-DAAC, VATC, or DAAC mode). A clear set of exit criteria has been established for the install that is based on the purpose of the configuration. The configuration has been successfully built and all files in the configuration are under ClearCase control by software CM. A successful turnover meeting has been held IAW PI Number CM-1-018.

#### Installed:

The configuration has been successfully turned over. All necessary files to run the configuration have been installed from their controlled ClearCase locations. All servers have been booted and the system is operating normally in a "clean" (without data) state. All COTS products have been installed, configured, customized, and ready for use within the context of the turned-over drop.

#### Checked Out:

The configuration has been successfully installed. Install checkout tests that were agreed upon in the turnover meeting for a given drop have been successfully accomplished.

#### Available for Test:

The configuration has been successfully installed and checked out.

#### Mini-DAAC:

The Mini-DAAC is used as a controlled integration environment and is on the Landover, Maryland EDF network. It can be made available for selective remote SSI&T activities.

#### VATC:

The Verification and Acceptance Test Center (VATC) is used as a controlled test environment. It is on the EBnet and, therefore, available remotely through this network.

#### EDF:

The ECS Development Facility (EDF) is the Landover, Maryland development facility that is used to develop ECS. It is distinguished from the Mini-DAAC and VATC environments by the fact that the latter two environments are controlled and must take all software deliveries from CM prior to installation. The EDF uses developer executables in addition to nightly builds. The development staff uses the EDF to prototype, develop, unit test, and integrate parts or all of ECS.

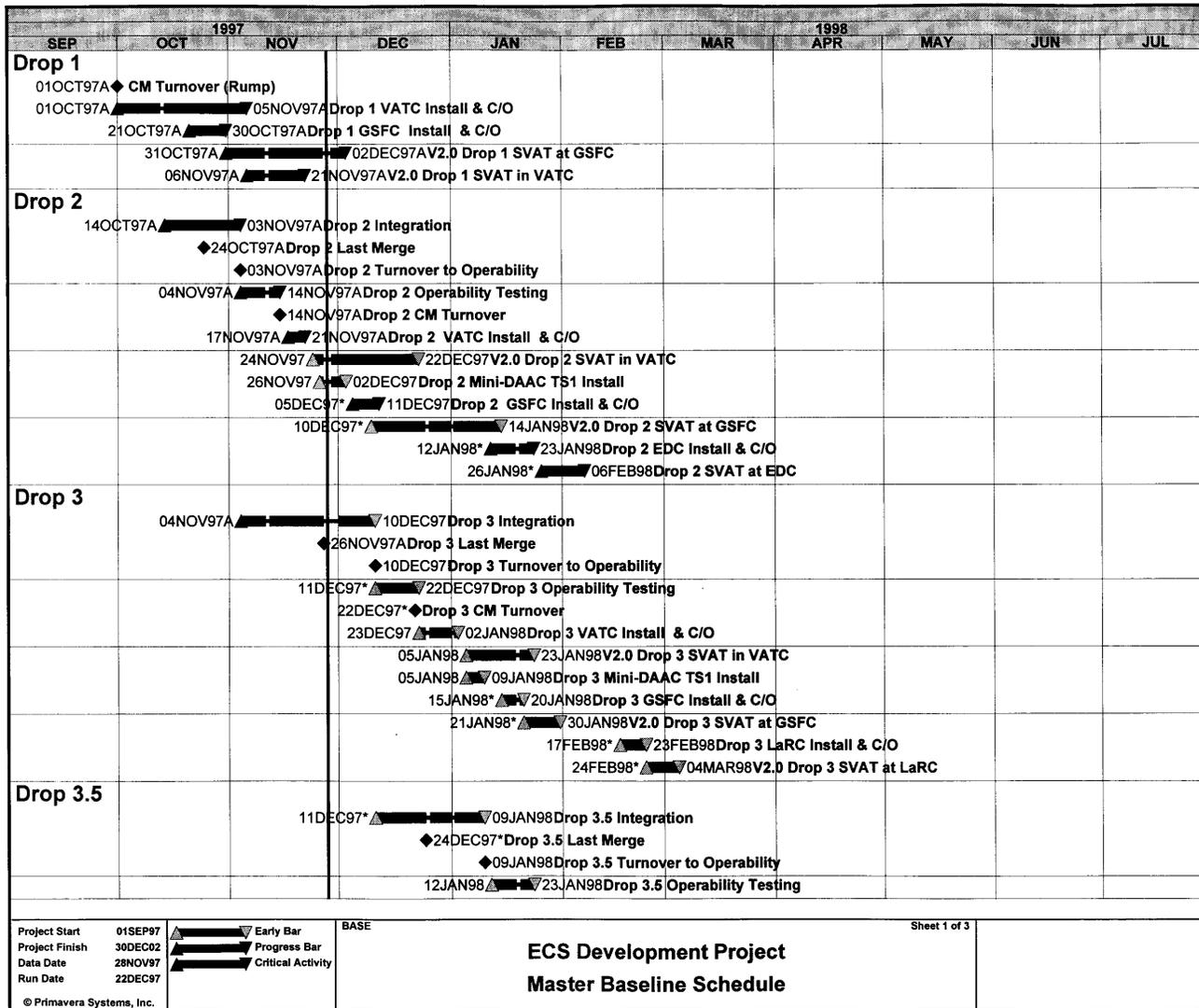


Figure 2.2-1. ECS Master Schedule by Drop (1 of 3)

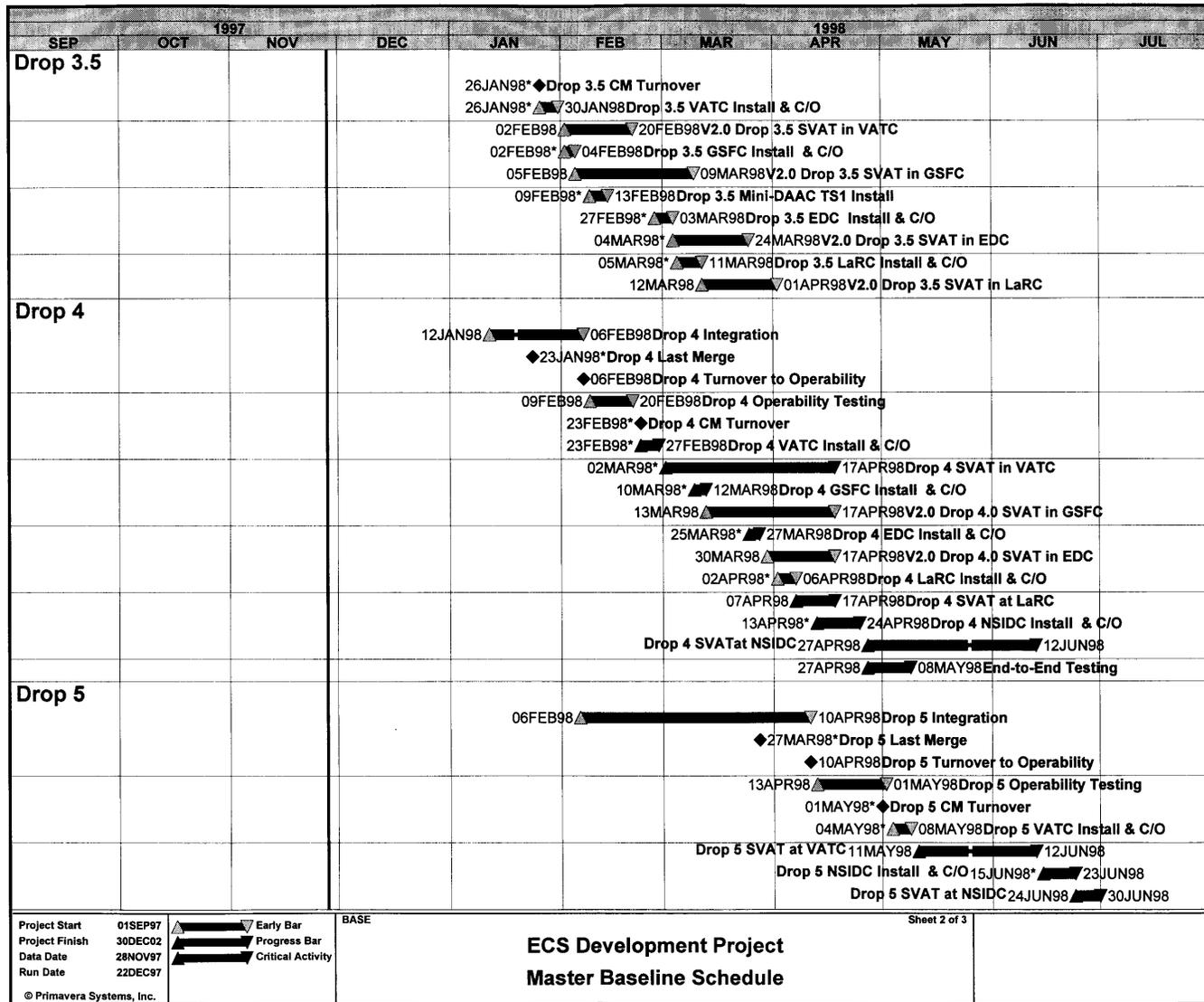


Figure 2.2-1. ECS Master Schedule by Drop (2 of 3)

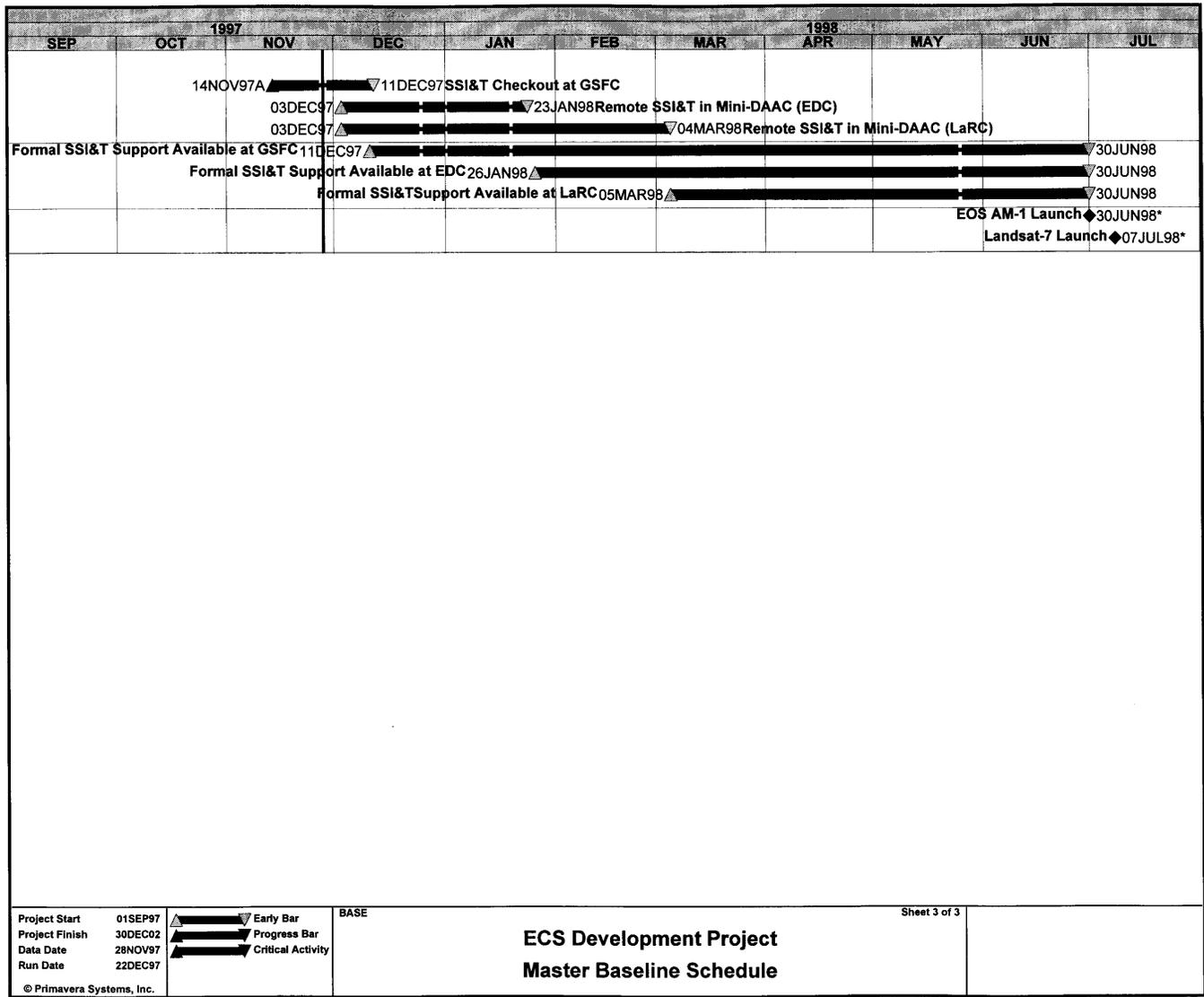


Figure 2.2-1. ECS Master Schedule by Drop (3 of 3)

## **2.2.2 Metrics**

Metrics are used as a management tool to assess progress, adjust resources, and aid in the delivery of ECS. Planned versus actual metrics aid in determining progress towards the planned goals. This type of metric is used by all subsystems and disciplines. Other types of metrics include: the rate of discovery of problems or issues, the rate of changes in code, and the rate of new code being developed. These rate metrics provide trends that predict system stability and help identify additional potential resource needs.

The following list of metrics will be tracked:

1. Planned vs. actual classes developed by drop and CI
2. All activities (in Primavera) planned vs. actual
3. Test cases planned vs. actually completed
4. SSI&T PGEs planned vs. actually delivered, pre-tested, and integrated
5. Planned hardware, software and COTS deployed vs. actual
6. Planned hardware, software and COTS PCAs vs. actual
7. NCRs discovered, assigned, fixed, tested and closed by CI
8. Rate of discovery of NCRs by CI
9. Rate of discovery of problems entered in the Redbook
10. Rate of changes in code
11. Rate of new code developed

The metrics above represent the current list and may change to reflect needs at a future time. Data will be collected by the ECS Quality Assurance organization on a regular basis (daily, weekly or monthly) as needed to aid in the management of Version 2 resources and deliveries. Tools used to develop metrics may change over time; the initial set includes Primavera and Excel. Metric charts and their updates will be posted in the War Room for use by interested individuals.

## **2.3 Documentation**

### **2.3.1 Release Documentation Management**

#### **2.3.1.1 Overview**

A documentation plan will be prepared for each ECS system release identifying the specific documents, their contents, assigned document development responsibilities and document delivery dates required to support the associated release's activities. The purpose of each documentation plan is to:

- Capture the government-coordinated, release-specific plan for implementing (or recording exceptions to) the documentation requirements specified in the ECS contract Statement of Work (SOW) and Contract Data Requirements Document (CDRD)
- Provide a clear basis for measuring and reporting release documentation preparation and delivery progress
- Describe and capture inter-organizational documentation agreements

### **2.3.1.2 Roles and Responsibilities**

The Delivery Manager, whose role is more fully described in section 3.1.1, has documentation plan approval authority. The Delivery Manager also negotiates documentation plan approval with the customer and provides progress reports to ECS senior management and the customer.

A Documentation Lead (Lead hereafter), appointed by the Delivery Manager, is responsible for overall documentation plan development, implementation, and progress reporting to the Delivery Manager.

Each organization will provide single-point of contact for organizational support to the Lead for release documentation plan development, planning and progress reporting for assigned documents, problem identification, and problem resolution support. The person responsible for each document to be delivered is identified in Appendix C.

### **2.3.1.3 Documentation Plan Development**

The Lead will initiate the documentation plan development process by providing a proposed documentation plan development schedule including a strawman set of documentation planning data including:

- Names of candidate documents required to support Release activities. Initial candidates will be selected from the current Contract Data Requirements Document (CDRD). Exceptions will be noted and justified.
- Name of organization and individual responsible for the document's planning, development, and delivery.
- Proposed release-specific delivery schedule defined in time relative to a release activity/event which the document is required to support (e.g., 2 weeks prior to classroom training, 1 month prior to Operational Readiness review (ORR)). Exceptions to the Contract Data Requirements List (CDRL) must be noted and justified.
- Proposed delivery date which would be determined by relating proposed release-specific delivery schedules above to the current release activity schedule.
- Proposed exceptions to any Data Item Descriptions (DIDs) to include a brief description of any/all document contents proposed to be different than the document's DID and the justification.

Team members, with the support of their organizations, review the draft documentation plan material to ensure SOW and CDRD compliance. They provide to the Lead comments, missing data, and draft schedules for development of assigned documents. The Lead incorporates the member's responses and presents the updated release documentation plan to the Delivery Manager for approval.

#### **2.3.1.4 Documentation Plan Implementation and Reporting**

The ECS organizations develop and deliver their assigned documents consistent with the approved release documentation plan and their document development schedules. They monitor their organization's documentation development, identify and report problems, and report document schedule progress periodically to the Lead. The Lead summarizes the members' progress reports and provides status to the Delivery Manager.

When problems are reported the Lead initiates a response process to define the problem, identify release-level impacts and risks, formulate a response action plan, and provide status reports to the Delivery Manager.

The Lead will also provide Release planning documentation and status to the ECS Data Management Office to ensure alignment of publication resources and to the ECS Contracts Office to ensure contract compliance.

### **2.3.2 DAAC Tailoring of ECS Documents**

After delivery to the DAACs, the documents and/or documentation described in Table 2.3-1 and expanded upon in Appendix C are tailored by the DAACs to their operational environments. For example, Mission Operations Procedures in DID 611 describe a generic set of operational procedures that are the starting point for tailoring by the DAACs to account for DAAC-unique missions and DAAC-unique hardware configurations. Changes or updates to documents and/or documentation associated with incremental deliveries are provided by ECS. DAAC-tailored documents and/or documentation are managed and controlled by the DAACs in accordance with the "Policies of the Distributed Active Archive Centers, October 1997" which is maintained by ESDIS.

### **2.3.3 Release 2.0 Document Plan**

The Release 2.0 documents to be developed are identified in Appendix C. The organization and/or individual responsible for each document is presented along with when it is to be delivered.

#### **2.3.3.1 Minimum At Launch Documentation**

In conjunction with the recent Release B to Release 2.x replanning activities, the schedule for documentation preparation and delivery has been adjusted. The following table presents those documents considered to be absolutely necessary to support maintenance and operations at launch of AM-1. These are the documents that ECS will initially concentrate its resources on

producing to ensure their timely availability. These documents are also identified in Appendix C unless their final version has already been delivered.

**Table 2.3-1. Minimum Required Documentation At Launch**

Document Titles	Relevant CDRs
M&O Position Description	607
Science User's Guide & Ops Procedures Handbook	205, Vol. 1-3 205, Vol. 4
Operations Tools Manual	609
Mission Operations Procedures	611
As Built Design (Programmer's Guide)	305
ICDs and IRDs	209/219
Security Risk Management Plan	627
COTS Maintenance Plan	613
Developed Software Maintenance Plan	614
Special Maintenance & Test Equipment	615
Integrated Logistics Support Plan	616
Test & Support Equipment Requirements List	619
VDD	VDD
As Built DAAC Facility Plan	302
Replacement Parts List & Spare Parts List	618
Database Design and Database Schema Specifications	311
ECS System Acceptance Test Procedures	411
ECS System Acceptance Test Report	412
ECS System Integration & Test Procedures	322, 414
ECS System Integration & Test Report	324, 405

### 2.3.3.2 Design Documentation

Recognizing the need for more complete and current documentation, Systems Engineering and Development have teamed to develop critical information required for Release 2.0 prior to launch. Systems Engineering and a lead from Development will capture relevant information via videotaped interviews with key software developers. Interviews will run from two to four hours and concentrate on key design and functional aspects of each subsystem. Prior to the interviews all available informal documentation will be gathered together and made available. Informal documentation may consist of redlined object models, internal presentations, design notes, or any existing aids deemed useful by the developer.

Working from informal materials, notes, videotapes, and additional analysis, Systems Engineering staff will develop initial draft descriptions for the Operations Tools Manual (DID 609) and Configuration Item (CI) descriptions which can be incorporated in the appropriate Segment/Design Specifications (see Appendix C). Software developers will review and annotate draft material once, and perhaps twice, after which it will be incorporated in the appropriate document and placed under configuration control.

Recognizing there are areas which require specific knowledge (such as Rogue Wave), Systems Engineering is investigating contracting with a local firm. However, the effort described above is proceeding irregardless.

This planned approach provides multiple benefits: essential documentation will be developed; impact to Development staff will be minimized; and Systems Engineering staff will gain additional knowledge of the software design and functionality.

## **2.4 Baseline Management**

The success of Version 2 is dependent upon a proactive and disciplined baseline management process. The process requires that any change to a baselined item, no matter how small, is recorded, dispositioned, and traceable back to the configuration item. This plan clearly defines the CCB structure, change control authority, and the associated review boards.

The baseline management process has at its central core the configuration management process. Configuration management is a discipline applying technical and administrative direction and surveillance to:

- Identify and document the functional and physical characteristics of a configuration item
- Control changes to those characteristics
- Record and report change processing and implementation status

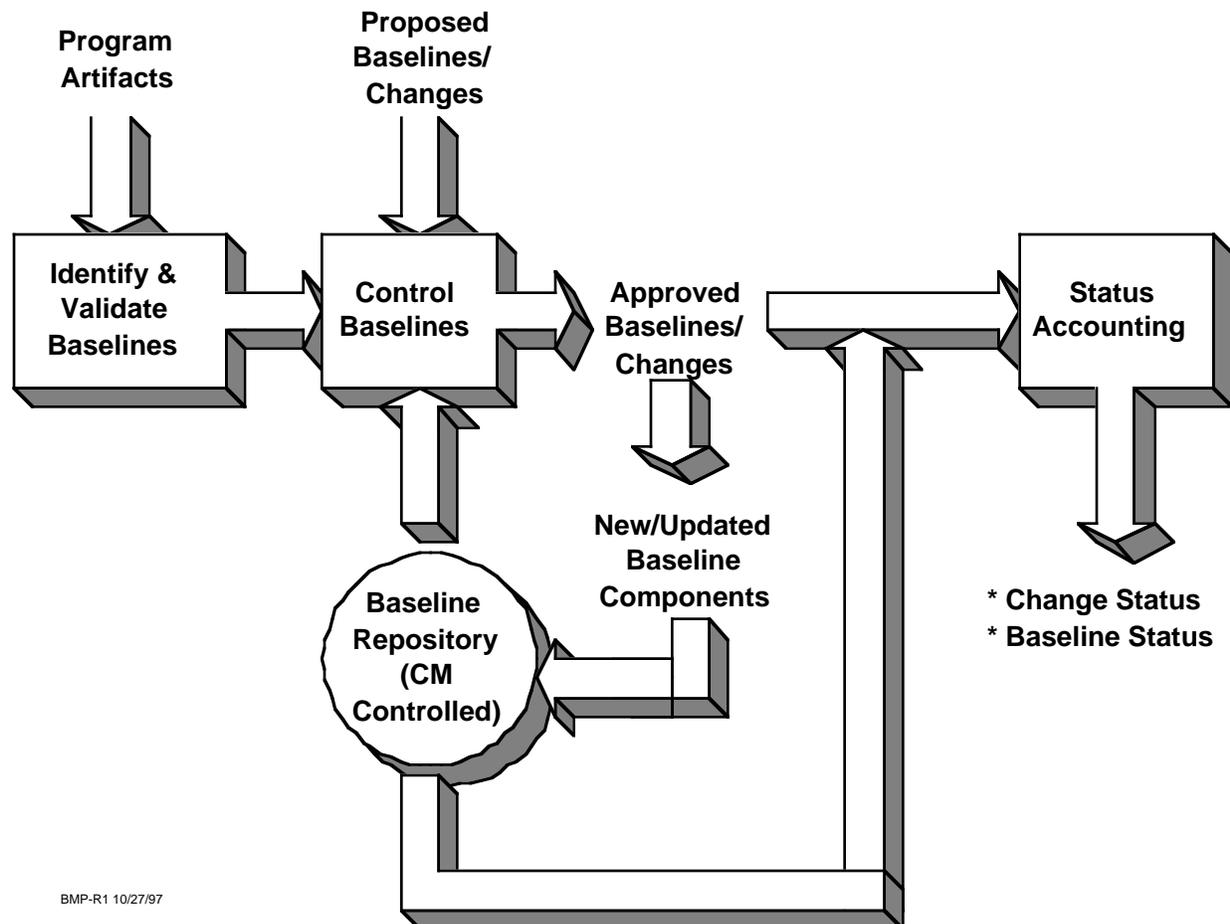
Configuration management is thus the means through which the integrity and continuity of the design, engineering and cost trade-off decisions made between technical performance, producibility, operability, and supportability of the Release are recorded, communicated, and controlled by the program. The baseline management process as defined in this document will be the approach used until such time as the current Development Configuration Management Plan for the ECS Project (doc # 102-CD-001-004) is revised.

The following paragraphs provide an overview of the baseline management process as well as describe each of the key elements which form the baseline management foundation.

### **2.4.1 Overview of Baseline Management Process**

Figure 2.4-1 is an overview of the Version 2 baseline management process. The process is composed of three major sub-processes; 1) Baseline Identification and Verification, 2) Baseline Control and, 3) Status Accounting. Items which have been baselined and are contained in the baseline repository are under the control of CM and can only be modified by going through the baseline control process and by receiving authorization from the appropriate CCB. Changes

which require the update of baselined items require those items to be updated and entered back into the baseline repository before the change is statused as closed. Changes may also request new items to be added to the baseline. These also require the authorization of the cognizant CCB in order to be placed in the baseline repository. At any point in time, the current baseline status and change status is visible and is reported through the status accounting sub-process.



**Figure 2.4-1. Baseline Management Process**

## 2.4.2 Baseline Identification and Verification

In order to ensure that the baseline management process will be effective, it is necessary to validate the baselines and their components. This process is on-going and involves identifying items which had previously been developed (documentation, drawings, configuration parameters, etc.) and were not under formal CM control. These items, after review by the cognizant organization, are now being entered into the baseline through the baseline control process. Since the revised baseline management process is being implemented in an already on-going program, the baseline identification sub-process has been modified to include a verification task. This

involves auditing critical items to ensure the fidelity of the baselines. Baseline artifacts that had been previously baselined are being re-validated by the verification activity and formally re-entered into the baseline.

The following section describes the baseline control process.

### **2.4.3 Baseline Control**

Baseline control for baseline management is in place in the form of an ECS CCB, a Version 2 CCB, and an EDF CCB. The structure and scope of the control boards and review boards have been defined as shown in Tables 2.4-1a and 2.4-1b. Table 2.4-2 shows the roles and responsibilities of ECS organizations that support the respective boards. In general, all changes to controlled items are presented to the appropriate CCB prior to implementation. This allows for adequate review and approval of all baseline changes, except for NCRs, prior to work beginning. The CCB process also allows for the review of the results of the test program prior to deployment to operational sites. This value added step helps ensure that only high quality products with a known and traceable pedigree are provided to our customers.

The operations of the Version 2 CCB are in accordance with established ECS procedures and work instructions. (Formal update to the ECS Project CCB's: Allocation of Authority and Responsibility for the ECS Project (151-TR-001-005) and the ECS Documentation Management and Control (152-TR-001-004) are in the revision process.)

From the development environment, software changes will migrate ultimately to operations. The initial step is the merge from development into an integration baseline. From this baseline, the changes are installed in the Mini-DAAC for Operability testing. Software CM functions will exercise control of the Mini-DAAC software baseline. The merge of new software from the development environment into the Mini-DAAC will be a considered and disciplined process to ensure control of the integration and operability environment. Turnover for installation in the VATC will be authorized by the Version 2 CCB. This installation authorization will be by CCR which will include the documentation of changes to the controlled baseline. Further, the Version 2 CCB will control the turnover and installation of each baseline at each DAAC and the SMC.

**Table 2.4-1a. ECS Control Board Structure**

<b>Control Board</b>	<b>Membership</b>	<b>Scope</b>
<p>ECS Management Review Board Purpose: Provide program management-level status review and direction</p>	<ul style="list-style-type: none"> <li>• Chair - Program Manager</li> <li>• Vice Chair - Deputy Program Manager</li> <li>• Managers of Systems Engineering, Architect's Office, Development, Deployment, Science, and Program Controls</li> <li>• Chief Engineer</li> <li>• Senior customer representation from Program Management, Development, and Test</li> </ul>	<ul style="list-style-type: none"> <li>• Act as the project-level coordinating entity to ensure that engineering, development, SSI&amp;T, test and deployment efforts remain correctly prioritized, supported, and synchronized</li> <li>• Adjudicate priority conflicts</li> <li>• Review cost and schedule implications of engineering redirection</li> </ul>
<p>ECS CCB (Project Level CCB) Purpose: Manage Project level changes</p>	<ul style="list-style-type: none"> <li>• Chair: Chief Engineer</li> <li>• Representatives from all ECS departments</li> </ul>	<ul style="list-style-type: none"> <li>• Review and disapprove/approve changes to the ECS baseline.</li> <li>• Review and disposition all Class I changes.</li> <li>• Authorize release of all system-level deliveries to customer.</li> <li>• Sole interface to the ESDIS CCB.</li> </ul>
<p>ECS Version 2 CCB Purpose: Manage the Version 2 development and deployment baselines</p>	<ul style="list-style-type: none"> <li>• Chair: ECS System Engineering</li> <li>• Representatives from all ECS departments</li> </ul>	<ul style="list-style-type: none"> <li>• Review and disapprove/approve changes to the ECS Version 2 baseline</li> <li>• Authorize the migration of the system from one test environment to the next.</li> <li>• Review and approve the deployment of system updates (including supporting documentation (e.g., VDDs, operational documents, read-me files, etc.) to the operational sites</li> </ul>
<p>EDF CCB Purpose: Manage the development &amp; test environments</p>	<ul style="list-style-type: none"> <li>• Chair: Deployment Manager</li> <li>• EDF Development Support representatives</li> <li>• Other representatives as necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Review and disapprove/approve changes to the ECS development &amp; test environments within the scope of the established baselines.</li> </ul>

**Table 2.4-1b. ECS Review Board Structure**

Review Board	Membership	Scope
<p>ECS NCR Review Board Purpose: Review NCRs and ROMs</p>	<ul style="list-style-type: none"> <li>• Chair: <b>Delivery Mgr.</b></li> <li>• ECS System Engineering Dept.               <ul style="list-style-type: none"> <li>• Chief Engineer</li> <li>• HW engineering rep.</li> <li>• Architect's office rep.</li> </ul> </li> <li>• ECS Development               <ul style="list-style-type: none"> <li>• Each Subsystem's rep.</li> <li>• Operability Team rep.</li> </ul> </li> <li>• ECS Deployment               <ul style="list-style-type: none"> <li>• SVAT rep.</li> <li>• GSFC DAAC rep.</li> <li>• EDC DAAC rep.</li> <li>• SMC rep.</li> </ul> </li> <li>• ECS Project Controls               <ul style="list-style-type: none"> <li>• ECS CM rep.</li> <li>• ECS Quality Office rep.</li> </ul> </li> <li>• ECS Science rep.</li> </ul>	<ul style="list-style-type: none"> <li>• Review and prioritize all Non-Conformance Reports relative to each other</li> <li>• Assess estimated cost and schedule to work-off NCRs</li> <li>• Collect statistics on, and report on the status of all NCRs</li> <li>• Support the Delivery Manager in resolving resource competition associated with NCRs and new functionality</li> <li>• Provide initial assessment of ROM requests</li> </ul>
<p>Engineering Review Board</p>	<ul style="list-style-type: none"> <li>• Chair: Delivery Mgr.</li> <li>• Chief Engineer</li> <li>• Architect's Office Mgr.</li> <li>• Deployment Mgr.</li> <li>• Test Mgr.</li> <li>• M&amp;O Mgr.</li> <li>• Science Office Mgr.</li> </ul>	<ul style="list-style-type: none"> <li>• Advise Delivery Manager regarding technical issues, priorities, and resource availability</li> </ul>

**Table 2.4-2. Version 2 Configuration Management Roles and Responsibilities for ECS Organizations**

Organization	Function
System Engineering	Chair ECS CCB Chair Version 2 CCB Chair NCR Board Define COTS HW design (e.g., CPU, memory, disk, RAID, network connects) Define COTS HW configuration (e.g., RAID and disk partitions) Define network design and topology (e.g., NFS mount points, DFS design, DCE implementation) Define system security design (e.g., router filters) Provide supporting data for Version Description Document Develop baseline documentation Support ICWG Review ICDs/IRDs Maintain baseline repository Administer CCBs Maintain CM records Provide CM status accounting Release Version Description Documents Lead configuration audits
Development	Member of Version 2 CCB Define COTS SW design (e.g., vendor and product, version, patch level) Define COTS SW configuration (e.g., installation configuration choices) Define custom SW design (e.g., subsystems, configuration items, components, versions, patches) Define custom SW configuration Define database design (e.g., schema, replication approach) Define custom and COTS SW installation (e.g., HW/SW mapping, mount points) Provide COTS SW supporting data for Version Description Document Develop baseline documentation Support configuration audits
Deployment	Member of Version 2 CCB Define site facility plans Define site network cable plans Install and configure COTS HW, COTS HW and custom SW in accordance with baseline data Provide Software configuration management tool administration (i.e. Clearcase) and builds Provide custom SW supporting data for Version Description Document Participate in Physical Configuration Audits Participate in Functional Configuration Audits Maintain baseline documentation
Program Controls	Member of Version 2 CCB Maintain schedules
Science	Member of Version 2 CCB Define PGE baseline including inputs/outputs, resource requirements, production rule requirements Define ESDT baseline including data types and services for ingested data and for production data Define and implement ESDT services Define SSI&T procedures Maintain baseline documentation

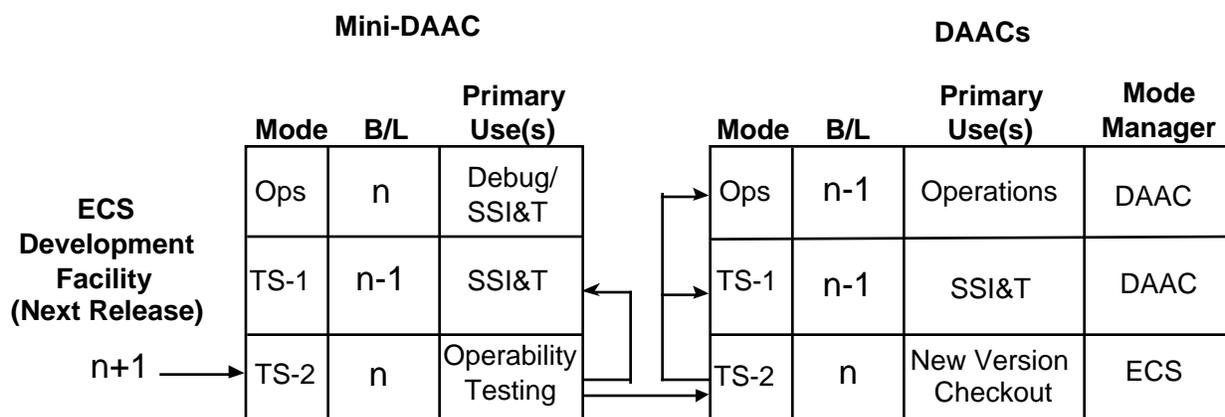
Critical to the success of the strategy presented in this plan is the timely and efficient migration of the drops comprising Release 2.0 from the development environment to the operational environment. Furthermore, the extent to which parallel activities can be introduced, the risk to achieving the defined schedule for mission success can be reduced and Operations' confidence will be maximized. The strategy of modes and mode management is key to the essential parallelism and is defined below. The purpose for its inclusion in this portion of the plan is the overarching considerations of baseline management and synchronization through the migration path.

#### 2.4.4 Mode Installation and Management

ECS has been designed to operate in multiple modes. This feature allows different versions of the system to exist and operate simultaneously on the same hardware suite at a single site. This is accomplished by replicating the system into different directories (modes) and providing separate databases for these modes. Because Unix is a multi-threaded operating system, these separate copies of the system can run simultaneously and not interfere with one another. In theory, any number of modes can be created. For example, in the ECS Development Facility, 4-6 modes are routinely in operation, each containing a different version of the ECS software under development. In practice, however, baseline management issues, and machine and network resources (CPU availability, disk space, communications paths) will limit the number of modes.

To meet operational requirements, ECS will create three modes in each hardware suite - the Mini-DAAC, VATC, and each DAAC. These three modes are identified as Ops, TS-1, and TS-2. Initially, disk partitions at the DAACs will be split 60% (Ops), 20% (TS-1), and 20% (TS-2) across these three modes. Therefore TS-1 and TS-2 will be about twice the size of the current Mini-DAAC (adequate for SSI&T) and Ops will be large enough to accommodate at launch requirements.

Development baselines will be managed as shown in Figure 2.4-2:



**Figure 2.4-2. Developmental Baseline Management**

When a new ECS version “n” has been checked out for operability in a controlled integration environment (Mini-DAAC and/or VATC), it is ported to the DAACs and placed into the TS-2 mode for checkout. The most current version of the system will usually be installed in TS-2 first. When the new version (“n”) has been configured, regression tested, and is ready for use, it can then be promoted (copied) into either or both of the two other modes as shown. The timing of this installation is discretionary and takes place under the control of the site’s controlling entity.

This checkout and installation strategy has several distinct advantages:

- The operations mode (Ops) remains stable until an explicit decision is taken to replace the baseline
- Any change to the baseline, including bug fixes, can be fully checked out in the individual DAAC before it is promoted to become the operational system
- SSI&T can be performed in a dedicated mode and isolated from ongoing operations and new deliveries, yet be readily synchronized with new version deliveries when the new versions are ready for installation
- The procedures for new version installation from TS-2 to either Ops or TS-1 can be refined and made routine, since the movement is identical each time (e.g., TS-2 first, careful and detailed preparation for movement, and then rapid movement to either Ops, TS-1, or both)
- New personnel training can be accommodated in modes other than those needed for ongoing operations

Multiple mode operation imposes a mandatory requirement to actively and aggressively manage baselines to avoid proliferation and continued use of outdated baselines. Because resources are limited, at any one time ECS will support three active baselines:

n-1 (the operational baseline)

n (the baseline being prepared for installation and under regression testing)

n+1 (the future version being developed in the ECS development facility)

The principal impact of the three baseline support limit will fall on formal SSI&T. Formal SSI&T must stay synchronized with the n-1 baseline, upgrading at the same time as the site Ops mode (or very shortly thereafter) to avoid being at the n-2 (or older) level and therefore being unsupported.

During the operational readiness and pre-launch certification periods, the official system undergoing test and certification will always be the version in the Ops mode. Transition from delivery and checkout to DAAC certification and then to full operations is a ramping process that is facilitated by the fact that the system being “officially” tested and certified will be housed in the mode (Ops) where it will eventually operate.

As PGEs become available and are certified in the formal SSI&T TS-1 mode, they can be moved in stepwise fashion from the SSI&T mode to the Ops mode, gracefully increasing scientific processing capability to at- and post-launch required levels.

#### **2.4.5 Non-Compliance Reports**

All ECS Non-Compliance Reports (NCRs) are entered into the Distributed Defect Tracking System (DDTS) tool for prioritization, assignment, and status tracking by the ECS NCR Review Board. The NCR Review Board will convene daily (or as required) with four topical areas reviewed at each session.

1. All new NCRs are reviewed for a coherent description of the problem, the need date, and the severity level recommended. The Review Board then assigns each NCR to a principal investigator.
2. All assigned NCRs are reviewed for status to assess progress toward resolution against the planned date. The planned date may be adjusted with the approval of the Review Board Chairman.
3. The Review Board will review the NCRs recommended for closure. This review evaluates the quality of the repair work and considers the analysis, repair, and verification results contained in the DDTS record.
4. The final topic focuses on key issues warranting review by the Delivery Manager, or potentially by the MRB. Key issues constitute failure to meet critical need dates and resource issues which require review and adjudication by the Delivery Manager or the MRB.

The NCR Review Board routinely provides status to the Daily Delivery Status Review meetings with emphasis on the key issues.

#### **2.4.6 Status Accounting**

Status accounting provides project management, the project technical team, ESDIS, the DAACs, and the project CCBs with the visibility of status for Configuration Items (CIs), CI components, CCRs, NCRs, and CM activities. This sub-process also includes reporting the configuration of each of the baselines being controlled. A critical part of this activity will be in ensuring that all changes are traceable to the items they impact and that the implementation status of changes is accurately reflected. This activity consists of the recording and reporting of the necessary information needed to manage the baselines (and their components) effectively. This information includes the master list of all controlled items, the status of proposed changes to those items, and the implementation status of approved changes.

#### **2.4.7 Configuration Audits**

Configuration audits will provide increased confidence in the integrity of the defined and controlled baseline. Both Functional and Physical Configuration Audits will continue to be performed. Functional Configuration Audits (FCA) will review the test results against the test

program. The Physical Configuration Audits (PCA) will compare the “as-built” against the baseline documentation. Currently PCAs for the hardware have been scheduled and are underway for all the DAACs. Results of these audits are being used to update the baseline documentation. Additional internal audits will be performed throughout the test environments. Much of this process has been automated allowing for “difference reports” to be generated.

The information used for the audits will be taken from the CM repository.

#### **2.4.8 CM Baseline Repository**

Baseline management for ECS is controlled through the appropriate CCB. Baseline management will be administered by ECS Project CM. Baseline documentation will be maintained by CM in a controlled repository. This repository will be viewable by project personnel.

The repository will include (or reference) the following types of information:

- Hardware (e.g., Design diagram)
- Software, COTS and custom (e.g., VDD, to include hardware-software mapping)
- Requirements (e.g. RTM)
- Network (e.g., Hardware Network diagram)
- Data (e.g., Databases)
- Procedural (e.g., Security)
- Other items as included in the baselines through the Version 2 CCB

The master copy of all items will be those available for viewing in the repository.

### **2.5 Development**

Development has analyzed the remaining work in Version 2 and has divided that work into launch-critical and non-launch-critical capabilities. Development subsystems have built low level, resource-loaded schedules for future work, prioritizing the assignment of staff resources to work that is launch critical. Other factors in prioritization included internal dependencies (needs by other subsystems developing related functionality) and external dependencies (e.g., for SSI&T or external interface tests).

The fundamental basis for the development schedule is the size, in source lines of code (SLOC) for the functionality to be delivered. The number of SLOC for the already delivered software are provided by reference to the software configuration tool, Clearcase. Estimates of code for new functionality are provided by developers in each subsystem. In addition, a common set of assumptions has been used to arrive at the Development schedule: productivity factors for code, unit test, and integration, number of anticipated NCRs per 1000 lines of delivered code, lines of code per NCR, need to support other activities (documentation, training, and installation), and available hours and days to be scheduled (e.g., 8 hours per day, no work on weekends or

holidays). Prior to baselining the schedule, the feasibility of the proposed schedule is ensured by reviewing all assumptions and resource loading, across subsystems.

The development integration schedule is determined by the anticipated unit test completion dates for each item to be integrated, and the dependencies across subsystems. Each subsystem is responsible for providing, prior to integration time, interface documentation including scenario descriptions, preconditions, and thread diagrams for each functionality to be integrated. Prior to turnover to test, additional documentation must be provided, including external and internal interaction tables. The integration team, which has dedicated membership from all of the subsystems, uses the interface documentation as the basis of its integration activities, and works to demonstrate the scenarios specified in that documentation. Development integration typically occurs in the development environment, though it may occasionally occur in the Mini-DAAC in order to accommodate a specific hardware configuration need.

The decision to turn over a software drop is based on the available capabilities in that drop, its stability, and the needs of test. In general, drops will be based primarily on schedule, and not on content. That is, although there is a plan for the contents of each drop, a decision may be made to turn it over after negotiating that it contain more or less functionality than originally planned. Any change in the planned functionality allocated to drops will be coordinated with ESDIS and submitted as a change to the Game Plan through a CCR to the ECS CCB.

Development has planned and allocated resources to work off NCRs in addition to completing new functionality. Development will proceed primarily on the next drop to be delivered, incorporating non-urgent NCRs in the next drop. In some cases (e.g., for severity 1 NCRs which prevent test from proceeding according to schedule), immediate patches may be required to the current drop being used by test or SSI&T. In this case, the Delivery Manager may decide that Development will immediately work to deliver the needed patch. Note that patches require more overhead for both development and test since they necessitate an extra installation (at least for affected executables) in both places. The Delivery Manager will consider this overhead, the urgency of the patch, and the scheduled delivery of the next drop before authorizing a patch.

## **2.6 Test**

Testing is conducted on each incremental delivery (drop) of software comprising Release 2.0. There are two controlled test environments in the Landover facility to support this testing; the Mini-DAAC and the VATC. Both environments allow restricted access to software and concurrent testing of multiple versions, or modes, of software. The VATC environment emulates a DAAC environment as much as possible to support early acceptance testing. This environment also allows remote access from other DAAC sites to support external interface testing and SSI&T.

Initial testing of a drop is performed by the Operability Team. This team consists of members from Development, Test, the Science Office, and the M&O organizations. Operability testing is conducted in a dedicated software mode in the Mini-DAAC test environment. The team's goal is to verify new capabilities and ensure the stability of a delivery before it is turned over to the test team. Automated regression tests that exercise end-to-end system threads are run to validate the

software. These tests provide repeatable, measurable results for comparison to previous software versions.

Following operability testing, a delivery is installed in a dedicated mode(s) in the VATC for functional testing. The goal of this test phase is to ensure that the software is sufficiently mature to begin acceptance testing. Functional tests mapped to Level 3 and Level 4 requirements are run to verify a predefined set of system capabilities. These tests are used to detect errors, verify NCR resolutions, and identify requirements as being partially or fully implemented.

Acceptance testing begins in the VATC shortly after functional testing, and continues beyond the functional test phase. The exact start of acceptance testing is determined by the results of functional testing, with the goal being to start as soon as possible. Acceptance tests exercise Launch Critical and Launch Essential scenarios provided by the DAACs. Performance and External Interface tests are also conducted to the extent possible in a test environment. Acceptance testing in the VATC reduces the amount of testing needed at each DAAC, enabling operational readiness activities to begin soon after deployment.

Acceptance testing in the VATC is followed by Site testing. The objective of Site testing is to ensure that the software is configured correctly and can support operational readiness activities. The test procedures are designed to verify site specific functionality and Level 3 requirements. They focus on Launch Critical and Launch Essential scenarios, and include regression tests, site unique requirements, and the verification of site specific NCRs.

Site tests are designed to exercise the system as it would be used in day-to-day operations. System operability, performance, and external interfaces are tested under conditions that simulate operational activities. For example, system performance is verified by a series of 24 hour work load tests. There is one 24 hour test scheduled at GSFC for MODIS (ingest, processing, storage, distribution), and two at EDC for Landsat-7 (ingest, storage and distribution), and ASTER (ingest, storage, processing and distribution). These tests verify that a 24 hour work load can be accomplished within one day without developing a backlog. The tests are performed with live interfaces whenever possible, using Version 2 PGEs and large volumes of simulated data cloned from sample instrument team data. Participation by DAAC personnel during this phase of testing is encouraged to promote training and ensure a smooth transition into operational readiness.

## **2.7 Science Software Integration & Test (SSI&T)**

The operational procedures to accomplish the various steps that may be involved in the integration and test of Science Data Production Software (SDPS/W) with the ECS are documented in The Green Book. The Green Book is a Technical Data paper formally titled Science Software I&T Operational Procedures for the ECS Project (162-TD-001-003).

Formal SDPS/W integration and test (SSI&T) is performed at the Distributed Active Archive Center (DAAC) responsible for the generation of the standard products. General information concerning preparing and delivering SDPS/W to the DAAC is found in the *Science User's Guide and Operations Procedure Handbook for the ECS Project, Part 4: Software Developer's Guide to Preparation, Delivery, Integration and Test with ECS* (205-CD-002- 003). Each DAAC and

Instrument Team (IT) combination have formulated specific agreements, understandings, or procedures that will guide their respective SSI&T activities. The procedures in this document provide detailed instructions on how to use the tools that are provided in ECS to accomplish the steps outlined in the DAAC-IT procedures.

Prior to the delivery of the ECS software to the DAACs, SSI&T Checkout will be conducted on early versions of the Product Generation Executives (PGEs) using separate system modes in the ECS Mini-DAAC, VATC (Verification and Acceptance Test Configuration), or the Goddard DAAC environments. Within a mode, the ECS subsystems required to conduct early tests of Instrument Team PGEs will be exercised to assure they properly support SSI&T activities.

Four Instrument Teams have accepted the ECS offer to perform the early informal integration activity, and are providing early B data model PGEs for the initial checkout and integration. Table 2.7-1 lists the PGEs expected during the SSI&T Checkout period. There may be an opportunity to work on other PGEs not included in this list if they can be made available by the instrument teams.

**Table 2.7-1. SSI&T Checkout PGEs**

<b>Instrument[@Site]</b>	<b>PGE</b>	<b>Date</b>
CERES	GGEOMAN	10/22/97
	GEOPOST	10/22/97
MODIS@GSFC	PGE11	11/10/97
	PGE07	11/18/97
	PGE02	11/21/97
MISR	PGE02	11/04/97
	PGE05	11/04/97
	PGE07	12/02/97
ASTER	BROWSE	12/08/97
	PGE02 (DST)	12/08/97
	PGE03 (BTS)	12/08/97
	PGE04 (ACVS)	12/08/97
	PGE05 (ACT)	12/08/97
	PGE06 (ETS)	12/08/97
	QA	

The Science Department (SD) personnel assigned to support SSI&T will begin the SSI&T Checkout phase by updating the SSI&T Handbook ("Green Book") to reflect the changes between the Pre-Release B Testbed and the full-implementation ECS Release 2.0 system. Upon receipt of the early Version 2 PGEs from the Instrument Teams, the SD SSI&T personnel will begin exercising the revised procedures to ensure their accuracy, and will begin the process of integration and fault isolation normally encountered during Formal SSI&T. The goal of this

phase is to ensure correct operation of ECS components, as well as provide early feedback on the compatibility of the PGEs to the B Data model subsystems that were not implemented in the Pre-Release B Testbed.

The SSI&T handbook will be available in a draft form to coincide with the delivery of the SSI&T build (Drop 2). With the delivery of the SSI&T build to the Mini-DAAC, it is envisioned that DAAC SSI&T personnel will join ECS SD personnel in the informal integration of the DAAC-specific PGEs. Several of the DAACs have expressed an interest in sending some of their personnel to the ECS SSI&T labs to get a head start on learning the ECS software and on the procedures for conducting Formal SSI&T on the ECS Release 2.0 system. The Mini-DAAC also offers remote connection capability to aid in transition to the Formal SSI&T process at the remote DAACs.

The ESDTs required for SSI&T and ECS system integration have all been prepared and are nearing completion of test by the ESDT test group. As the V2 PGEs are received, the required ESDTs will be extracted from the EDF ClearCase configuration management archive and inserted into the Mini-DAAC or VATC Science Data Server. ESDT personnel will be brought in to support SSI&T personnel if anomalies with ESDTs or Metadata are found. If required, corrections to IT software will be tried, and reported to the Instrument Teams through an informal process. SSI&T personnel will generate NCRs for ECS system anomalies, but will not write trouble tickets against Instrument Team software.

Most of the early SSI&T Checkout activities will be conducted in the Mini-DAAC or VATC environments, permitting SD SSI&T personnel to have easier access to ECS developers for questions and system support. With approximately 18 PGEs planned for early test and integration, there will be system constraints on both the ECS Mini-DAAC and VATC SSI&T systems. To accelerate the throughput of PGEs through the early SSI&T Checkout process, several of the PGEs may be informally integrated and tested on the GSFC system, or an additional mode will be established in the Mini-DAAC or VATC to alleviate resource contention. SSI&T Checkout at the Goddard DAAC may therefore likely include Instruments other than MODIS. This may require special coordination with remote DAAC personnel on GSFC access and system privileges. The environments at each of these facilities are being sized to handle a variety of PGEs from the four participating Instrument Teams to permit flexibility of specific PGE integration against available resources.

Once ECS is installed at each remote DAAC, SD SSI&T personnel will aid the M&O organization in the training of DAAC SSI&T personnel in the procedures and operation of the ECS system to support Formal DAAC SSI&T. The Formal SSI&T process will be managed by the DAAC. Following the initial training at each DAAC, SD SSI&T personnel will be assigned to support the Formal DAAC SSI&T process for the duration of the SSI&T process, either on-site or on an on-call basis, whichever is the DAAC preference.

Table 2.7 -2 lists the PGEs that are expected to be included in the Formal SSI&T process prior to launch of AM-1. 18 MODIS PGEs are included in the list as a goal to achieve prior to launch, but are not required to be completed prior to EGS Certification. These PGEs are marked with an asterisk (\*).

**Table 2.7-2. Formal SSI&T PGEs (1 of 2)**

Instument[@Site]	PGE	Date
CERES	GGEOMAN	10/22/97
	GEOPOST	10/22/97
	GEOLOC01	10/24/97
	INSTCAL01	10/24/97
	Subsystem 2	11/07/97
	Subsystem 3	11/07/97
MODIS@GSFC	PGE11	11/10/97
	PGE07	11/18/97
	PGE02	11/21/97
	PGE09	12/30/97
	PGE10	11/26/97
	PGE08	11/26/97
	PGE12	12/12/97
	PGE01	01/23/98
	PGE03	01/21/98
	PGE04	02/13/98
	PGE05	01/23/98
	PGE06*	02/17/98
	PGE13	12/16/97
	PGE14*	12/16/97
	PGE15*	12/16/97
	PGE17*	01/14/98
	PGE18*	12/29/97
	PGE19*	01/14/98
	PGE20	12/29/97
	PGE29	03/27/98
	PGE49	12/29/97
	PGE50	12/29/97
	PGE53	12/29/97
PGE54*	12/29/97	
PGE55*	01/12/98	
MODIS@EDC	PGE21	12/23/97
	PGE33*	12/12/97
	PGE22*	01/14/98
	PGE37*	01/15/98
	PGE25	01/27/98
	PGE23*	02/17/98
	PGE34*	02/18/98
	PGE36*	02/18/98
	PGE29	01/16/97
	* Not required for EGS Certification	

**Table 2.7-2. Formal SSI&T PGEs (2 of 2)**

<b>Instument[@Site]</b>	<b>PGE</b>	<b>Date</b>
MODIS@NSIDC	PGE43* PGE44* PGE45* PGE47*  * Not required for EGS Certification	03/09/98 03/16/98 03/09/98 03/16/98
MISR	PGE02 PGE05 PGE01 PGE03 PGE04 PGE06 PGE07 PGE08 PGE09	11/04/97 11/04/97 TBD TBD TBD TBD TBD TBD
ASTER	BROWSE PGE02 (DST) PGE03 (BTS) PGE04 (ACVS) PGE05 (ACT) PGE06 (ETS) QA	12/08/97 12/08/97 12/08/97 12/08/97 12/08/97 12/08/97

## 2.8 Training and Certification

The training program addresses the training of certified and non-certified ECS maintenance and operations (M&O) personnel. A certified position is a position that includes performance of any system-critical operations or maintenance tasks. Non-certified positions are all other ECS maintenance and operations (M&O) positions, investigators and investigator support personnel, Distributed Active Archive Center (DAAC) M&O staff not involved in the maintenance and operation of ECS, National Aeronautics and Space Administration (NASA) management and technical personnel and independent verification & validation (IV&V) contractor personnel.

The ECS training program is based on the following principles:

- M&O training will be designed or selected to ensure that operations and maintenance personnel can effectively maintain and operate the ECS system and meet the certification standards recommended in the M&O Certification Plan (DID 626).
- The training program will employ the lowest cost training options that satisfy performance and certification needs.

- Training will be scheduled "just-in-time" to achieve maximum retention of knowledge for application on the job.

The ECS Training Plan is presented in DID 622 was delivered on 7/31/97. The Training Plan identifies training responsibilities by organization. ECS operations training course materials are provided in DID 625. M&O Certification Requirements are described in DID 626.

As defined in the ECS Training Plan, DID 625 (Training Material) is being developed to support the training effort. This material is divided into fourteen lessons that will be used to present Drop 2 functionality to the DAAC M&O staff. This CDRL will be delivered 12/15/97 and will be used in the training courses scheduled to start in December 1997 and continue through February 1998. The initial training courses are scheduled to be conducted at the EDF and will present selected training lessons (from the delivered DID 625 Training Material) that support the pre-production status that the system will initially use when the Drop 2 software is installed at the DAACs. A second series of courses scheduled during the April-May timeframe will use the Drop 3 system functionality. This effort will emphasize lessons that will aid the DAAC staff in preparation to support the production effort and will review any major differences from the previous software build. The successful presentation of the training courses will be dependent on use of the mini-DAAC and/or the VATC strings. Additionally, support personnel (hardware and software) prior to and during the training courses will be required on an as needed basis. The planned formal training courses will use the latest software build installed on the system at the time the training is to occur.

As new drops become available, training material will be updated to reflect the latest configuration of the system and will be used as appropriate during scheduled training courses. Training for drops delivered after Drop 3 will require support from software developers in order to train/inform the staff at the DAACs. As these smaller updates are delivered, a Release Notes package will be developed and delivered by the software developers during installation. The level of detail for the Release Notes will include a detailed description of the functionality change(s) as well as updates to any procedural changes.

Drops after the Drop 3 training that result in **major** functional changes may require additional training to be prepared and presented by the ECS M&O Training Staff. This training requirement will be determined on a case by case basis. As enhancements are assigned to a drop, an analysis will be performed to determine the recommended training approach. In some cases, Release Notes may suffice for the transfer of information. In other cases, a formal training lesson may be required.

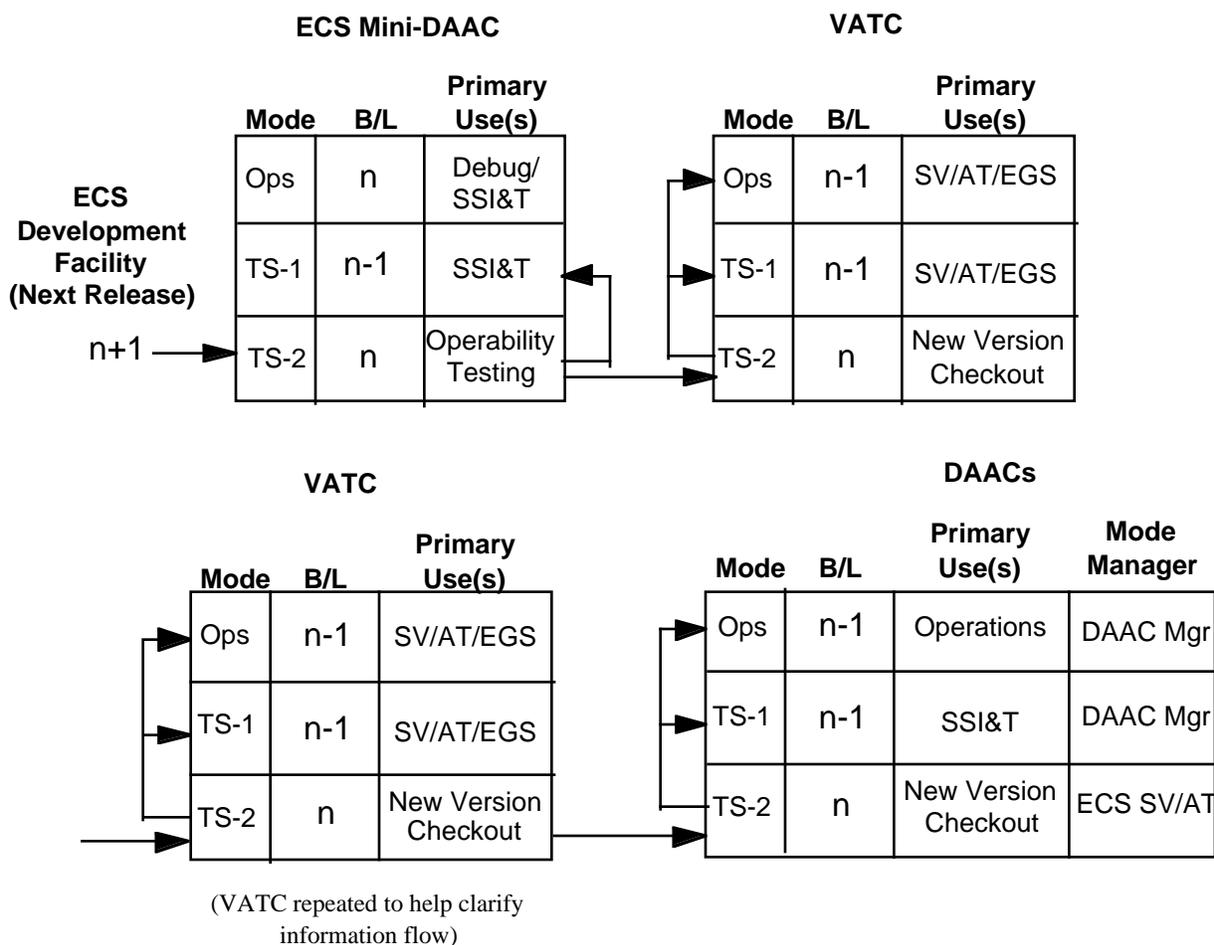
The ECS training program leads up to certifying that the M&O staff is prepared and able to operate the system.

## 2.9 Operational Launch Readiness

Operational launch readiness is a DAAC-centric activity, supported by ECS, that includes formal SSI&T, EOS Ground System (EGS) testing, EGS certification, and DAAC operational rehearsals. For ECS Release 2.0, operational launch readiness activities begin at a DAAC after installation and checkout of the first Drop that DAAC receives (see Master Schedule in section

2.2). However, operational launch readiness at the DAACs must coexist with, and absorb, incremental deliveries (Drops) from ECS through and after launch. At some point during the operational readiness activities, the next Drop will be delivered to that DAAC for installation and checkout. When this Drop is installed and checked out at the DAAC, operational readiness activities will be switched over to this drop to exercise the additional capabilities included in it in addition to those already delivered. Subsequent Drops supersede previous Drops in this same manner.

Mode management, presented in section 2.4.4, provides a mechanism for the DAAC to control these incremental deliveries. The notional transition from the ECS Mini-DAAC through the VATC and on to the DAACs is given in Figure 2.9-1.



**Figure 2.9-1. Notional Transition from VATC to the DAACs.**

After checkout of the new version in VATC, the software is transferred to the DAACs for checkout in that DAAC's environment. Once checkout is completed in the New Version Checkout (TS-2) mode, the new version is promoted to the SSI&T (TS-1) and Operations (Ops)

modes at the DAACs, replacing the previous version with the newer version. Because of the staggered installation schedule for the DAACs, there are short periods of time when different DAACs may have baselines of the n or n-1 version. ECS will only support two fielded versions at the DAACs, i.e. n or n-1.

Benefits of this transition process at the DAACs include:

- Early migration from V1 Pre-Release B Testbed to V2 SSI&T checkout on target DAAC HW
- Early DAAC/EGS test capability at DAAC
- Continuity of DAAC SSI&T and DAAC/EGS testing
- Isolation of DAAC modes
- Rolling turnover of deliveries from ECS/AT to DAACs provides capabilities as early as possible
- Repetitive process provides the opportunity to refine and improve process

The local DAAC baseline is controlled and managed by the DAAC in accordance with the ESDIS "Policies of the Distributed Active Archive Centers, October 1997." Discrepancies (i.e., problems with ECS-deliveries and/or missing functionality), discovered after the start of operational launch readiness, are reported as NCRs with a recommended priority. DAAC-developed workarounds and/or extensions are expected due to operational commitments and these workarounds and/or extensions are also controlled and managed according to ESDIS "Policies of the Distributed Active Archive Centers, October 1997."

The Operational Readiness Plan (DID 603) identifies those activities required to prepare the ECS for operation 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 when the system is ready to be deployed through the point of declaring ECS ready for initial operations mission events. That readiness point is termed the ECS Operations Readiness Review (ORR) which is scheduled by each respective site, and is a prerequisite to ECS participation in Mission Readiness activities. Operational Readiness Exercises (ORE) and their success criteria are described in the Operational Readiness Plan, as are the success criteria for the Operational Readiness Review.

Operations positions are identified and described in DID 607. The Training Plan leading to operational readiness is described in DID 622, as indicated in the previous section. And the specification of logistics requirements are provided in DID 613.

Post-launch activities include:

- Delivery of incremental deliveries from VATC to the DAACs
- Installation and checkout of the new deliveries by ECS/AT
- Promotion of the new deliveries to SSI&T and Operations modes at the DAACs

- Control and maintenance of the local DAAC baselines by the DAACs according to ESDIS "Policies of the Distributed Active Archive Centers, October 1997"
- Reporting of discrepancies (problems and/or missing functionality)
- Development by DAACs of operational workarounds and/or extensions, as required, according to ESDIS "Policies of the Distributed Active Archive Centers, October 1997"

## **2.10 Risk Management**

The ECS Risk Management Panel (RMP) meets bi-weekly and is chaired by the Program Management Office, which has explicit decision making authority for risk management. The panel members are the project's Department Directors, the project Chief Engineer, the System Verification and Acceptance Manager, the COTS Procurement Manager, and the Delivery Manager. These panel members attend and participate in all Risk Management Panel activities. The Delivery Manager is a key participant in the Risk Management process, keeping abreast of, and submitting, risks which directly impact ECS deliveries. ECS Project Instruction PM-1-002A describes in detail the Risk Management Process used on ECS.

## 3. Game Plan Implementation

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### 3.1 Delivery Manager

Responsibility for the implementation of this plan for all releases/drops rests with the Delivery Manager. Utilizing daily meetings in a designated War Room (see section 3.3) attended by empowered individuals representing each department, the Delivery Manager will control the delivery process. These meetings will provide the forum for the Delivery Manager to perform day-to-day schedule tracking and issue resolution. Any deviation from this plan must be authorized by him. Issues will be brought to his attention and tracked in a Red Book (see section 3.4).

The Delivery Manager is responsible for the content and schedule of ECS system deliveries. He will provide a single interface for Management Review Board (MRB) status reporting and issue resolution. And he will make recommendations to the MRB for cross organizational work priorities related to each delivery which are significant or unresolvable at the daily status review

The Delivery Manager is supported by an Engineering Review Board consisting of the Chief Engineer, the Architect's Office, and the System Engineering department.. This Engineering Review Board performs issue analysis as deemed necessary by the Delivery Manager. Support is also provided by Development, Deployment, and the Science Office, as needed.

### 3.2 Daily Delivery Status Review

The Delivery Manager will hold daily delivery status meetings. These meetings are expected to last 30-45 minutes. Every day at these meetings Red Book issues will be reviewed. Departmental status will be reported primarily in the form of identifying any exceptions to the Game Plan. New issues are identified at this time, if any, to begin to assess their program impact and identify an approach to their resolution and the resources required. Any other inter-departmental dependencies are identified to initiate cross department coordination activities.

A Red Book will be maintained to track problems and their resolution. It will define each issue, present the recovery approach, the schedule to complete, and who is accountable. The Red Book is available to interested parties and a copy of it remains in the War Room

Some of the definitions that apply to the activities of these daily meetings are:

**Exceptions** - Any deviation from the plan will be considered an exception to the plan. Exceptions reporting will include 1) the cause of the deviation, 2) any ripple effect of the deviation (use the logic network to illustrate), 3) recovery plan including measurable schedule, and 4) a net resource impact assessment. Exceptions shall be reported immediately without regard to the daily delivery status review agenda.

**Critical Issues** - Critical issues shall be captured in the 'Red Book'. The criteria applied in the determination of a critical issue shall be 1) schedule variance from the plan,

2) capability variance from the plan, and 3) and any other issue the Delivery Manager chooses to designate.

**Full Disclosure** - Any and all information which bears on the plan to include both the actual accomplishments, the actual exceptions, and any/all forecasting of potential deviations from the plan.

**Lead Organizations/Individuals** - For the purpose of the daily delivery reviews, lead organizations/individuals will be identified as responsible for specific items or topics. It is incumbent on all individuals and organizations to support the lead in accumulating, evaluating, and assessing the pertinent data and information.

**Schedule traceability** - For the purpose of tracking plan vs. actual, complete traceability and visibility to the October '97 replan shall be maintained until the Delivery Manager chooses to accept a subsequent replan as a replacement plan.

### 3.3 War Room

The War Room is located in Room 2061. It functions as the nerve center for ECS development. Daily meetings are held to understand issues, re-prioritize tasks when needed, and provide a leadership focal point. These meetings will be chaired by the Version 2 Delivery Manager. Authority to apply and/or change priorities rests only with the Delivery Manager.

The War Room contains:

- 1) Communications Board: Key decisions, Critical issues
- 2) Technical Board: Latest COTS baseline versions, current custom S/W baseline, System diagram (S/W perspective depicting interfaces between subsystems), H/W network diagram
- 3) Schedule Board: Summary level, tracking level, reporting level
- 4) Risk Board: Identification, tracking, status
- 5) Metrics Board:
  - Plan vs actual for -
    - Development (code complete)
    - Test (procedures written, executed, passed, and failed)
    - Training/certification (numbers by site)
  - NCR tracking - by severity level, subsystem, opens, closes
  - Hardware Robustness - failures, downtime, MTTR actuals, availability
  - Critical capability/functionality verified/tested
- 6) GFE information (i.e., "Policies of the Distributed Active Archive Centers")
- 7) Data book for each site (Mini-DAAC, VATC, six DAACs)
- 8) Red Book

# Appendix A. At Launch System Capabilities

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This table represents version 1.0 of the Capabilities list for Release 2.0.

## At Launch System Capabilities

(P is Post Launch Delivery)

ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
0010	Ingest	Basic Services	Network and media ingest requests	X	1.0		
0020	Ingest	Basic Services	Session management	X	1.0		
0030	Ingest	Basic Services	Request management	X	1.0		
0060	Ingest	Basic Services	Metadata extraction and validation	X	1.0		
0070	Ingest	Basic Services	Add new data types (basic manual capability)	X	1.0		
0080	Ingest	Data Type Preprocessing	L70R (with fixed scene and subinterval metadata extraction)	X	1.0		
0090	Ingest	Data Type Preprocessing	IAS Calibration Parameter Files	X	1.0		
0100	Ingest	Data Type Preprocessing	MOD00 data type	X	1.0		
0130	Ingest	Data Type Preprocessing	ASTER expedited data type	X	1.0		
0220	Ingest	Network Ingest Requests	Landsat-7 (direct)	X	1.0		
0230	Ingest	Network Ingest Requests	IAS (polling)	X	1.0		
0240	Ingest	Network Ingest Requests	EDOS (polling)	X	1.0		
0260	Ingest	Network Ingest Requests	Algorithm Packages (interactive)	X	1.0		
0300	Ingest	Media Ingest Requests	ASTER (D3)	X	1.0		
0320	Ingest	Operator GUI	Basic capability to initiate and monitor ingest requests	X	1.0		
0430	Planning	Production Request Editor	Enter Production Request (PR)	X	1.0		
0440	Planning	Production Request Editor	Review PR	X	1.0		
0450	Planning	Production Request Editor	Generate Data Processing Request (DPR) for future and past data	X	1.0		
0460	Planning	Production Request Editor	Review DPR	X	1.0		
0470	Planning	Production Request Editor	Production Request Editor GUI	X	1.0		
0510	Planning	Production Planning Workbench	Candidate allocation of Production Processing (DPRs) to DAAC Resources	X	1.0		
0520	Planning	Production Planning Workbench	Develop Candidate Plan(s) according to Production Rules	X	1.0		
0521	Planning	Production Planning Workbench	Production rule: Advanced temporal	X	1.0		Input time range /= output time range (common L1 rule)
0522	Planning	Production Planning Workbench	Production rule: Orbit-based activation	X	1.0		Absolute orbit number (MISR L1)

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(P is Post Launch Delivery)

ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
0530	Planning	Production Planning Workbench	Production rule: Period specification	X	1.0		Repeat activations every 'n' hours (common L1 rule)
0531	Planning	Production Planning Workbench	Production rule: Alternate ancillary inputs	X	1.0		Chose alternate inputs if prime ancillary not available (MODIS L1B, ASTER L2)
0532	Planning	Production Planning Workbench	Production rule: Metadata based activation	X	1.0		Activation based on inventory metadata (common L1 rule)
0533	Planning	Production Planning Workbench	Production rule: Intermittent activation	X	1.0		Repeat activation every 'n' DPRs (common QA rule)
0670	Planning	Production Planning Workbench	Schedule PR, DPR	X	1.0		
0680	Planning	Production Planning Workbench	Activate Plan	X	1.0		
0690	Planning	Production Planning Workbench	Production Planning Timeline	X	1.0		
0830	Planning	Resource Planning Workbench	Resource Editor GUI	X	1.0		
0840	Planning	Subscription Editor	Enter/withdraw subscriptions based on advertised events and services	X	1.0		
0850	Planning	Subscription Manager	Manage Subscription Notification (monitor for data availability before submitting DPR)	X	1.0		
0990	Processing	Job Management	Add Jobs	X	1.0		
1020	Processing	Job Management	Implement Job Dependencies	X	1.0		
1030	Processing	Job Management	Release Jobs	X	1.0		
1070	Processing	AutoSys Scheduling (COTS)	Manual Startup/Shutdown	X	1.0		
1080	Processing	AutoSys Scheduling (COTS)	Full COTS Functionality	X	1.0		
1090	Processing	Resource Management	Allocate/deallocate resources except for disk space	X	1.0		
1100	Processing	PGE Execution Management	Stage PGE	X	1.0		
1110	Processing	PGE Execution Management	Execute PGE (including Data Preprocessing PGEs)	X	1.0		
1120	Processing	PGE Execution Management	Manage PGE execution	X	1.0		
1130	Processing	PGE Execution Management	Collect resource statistics	X	1.0		
1140	Processing	PGE Execution Management	Generate Production History (file based only)	X	1.0		

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ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
1160	Processing	PGE Execution Management	Failed PGE handling	X	1.0		
1180	Processing	Data Management	State/Destage science data products	X	1.0		
1200	Processing	QA Monitor	Access product data	X	1.0		
1210	Processing	QA Monitor	Update DAAC QA Metadata	X	1.0		
1220	Processing	QA Monitor	Visualize Product Data	X	1.0		
1240	Processing	Science Software Integration & Test (SSIT) Manager	Enter Subscriptions	X	1.0		
1250	Processing	Science Software Integration & Test (SSIT) Manager	Register PGE	X	1.0		
1260	Processing	Science Software Integration & Test (SSIT) Manager	Archive PGE.exe tar file	X	1.0		
1270	Processing	Science Software Integration & Test (SSIT) Manager	SSAP GUI	X	1.0		
1280	Processing	Science Software Integration & Test (SSIT) Manager	Update PDPS/SSIT DB GUI	X	1.0		
1290	Processing	Science Software Integration & Test (SSIT) Manager	SSIT Tools (prohibited function checker, PCF checker, binary file differences, HDF comparison tool, profiling)	X	1.0		
1300	Processing	DPREP	Orbit/Attitude data processing	X	1.0		
1500	SDP Toolkit	Release B Toolkit	SCF Toolkit	X	1.0		
1510	SDP Toolkit	Release B Toolkit	DAAC Toolkit	X	1.0		
1640	Data Management	Version 0 Gateway	Directory Search (V0-ECS)	X	1.0		
1650	Data Management	Version 0 Gateway	Inventory Search (V0-ECS)	X	1.0		
1660	Data Management	Version 0 Gateway	Product Request (V0-ECS)	X	1.0		
1670	Data Management	Version 0 Gateway	FTP Browse (V0-ECS)	X	1.0		
1960	SDSRV	Insert Product	Science product	X	1.0		
1970	SDSRV	Insert Product	Browse product (as a separate product)	X	1.0		
2000	SDSRV	Insert Product	Simplified expedited data products (manual delete)	X	1.0		
2020	SDSRV	Insert Product	Production History files	X	1.0		
2030	SDSRV	Insert Product	Interim files	X	1.0		
2060	SDSRV	Acquire Product	Science product	X	1.0		
2070	SDSRV	Acquire Product	Browse product (as a separate product)	X	1.0		
2100	SDSRV	Acquire Product	Production History files	X	1.0		
2110	SDSRV	Acquire Product	Simplified expedited data products	X	1.0		
2130	SDSRV	Acquire Product	Interim files	X	1.0		
2160	SDSRV	Update Metadata	Update QA metadata	X	1.0		
2170	SDSRV	Search / Inspect	Basic spatial, temporal, core attribute queries	X	1.0		

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(P is Post Launch Delivery)

ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
2260	SDSRV	Add new ESDTs	ESDT Installation GUI	X	1.0		
2270	SDSRV	Add new ESDTs	Export advertisements	X	1.0		
2330	SDSRV	Subsetting	L70R WRS scene based subsetting [DLL]	X	1.0		
2400	SDSRV	B.0 Data Model Upgrade	August demo version	X	1.0		
2420	SDSRV	Event Triggering	Send events to subscription services	X	1.0		
2620	Storage Management	Basic Services	Data insert into the archive	X	1.0		
2630	Storage Management	Basic Services	Local and remote data acquire from the archive	X	1.0		
2660	Storage Management	Basic Services	Single node scheduling and management of physical media devices used by Ingest and Data Distribution (8mm tape, D3 tape)	X	1.0		
2670	Storage Management	Basic Services	Monitoring and management of electronic distribution area	X	1.0		
2700	Storage Management	Internal	Complete port to SGI	X	1.0		
2820	Data Distribution	Basic Services	Request management	X	1.0		
2830	Data Distribution	Basic Services	Electronic Push Requests	X	1.0		
2840	Data Distribution	Basic Services	Electronic Pull Requests	X	1.0		
2850	Data Distribution	Basic Services	8mm tape Requests	X	1.0		
2910	Data Distribution	Operator GUI	Basic status functions	X	1.0		
3020	Interoperability	Advertising Service	Submit / Query product and service advertisements	X	1.0		
3110	Client	User Registration Tool (integrated with Home Page)		X	1.0		
3120	Client	Desktop	DAAC desktop	X	1.0		
3130	Client	Desktop	Science User Desktop	X	1.0		
3140	Client	BOSOT (Version 0 Search & Order tool)	Basic capabilities	X	1.0		
3150	Client	EOSView	All functions	X	1.0		
3530	System Mgmt	Fault Management	Trouble Ticketing using Remedy	X	1.0		Log and maintain trouble tickets
3560	System Mgmt	Configuration Management	NCR management using DDTS	X	1.0		Input, store, modify, report NCRs/CCRs
3590	System Mgmt	Accountability	User registration	X	1.0		Allow for registering ECS users
3591	System Mgmt	Accountability	User registration operator tool	X	1.0		Allow M&O staff to register a user
3620	System Mgmt	Accountability	Order tracking (request level)	X	1.0		Allows M&O to monitor tracking status
3621	System Mgmt	Accountability	Order Update Server	X	1.0		Allows operator to insert, delete, add order status.

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ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
3960	Infrastructure	Distributed Computing Services	Time, Name and Security Services	X	1.0		
3970	Infrastructure	Distributed Computing Services	User authentication (but no Access Control Lists)	X	1.0		
3980	Infrastructure	Distributed Computing Services	Server Request Framework (basic message passing & persistence)	X	1.0		
3990	Infrastructure	Distributed Computing Services	Process Framework including mode management & configuration file support	X	1.0		
4000	Infrastructure	Distributed Computing Services	Universal References (URs)	X	1.0		
4010	Infrastructure	Distributed Computing Services	File access / copy services	X	1.0		
4030	Infrastructure	Distributed Computing Services	E-mail services	X	1.0		
4320	Infrastructure	Subscription Services	Subscription event notification	X	1.0		
4330	Infrastructure	Subscription Services	Qualified and unqualified subscriptions	X	1.0		
2230	SDSRV	Delete Product	Interim files		1.0		
2880	Data Distribution	Basic Services	Automatic suspend thresholds for large requests (electronic, hard media)	X	2.0		threshold limit is configurable; will be documented in Operability turnover document
2890	Data Distribution	Basic Services	Send distribution notification to L-7 billing system	X	2.0		
2920	Data Distribution	Operator GUI	Suspend, suspend all, resume, cancel commands	I	2.0		was Drop4
2930	Data Distribution	Operator GUI	Change priority command	I	2.0		was Drop4
4310	Infrastructure	Subscription Services	Create, update, status, delete subscriptions via Operator GUI	X	2.0		
0490	Planning	Production Request Editor	Database cleanup scripts (in support of Ad Hoc Reprocessing)	X	2.0		Provides for manual ad hoc reprocessing
1000	Processing	Job Management	Use of multiple AutoSys instances	X	2.0		
1010	Processing	Job Management	Automatic deletion of jobs from AutoSys	X	2.0		
1040	Processing	Job Management	UI to view state of jobs in active plan and to change the priority of queued jobs and to cancel jobs	X	2.0		This should include insertion of jobs in the queue
2411	SDSRV	B.0 Data Model Upgrade	Non August Demo Upgrades	X	2.0		
3630	System Mgmt	Manage Applications	HP Openview Network Node Manage (NNM)	X	2.0		HPOV Start-Up Shut Down Appls
3160	Client	DAR Submit Tool		X	3.0		
2870	Data Distribution	Basic Services	Basic automatic chunking of large requests (a.k.a. Request from Hell)	X	3.0		Expect capability to be delivered in Drop 3 but will likely have liens.

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ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
2900	Data Distribution	Basic Services	Order tracking (Request level)	X	3.0		
2993	Data Distribution	Internal	Fault Recovery: Rebinding	X	3.0		Provide capability for DDIST to reconnect
1550	Data Management	Data Dictionary	Insert to Data Dictionary contents	X	3.0		Insert Collection from SDSRV and Insert Attribute Mappings Code delivered in Drop 3.
1880	Data Management	Internal	V0GTY - make IK library thread safe	X	3.0		
1890	Data Management	Internal	V0GTY - DCE login context on per thread basis	X	3.0		
1910	Data Management	Internal	V0GTY - shutdown	X	3.0		
1920	Data Management	Internal	V0GTY - memory leaks	X	3.0		
1610	Data Management	Local Information Management	Acquire including order tracking	X	3.0		The ability to order the data, given a UR, whether a search has been performed within the same session or not. This is Drop 3 due to L-7 B&A workaround.
1630	Data Management	Local Information Management	L-7 billing and accounting workaround	X	3.0		
1655	Data Management	Version 0 Gateway	L-7 billing and account workaround	X	3.0		For product requests for L70R fixed scene products, the gateway will not send the request to the SDSRV, but will send it to the LIM. It also will not recreate the order but will use the REQUEST_ID given by EDC to update the status of the request/order.
1710	Data Management	Version 0 Gateway	Product Request (ECS-V0)	X	3.0		The ability to order the data, given a UR, whether a search has been performed within the same session or not. Needed for L-7 billing and accounting workaround
4151	Infrastructure	Communication Gateways	Landsat-7 - Rebinding	X	3.0		
4190	Infrastructure	Communication Gateways	ASTER - Integration with modified APIs	X	3.0		
4213	Infrastructure	Communication Gateways	ASTER - Rebinding	X	3.0		
4250	Infrastructure	Communication Gateways	Email - Acquire request to SDSRV	X	3.0		
4260	Infrastructure	Communication Gateways	Email - EDN creation	X	3.0		
4270	Infrastructure	Communication Gateways	Email - EDR processing	X	3.0		
4301	Infrastructure	Communication Gateways	Email - Rebinding	X	3.0		
4060	Infrastructure	Distributed Computing Services	New ServerUR	X	3.0		does not include service broker or ftp w/notification
4111	Infrastructure	Distributed Computing Services	Fault Recovery: provide generic request ID	X	3.0		
4570	Infrastructure	Internal	Remove CDS cache bypass code	X	3.0		many subsystems need to do this, not just IDG
4621	Infrastructure	Internal	Fault / Recovery Framework	X	3.0		

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ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
4550	Infrastructure	Remote SSIT	Remote access to authorized users via ktelnet	X	3.0		
4380	Infrastructure	Subscription Services	Asynchronous actions	X	3.0		possible NCR; scope of work under evaluation
4431	Infrastructure	Subscription Services	Fault Recovery- Sybase transaction processing	X	3.0		Includes: graceful shutdown, subscription persistent queueing, action persistent queueing, check for duplicate event triggers, integration of SRF client failure mechanisms, Sybase transaction processing; also email receipt checking (nonLC?)
4432	Infrastructure	Subscription Services	Concurrent Request Processing	X	3.0		concurrent acquires against SDSRV
0110	Ingest	Data Type Preprocessing	Other AM-1 data types	X	3.0		
0120	Ingest	Data Type Preprocessing	ASTER L1A/L1B data types	X	3.0		Capability will exist by Drop 3 but unlikely we will have ICD compliant tapes from GDS by then.
0360	Ingest	Internal	Complete port to SGI		3.0	U	
0370	Ingest	Internal	Concurrent Request Processing	X	3.0		needs to be tested
0390	Ingest	Internal	Recovery: rebinding, request ids, checkpoint	X	3.0		
3040	Interoperability	Advertising Service	Moderation services	X	3.0		
3060	Interoperability	Internal	Concurrent request processing	X	3.0		
3070	Interoperability	Internal	Robustness	X	3.0	D	captured as NCRs - not reported in this table
3081	Interoperability	Internal	Fault Recovery - Rebinding	X	3.0		
0880	Planning	Internal	Subscription Mgr concurrency bugs	X	3.0		
0910	Planning	Internal	Purify everything	X	3.0		
0540	Planning	Production Planning Workbench	Production rule: Spatial query	X	3.0		Spatial query for input ancillary (ASTER L2); will get info needed from Advertising, not SDSRV
0570	Planning	Production Planning Workbench	Production rule: Metadata-based query for static input granules	X	3.0		Input granule selection based on metadata - archived granules only (MISR L1)
0610	Planning	Production Planning Workbench	Production rule: Runtime parameter flag	X	3.0		Obtaining run time parameters from PDPS database (MISRL1, MODIS L2)
0650	Planning	Production Planning Workbench	Production rule: Accessing 0-233 orbit number	X	3.0	U	Data selection based on relative orbit number (MISR L1)
0700	Planning	Production Planning Workbench	Reactivation/Replan	X	3.0		
0720	Planning	Production Planning Workbench	Non-exact match in query (query DSS first & match predictions)/Handle "instant" granules in Subscription Mgr		3.0	XU	
0730	Planning	Production Planning Workbench	Handle single date/time data (NCEP)	X	3.0		
0740	Planning	Production Planning Workbench	Save a Plan (Prs, strategy, timeframe, active state)	X	3.0		
1320	Processing	Internal	Support for replanning	X	3.0		

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ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
1360	Processing	Internal	Parallel Data Server Acquires/Inserts	X	3.0		
1361	Processing	Internal	Check for Deadlocks	X	3.0		
1390	Processing	Internal	Restart of job box	X	3.0		
1430	Processing	Internal	Fix file watcher job	X	3.0		
2120	SDE	Acquire Product	ASTER expedited data product with signal file [DLL]	X	3.0		Will work for electronic distribution, but not for media
2150	SDE	Acquire Product	L-7 scene distribution (with CPF) [DLL]	X	3.0		
2390	SDE	Data Format Conversion	Landsat-7 distribution format (DFCB) [DLL]	X	3.0		
2010	SDE	Insert Product	ASTER expedited data product with signal file [DLL]	X	3.0		
2340	SDE	Subsetting	L70R Mirror Scan Correction data subsetting [DLL]	X	3.0		
2350	SDE	Subsetting	L70R Calibration data subsetting [DLL] - assuming time can come from metadata	X	3.0		
2290	SDSRV	Add new ESDTs	ESDT versioning - create ESDTs with same short name but different version ids	X	3.0		short name and version id uniquely identify an ESDT
2310	SDSRV	Add new ESDTs	Export collection level metadata to DDICT	X	3.0		
2320	SDSRV	Add new ESDTs	Convert ACFG file to a database	X	3.0	U	In Drop 3 to resolve a high severity NCR.
2410	SDSRV	B.0 Data Model Upgrade	Post August Demo Upgrades	X	3.0		
2391	SDSRV	Data Format Conversion	Landsat-7 distribution format (DFCB)	X	3.0		
2540	SDSRV	Fault Tolerance	Add rebinding to Client Libs	X	3.0		
2560	SDSRV	Fault Tolerance	Partial Async Client Libs/Servers	X	3.0		
2570	SDSRV	Fault Tolerance	Add Request Ids	X	3.0		
1990	SDSRV	Insert Product	QA product	X	3.0		
2043	SDSRV	Insert Product	NEW Additional Validation of ECS keywords to enforce owner-member relationships	X	3.0		
2050	SDSRV	Insert Product	MCF handling of PSAs and Propagation of valids to DDICT	X	3.0		Design issue: only defined type for PSA in Toolkit is string; data model supports all data types
2450	SDSRV	Internal	ServerUR	X	3.0		
2531	SDSRV	Internal	Concurrent request processing	X	3.0		
2200	SDSRV	Search / Inspect	Landsat MOC cloud cover determination support - database script	X	3.0		Assumes ftp to MOC is not a security violation; assumes UNIX error logging
2341	SDSRV	Subsetting	L70R Mirror Scan Correction data subsetting	X	3.0		
2351	SDSRV	Subsetting	L70R Calibration data subsetting - assuming time can come from metadata	X	3.0		
2381	SDSRV	Subsetting	Asynchronous RPC HDF server	I	3.0		
2770	Storage Management	Internal	Recovery: rebinding, request id, more detailed error messages	X	3.0		
2780	Storage Management	Internal	Multiple requests per stacker -- threading problem	X	3.0		
3595	System Mgmt	Accountability	Fault Recovery - Rebinding	X	3.0		for User Registration, Order Tracking, CLUT
3760	System Mgmt	ASTER Email Gateway	Generation of standard headers for all ASTER email messages	X	3.0		
3770	System Mgmt	ASTER Email Gateway	DAR user profile data	X	3.0		
3500	System Mgmt	Fault Management	COTS fault/error monitoring	X	3.0		Tivoli log file monitoring of COTS

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3510	System Mgmt	Fault Management	Application level fault/error monitoring	X	3.0		Subagents sending fault information to HPOV
3820	System Mgmt	Internal	User profile database changes for DAR user administration	X	3.0		GUI Change in ACCTB; schema changes, and ability to generate DAR user profile msg. to GDS when database is updated.
3850	System Mgmt	Internal	Sybase failover for User Profile Server	X	3.0		
3870	System Mgmt	Internal	Handling of DCE/ODCE faults	X	3.0		
3881	System Mgmt	Internal	Recovery from faults identified in failure/recovery walkthrough - Mode Management	X	3.0		
3890	System Mgmt	Internal	Subagent - test SGI port	X	3.0		
3420	System Mgmt	Network Management	HP Openview Network Node Manager (NNM)	X	3.0		Configure HPOV to manage the network (routers, bridges, hosts, status & events, object alerts)
3810	System Mgmt	SMC	CCR/NCR consolidation using DDTs	X	3.0		Maintain system-wide oriented ECS NCRs/CCRS at the SMC - related to 3560
3460	System Mgmt	System Administration	Tivoli Management Environment (TME)	X	3.0		Tivoli system administration and monitoring (log files and hosts)
3490	System Mgmt	System Administration	System backup and restore	X	3.0		Networker COTS product install and usage
3000	Data Distribution	Internal	Improve diagnostics (ERC rework)	X	3.5		none
1560	Data Management	Data Dictionary	Maintenance Tool	X	3.5	U	V0 validates export, collection to InfoMgr mapping, and attribute mapping delivered in Drop 3.
1930	Data Management	Internal	Improve diagnostics (ERC rework)	X	3.5	U	
4140	Infrastructure	Communication Gateways	Landsat-7 - ERC additions	X	3.5		
4150	Infrastructure	Communication Gateways	Landsat-7 - Robustness	X	3.5		
4170	Infrastructure	Communication Gateways	ASTER - Authorization	X	3.5		
4210	Infrastructure	Communication Gateways	ASTER - ERC additions	X	3.5		
4290	Infrastructure	Communication Gateways	Email - ERC additions	X	3.5		
4020	Infrastructure	Distributed Computing Services	FTP w/ notification (for STMGT Pull Monitor)	X	3.5		
4040	Infrastructure	Distributed Computing Services	Multi-cell DCE configuration	X	3.5	U	
4050	Infrastructure	Distributed Computing Services	DCE Cell Management (use of DCE CellManager)	X	3.5		COTS integration
4610	Infrastructure	Internal	Improve Diagnostics (ERC rework)	X	3.5		
4622	Infrastructure	Internal	Multi-homed Machines	X	3.5		
0140	Ingest	Data Type Preprocessing	Other AM-1 expedited data types	X	3.5		
0150	Ingest	Data Type Preprocessing	AM-1 ephemeris data type	X	3.5		

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0400	Ingest	Internal	Improve Diagnostics (ERC rework)	X	3.5		
3080	Interoperability	Internal	Improve diagnostics (ERC rework) - HTML	X	3.5		
0960	Planning	Internal	Improve diagnostics (ERC rework)	X	3.5		
0550	Planning	Production Planning Workbench	Production rule: Tiling	I	3.5		Data selection based on tiled globe reference (MODIS L2G, L3)
0571	Planning	Production Planning Workbench	Production rule: Metadata-based query for dynamic input granules	I	3.5	U	Input granule selection based on metadata - handles case when expected granules have not yet arrived (common L2, L3 rule)
0580	Planning	Production Planning Workbench	Production rule: Minimum number of granules	I	3.5		Activate only if we have the minimum # of granules (MODIS L3, MISR L2)
0590	Planning	Production Planning Workbench	Production rule: Optional DPRs	I	3.5		Production result based DPR selection (MISR L2)
0600	Planning	Production Planning Workbench	Production rule: Most recent granule	I	3.5	U	Ancillary data selection - most recent granule in the spatial/temporal interval (MODIS L?)
1340	Processing	Internal	Disk space garbage collection	X	3.5		
1400	Processing	Internal	Combine Data Server interfaces into class and implement retries for all cases		3.5	U	
1410	Processing	Internal	Make error logging usable for diagnostic capability and/or make consistent with PF	X	3.5		
1440	Processing	Internal	AutoSys Startup/Shutdown/Monitoring by MSS	X	3.5		
1470	Processing	Internal	Improve diagnostics (ERC rework)	X	3.5		
1060	Processing	Job Management	Add max cpu time to job definition	X	3.5	U	
1061	Processing	Job Management	Add additional services - DeleteDPRJob	X	3.5		DeleteDPRJob: Need a stronger service than CancelDPRJob that will delete a job in any state.
1230	Processing	QA Monitor	QA Monitor port to SGI		3.5	U	
2140	SDSRV	Acquire Product	Order tracking (Request level) - MSS status handoff	X	3.5		update the MSS order tracking database
2541	SDSRV	Fault Tolerance	Rebinding for HDF-EOS server	X	3.5		
2040	SDSRV	Insert Product	Validate Metadata - time validation	X	3.5		
2590	SDSRV	Internal	Improve diagnostics (ERC rework)	X	3.5		
2361	SDSRV	Subsetting	Update HDF file metadata	X	3.5		
2800	Storage Management	Internal	Improve diagnostics (ERC rework) - Error message cleanup only	X	3.5		no ERC rework, just improving STMGMT internal diagnostic messages
3690	System Mgmt	Event Logging	Management event recording to local logs	X	3.5	U	Error and event logging for Accountability servers ( I.e., User Registration, Order Tracking, CLT)
3882	System Mgmt	Internal	Recovery from faults identified in failure/recovery walkthrough - MDA Backup/Restore	X	3.5		
3940	System Mgmt	Internal	Improve diagnostics (ERC rework)	X	3.5		Add stored procedure for each new event identified by CIs
4700	All	Internal	Implement Error Recovery Policy	X	4.0		Standard error message codes
3100	Client	Home Page (with Login)		X	4.0		
3350	Client	SCF QA Metadata Update Tool	Web server based application to process results set and update QA flags	I	4.0		
3360	Client	SCF QA Metadata Update Tool	DAAC operator approval GUI for SCF QA metadata updates	I	4.0		

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2980	Data Distribution	Internal	Don't starve PDPS (ensure PDPS acquires and inserts receive high priority)	X	4.0		Expect capability to be delivered in Drop 3 but will likely have liens.
2991	Data Distribution	Internal	Fault Recovery: Sybase Conversion	X	4.0		Provide capability for DDIST server to checkpoint state changes of requests being processed for purpose of failure/recovery
2992	Data Distribution	Internal	Fault Recovery: External Interfaces	X	4.0		Provide capability for DDIST to resynchronize the state of requests with SDSRV and STMGT when these Cis go down and come back up
1530	Data Management	Data Dictionary	Data Dictionary support for ECS-wide mode	X	4.0	U	Includes replication
1551	Data Management	Data Dictionary	Update, Delete of Data Dictionary contents		4.0		Delete Collection and Update Collection delivered in Drop 4 (not launch critical).
1561	Data Management	Data Dictionary	Maintenance Tool		4.0		Import V0 and ASTER valids, collection editor
4200	Infrastructure	Communication Gateways	ASTER - Robustness	X	4.0		
4212	Infrastructure	Communication Gateways	ASTER - SRF Timeout	X	4.0		was Drop 2
4300	Infrastructure	Communication Gateways	Email - Robustness	X	4.0	U	
4011	Infrastructure	Distributed Computing Services	Copy Services with compression		4.0	U	
4051	Infrastructure	Distributed Computing Services	DCE Admin Scripts/Tools	I	4.0		
4080	Infrastructure	Distributed Computing Services	Use of DFS for V2.0		4.0	U	Drop 4?
4620	Infrastructure	Internal	Message passing name space rework	X	4.0	D	
0160	Ingest	Data Type Preprocessing	Ancillary data types (NOAA)	X	4.0		Capability will exist by Drop 3 but uncertainty due to changing NOAA products
0180	Ingest	Data Type Preprocessing	FOS data types - historical data	X	4.0		May accelerate pending determination of interface characteristics
0190	Ingest	Data Type Preprocessing	FOS data types - Detailed Activity Schedule (for MISR, ASTER); 7 day predicted orbit	X	4.0		May accelerate pending determination of interface characteristics
0200	Ingest	Data Type Preprocessing	Sage III data types	I	4.0		
0380	Ingest	Internal	Robustness	X	4.0		CUT complete 4/30/98; VATC turnover 6/15/98. Need to prioritize launch critical subset of this.
0391	Ingest	Internal	Recovery: warm restart	X	4.0		
0250	Ingest	Network Ingest Requests	Ancillary Data (polling)	X	4.0		Capability will exist by Drop 3 but uncertainty due to changing NOAA products
0270	Ingest	Network Ingest Requests	FOS (polling)	X	4.0		
0280	Ingest	Network Ingest Requests	DAS (TBD)	X	4.0		
0290	Ingest	Network Ingest Requests	ASTER DEM (interactive)	X	4.0		CUT complete 3/1/98; VATC turnover 4/15/98. Uncertainty whether existing interfaces can be used without modification.

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3030	Interoperability	Advertising Service	Advertising database replication	X	4.0		support for ECS-wide mode
0560	Planning	Production Planning Workbench	Production rule: Data day	I	4.0		Selecting input data based on Data Day (MODIS Oceans L2?, L3)
0500	Planning	Production Request Editor	Ad Hoc Reprocessing Support	X	4.0		
1330	Processing	Internal	Support for Ad Hoc Reprocessing	X	4.0		Add new interfaces for rebinding to all servers. Add request ID to all server interfaces. Add request ID to all client code calls. Get and store request Ids; tie to checkpointing. Identify potential areas of performance improvement. Design PDPS side of async. calls (e.g., developing callbacks, policy for coordinating returns of async calls) Investigate multithreading.
1401	Processing	Internal	Implement Fault Recovery Recommendations for DSS interface	X	4.0		
1402	Processing	Internal	Use of asynchronous requests to SDSRV	X	4.0		
1460	Processing	Internal	Improve PRONG scheduling algorithm - better cpu allocation, etc	X	4.0		
1050	Processing	Job Management	Ground Event Jobs	X	4.0		ChangePriority: production monitor must have ability to change priority of DPR.
1062	Processing	Job Management	Add additional services -ChangePriority		4.0		
2550	SDSRV	Fault Tolerance	Partial Request Persistence	X	4.0		in process of breaking this out separately - to operator notification and notification of userpull Expect capability to be delivered in Drop 3 but will likely have liens.
1980	SDSRV	Insert Product	Integrated Browse product	I	4.0		
2585	SDSRV	Internal	Warm Start/Restart	X	4.0		
2430	SDSRV	Operator GUI	Display SDSRV requests - upgrade and integrate	X	4		
2584	SDSRV	Recovery	Cold Start/Restart Servers	X	4.0		
2220	SDSRV	Search / Inspect	Busy vs Truncate (needed for JIT)	I	4.0		
2640	Storage Management	Basic Services	Basic cache management (no fixing products in cache, no frequency based caching)	X	4.0		
2740	Storage Management	Internal	Don't starve PDPS (ensure PDPS acquires and inserts and Ingest inserts receive high priority)	X	4.0		
2760	Storage Management	Internal	Archive backup and recovery	X	4.0		
2771	Storage Management	Internal	Recovery: warm restart	X	4.0		
3550	System Mgmt	Configuration Management	Inventory, logistics, baseline mgmt, maintenance using XRP II	X	4.0		Inventory, logistics, baseline, maintenance management
3700	System Mgmt	Event Logging	Local log consolidation into MDA database	X	4		Continuous activity from Drop 1
3710	System Mgmt	Event Logging	MDA error and event log browser	X	4		Capability to browse MSS log files.
3720	System Mgmt	Event Logging	Archive of local logs and MDA database	X	4.0		Store log files and MDA database into DSS archive - completed in RCC (MDA)
3723	System Mgmt	Event Logging	Fault Recovery - Rebinding	X	4.0		for MDA
3860	System Mgmt	Internal	Sybase failover for Order Tracking Server	X	4.0		
3880	System Mgmt	Internal	Recovery from faults identified in failure/recovery walkthrough - MDA Failover	X	4.0	U	
3883	System Mgmt	Internal	Recovery from faults identified in failure/recovery walkthrough - Subagent	X	4.0		
3300	Client	Additional JEST Capabilities	User Subscriptions		5.0	U	

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3310	Client	Additional JEST Capabilities	User Subsetting		5.0	U	
3320	Client	Additional JEST Capabilities	DAR Query/Status		5.0	U	Web Based
3330	Client	Additional JEST Capabilities	Integrated browse		5.0	U	
3331	Client	Additional JEST Capabilities	View MeasuredParameter attributes		5.0	U	Display of QA values associated with each parameter of a granule. Does this require SDSRV, LIM, DIM support?
3170	Client	JEST	Project (navigate to all nodes, and hence, folders within a session)	I	5.0	U	
3180	Client	JEST	Inventory search for science granules (keywords, spatial, temporal, dependent valids (keywords only) and product-specific attributes)	I	5.0	U	
3190	Client	JEST	Search Status	I	5.0	U	
3200	Client	JEST	Results Management, including chunking, sorting, and acquire services	I	5.0	U	
3210	Client	JEST	Product Order (metadata, media, services (DPR), integrated profile, dialogs (confirmation, rejection, acknowledgment))	I	5.0	U	
3220	Client	JEST	Order Status (tracking)	I	5.0	U	
3230	Client	JEST	DPR Workaround for ASTER (pop-up dialog with products)	I	5.0	U	
3240	Client	JEST	Basic Context-sensitive Help (tied to tabbed folder focus only)	I	5.0	U	
3250	Client	JEST Middleware	Model (session management)	I	5.0	U	
3260	Client	JEST Middleware	JESS (session management, search/results server, order servlet, DPR workaround servlet, subscription servlet)	I	5.0	U	
3270	Client	JEST Middleware	CGI (advertising server search)	I	5.0	U	Can this be deleted? Taken over by MOJO ADSRV proxy
3280	Client	JEST Middleware	L-7 scene price estimate workaround (read it from a file)	I	5.0	U	
3290	Client	JEST Middleware	SCF QA metadata support - provide access to result sets	I	5.0	U	
3340	Client	SCF QA Metadata Update Tool	Search/create result set of granules to be QA'ed (using JEST)	I	5.0	U	
2860	Data Distribution	Basic Services	D3 tape Requests		5.0	U	
2994	Data Distribution	Internal	Fault Recovery: Recovery Logic		5.0	U	Recover state of DDIST queues when server is brought back up. Determine from the type of fault encountered what action to take
2940	Data Distribution	Operator GUI	Select multiple distribution requests		5.0	U	
2941	Data Distribution	Operator GUI	DDIST GUI Cleanup		5.0	U	not on Steve's original chart, but dates work for Drop 3
1540	Data Management	Data Dictionary	Search service	X	5.0		
1562	Data Management	Data Dictionary	Maintenance Tool		5.0		attribute editor, delete/create relationships, modify entries

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1600	Data Management	Local Information Management	Basic site-specific search		5.0	U	Searches across SDSRVs and ECS-V0 gateways, not to include any "join" type queries.
1620	Data Management	Local Information Management	Browse requests		5.0	U	The ability to request the browse related to a granule UR, whether a search has been performed within the same session or not.
1680	Data Management	Version 0 Gateway	Integrated Browse (V0-ECS)		5.0	U	Be able to receive an integrated browse request, send it to the SDSRV, and return the results to the client.
4280	Infrastructure	Communication Gateways	Email - Order tracking (Request level) for Acquire		5.0	U	
3971	Infrastructure	Internal	Access Control Lists		5.0	N	
4440	Infrastructure	MOJO	Main framework with session management and socket server	I	5.0		
4450	Infrastructure	MOJO	Login proxy	I	5.0		
4460	Infrastructure	MOJO	Logout proxy	I	5.0		
4470	Infrastructure	MOJO	DSS proxies: Search and Acquire	I	5.0		Search Merge is 12/23/97
4480	Infrastructure	MOJO	MSS proxies: Profile, Order tracking and Order status	I	5.0		Order Tracking merge is 2/13/98
4490	Infrastructure	MOJO	FtpClient proxy for DPR workaround	I	5.0		
4510	Infrastructure	MOJO	ADSRV proxy (half functionalities)	I	5.0		
4520	Infrastructure	MOJO	DDICT proxy (half functionalities)	I	5.0		
4531	Infrastructure	MOJO	Hello proxy	I	5.0		
4540	Infrastructure	MOJO	Workload throttling		5.0	U	Capability to enable/disable guest user logins and configure the number of concurrent registered users. Note Guest User throttling may need to be done in JESS.
4311	Infrastructure	Subscription Services	Support Event Updates/Deletes		5.0	U	
4340	Infrastructure	Subscription Services	Additional qualified subscription support (e.g., spatial)		5.0	U	
4350	Infrastructure	Subscription Services	Order tracking (Request level)		5.0	U	
4370	Infrastructure	Subscription Services	Periodic event support		5.0	U	
4390	Infrastructure	Subscription Services	Encryption of FTP password		5.0	XU	
4410	Infrastructure	Subscription Services	DDICT service interface modification		5.0	XU	
0170	Ingest	Data Type Preprocessing	Orbit/Attitude data from FDD	X	5.0		CUT complete 2/7/98; VATC turnover 3/21/98; Attitude data is launch critical
0210	Ingest	Data Type Preprocessing	DAS data types	X	5.0		CUT complete 1/31/98; VATC turnover 3/15/98. Large number of ESDTs (40). Uncertainty whether existing interfaces can be used without modification
0310	Ingest	Media Ingest Requests	EDC Produced 100M DEM (D3)		5.0	U	CUT complete 3/1/98; VATC turnover 4/15/98
0330	Ingest	Operator GUI	Add new data types		5.0	U	CUT complete 3/4/98; VATC turnover 4/18/98; GUI interface to Sybase tables.
0340	Ingest	Operator GUI	Media check-in		5.0	U	CUT complete 4/15/98; VATC turnover 6/1/98; Electronic list of tapes to be ingested.
0860	Planning	Internal	Environment variables in config files		5.0	U	
0900	Planning	Internal	Production Planning read from DB (refresh button)		5.0	U	

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0920	Planning	Internal	Recovery of lost archive file using production history data		5.0	U	
0940	Planning	Internal	Produce 7 day plan in 2 hours		5.0	U	
0941	Planning	Internal	Produce 30 day plan in 2 hours		5.0	U	
0950	Planning	Internal	Convert to shared libraries		5.0	U	
0620	Planning	Production Planning Workbench	Production rule: Alternates based on minimum number of granules available	I	5.0	U	What to do if we fail minimum # of granules (MODIS L3)
0630	Planning	Production Planning Workbench	Production rule: Start_of_16days	I	5.0	U	MODIS definition of a 16 day cycle (MODIS L3)
0640	Planning	Production Planning Workbench	Production rule: "Smart" Start_of_year	I	5.0	U	MODIS definition of the start of year (MODIS L3)
0660	Planning	Production Planning Workbench	Production rule: Tile clustering	I	5.0	U	Scheduling of spatially connected tiles - performance improvement (MODIS L3)
0661	Planning	Production Planning Workbench	Production rule: Zonal tiling	I	5.0	U	Tiles based on latitude zones (MODIS L3)
0710	Planning	Production Planning Workbench	Upgrade algorithm to handle strategies		5.0	U	
0750	Planning	Production Planning Workbench	Report Generation and Insert		5.0	U	
0770	Planning	Production Planning Workbench	Testbed Merge: Display extended, sortable list of planned DPRs from WB		5.0	U	
0780	Planning	Production Planning Workbench	Testbed Merge: Schedule and display past events with different bit patterns		5.0	U	
0790	Planning	Production Planning Workbench	Testbed Merge: "Snap to" area of Timeline from WB		5.0	U	
0800	Planning	Production Planning Workbench	Testbed Merge: Show predicted data arrival times		5.0	U	
0820	Planning	Production Planning Workbench	Send new plan to timeline		5.0	U	
0480	Planning	Production Request Editor	ASTER On Demand Workaround (JIT)	I	5.0		
1310	Processing	DPREP	FDD orbit/attitude data processing	X	5.0		DPREP for FDD orbit processing needed for launch
1420	Processing	Internal	Incompatibility between AutoSys error logging and MSS		5.0	U	
1150	Processing	PGE Execution Management	Production History Enhancements (metadata)	?	5.0	U	

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1170	Processing	PGE Execution Management	PGE Exit codes		5.0	U	
2080	SDSRV	Acquire Product	Integrated Browse product		5.0	U	
2151	SDSRV	Acquire Product	ACL checking on Acquire		5.0	N	
2530	SDSRV	Internal	Recovery of lost files in archive		5.0	U	
2581	SDSRV	Recovery	Complete Async Client Lib/Servers		5.0	U	
2582	SDSRV	Recovery	Complete Persistent Requests		5.0	U	
2583	SDSRV	Recovery	Make Client Calls Async		5.0	U	
2360	SDSRV	Subsetting	MODIS L1B by parameter or by band [DLL]		5.0	U	
2370	SDSRV	Subsetting	User Subsetting Client Interface to Support		5.0	U	
2380	SDSRV	Subsetting	Core services to support conformant subsetting (point, grid, swath)	I	5.0		
2650	Storage Management	Basic Services	Configuration parameter reporting		5.0	U	Move configuration parameters (e.g., cache thresholds, staging disk root pathname) from a file to a database and provide a GUI to enable ops staff to more easily reconfigure things.
2790	Storage Management	Internal	Utility to identify lost files on damaged tape and recover undamaged files - non integrated, stand alone capability	X	5.0		
2690	Storage Management	Operator GUI	Operator Notification		5.0	U	
3592	System Mgmt	Accountability	Single DCE cell per DAAC		5.0	U	Unique user id across DAACs
3622	System Mgmt	Accountability	Cross DAAC Order Tracking		5.0	U	
3721	System Mgmt	Event Logging	HPOV & HTTP Log Processing Design		5.0	U	Enable MDA to process such log files
3722	System Mgmt	Event Logging	FTP/KFTP of Log Files		5.0	U	FTP log files from various hosts. Don't need KFTP at launch.
3913	System Mgmt	Internal	Mode Management - Allow for cross machine startup/shutdown.		5.0	U	Currently can startup/shutdown only from within a single host.
3570	System Mgmt	Performance Management	Application performance metric monitoring		5.0	U	Use ECS MIB to monitor application performance metrics
3740	System Mgmt	Report Generation Service	Standard administrative reports ( 20)		5.0	U	
3750	System Mgmt	Report Generation Service	COTS Report Writer capability using Sybase IQ		5.0	U	
3790	System Mgmt	SMC	Trouble ticket consolidation using Remedy		5.0	U	
3800	System Mgmt	SMC	Baseline consolidation using XRP II		5.0	U	Maintain consolidate records of sites baseline records; maintain copy of sites ECS software at the SMC.
3480	System Mgmt	System Administration	Database administration		5.0	U	ESSM tool configuration
3400	Client	Internal	Upgraded data versioning support		P	XU	
1740	Data Management	ASTER GDS Gateway	Directory Search (GDS-ECS)		P	U	The ability to receive a directory request from ASTER GDS and send it to the Advertising Service, returning the results to GDS.
1750	Data Management	ASTER GDS Gateway	Inventory Search (GDS-ECS)		P	U	The ability to receive an inventory search, process it, and return a result including the packaging information.
1760	Data Management	ASTER GDS Gateway	Product Request (GDS-ECS)		P	U	The ability to receive a product request and submit an acquire regardless of whether a search was performed first.

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(P is Post Launch Delivery)

ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
1770	Data Management	ASTER GDS Gateway	Integrated Browse (GDS-ECS)		P	U	The ability to receive a browse request and get results regardless of whether a search was performed first.
1780	Data Management	ASTER GDS Gateway	Price Estimates (GDS-ECS)		P	U	The ability to receive a price estimate request, check the dataset id, if it is an L-7 product return a fixed price from a configuration file.
1790	Data Management	ASTER GDS Gateway	Product Request Status (GDS-ECS)		P	U	The ability to receive a product request status (request) and return the status of an order.
1800	Data Management	ASTER GDS Gateway	Product Status Update (GDS-ECS)		P	U	The ability to receive a product status update request and update the status of an order in MSS.
1810	Data Management	ASTER GDS Gateway	Inventory Search (ECS-GDS)		P	U	The ability to receive an inventory search, process it, and return a result.
1820	Data Management	ASTER GDS Gateway	Product Request (ECS-GDS)		P	U	The ability to receive a product request and submit an acquire regardless of whether a search was performed first.
1830	Data Management	ASTER GDS Gateway	Integrated Browse (ECS-GDS)		P	U	The ability to receive a browse request and get results regardless of whether a search was performed first.
1840	Data Management	ASTER GDS Gateway	Price Estimates (ECS-GDS)		P	U	The ability to receive a price estimate request, check the dataset id, if it is an L-7 product return a fixed price from a configuration file.
1850	Data Management	ASTER GDS Gateway	Product Status Request (ECS-GDS)		P	U	The ability to receive a product request status (request) and return the status of an order.
1860	Data Management	ASTER GDS Gateway	Product Status Update (ECS-GDS)		P	U	The ability to receive a product status update request and update the status of an order in MSS.
1570	Data Management	Distributed Information Management	Basic multi-site search		P	U	Cross-site searches related to unions of collections. This does not do coincident search or any other "join" type queries
1580	Data Management	Distributed Information Management	Acquire including order tracking		P	U	The ability to order the data, given a UR, whether a search has been performed within the same session or not.
1590	Data Management	Distributed Information Management	Browse requests		P	U	The ability to request the browse related to a granule UR, whether a search has been performed within the same session or not.
1940	Data Management	Internal	Upgraded data versioning support		P	U	
1690	Data Management	Version 0 Gateway	Connection to Advertising for Service Information		P	U	Need to retrieve the package information for inventory results from the Advertising Service rather than the file that is currently used.
1700	Data Management	Version 0 Gateway	Inventory Search (ECS-V0)		P	U	Be able to receive a request from the ECS client, DIM, or LIM to search V0 holdings.
1720	Data Management	Version 0 Gateway	Integrated Browse (ECS-V0)		P	U	The ability to request the browse related to a granule UR, whether a search has been performed within the same session or not.
1730	Data Management	Version 0 Gateway	Workload throttling		P	U	Capability to enable/disable guest user logins and configure the number of concurrent registered users
4240	Infrastructure	Communication Gateways	Email - IPC notification from Subscription Server		P	U	
4070	Infrastructure	Distributed Computing Services	Service Broker		P	U	

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ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
4360	Infrastructure	Subscription Services	Upgraded data versioning support		P	U	
4400	Infrastructure	Subscription Services	Notification bundling		P	U	
4420	Infrastructure	Subscription Services	ASTER DPR (integrated DAR/Acquire)		P	U	provide DPR action in SBSRV
4430	Infrastructure	Subscription Services	Search action support		P	U	
1520	SDP Toolkit	Release B Toolkit	Make MET tools and ODL parser separable from toolkit		P	U	New scope - awaiting CCR. Will be prioritized lower than launch critical capabilities.
2280	SDSRV	Add new ESDTs	Export of collection metadata to GCMD		P	U	
2300	SDSRV	Add new ESDTs	Upgraded data versioning support		P		assumes ftp not DDIST/SBSRV for export
2240	SDSRV	Delete Product	System wide handling of "nulls" and equivalents for insertion query and update		P	U	
2241	SDSRV	Delete Product	Timed based delete of L0 products		P	U	
2250	SDSRV	Delete Product	Timed based delete of expedited data products		P	U	
2460	SDSRV	Internal	Handle variations on search areas and product-specific spatial representations		P	U	includes search on G-ring vs. minimum bounding rectangle
2470	SDSRV	Internal	Handle large spatial search areas		P	U	
2500	SDSRV	Internal	Don't starve PDPS (ensure PDPS acquires and inserts and Ingest inserts receive high priority)		P	U	
2511	SDSRV	Internal	SDSRV to allocate/manage connection to multiple Spatial Query Servers (SQS).		P	U	
2520	SDSRV	Internal	Error handling and GUI for processing L70R F1 or F2 without its mate		P	U	
2190	SDSRV	Search / Inspect	Results sets chunking		P		
3624	System Mgmt	Accountability	Granule Level Order Tracking		P	U	Can track at request level now.
3930	System Mgmt	Internal	Investigate/upgrade to new COTS versions		P	U	
3141	Client	BOSOT	Port V 7.0.1				Contains bug fixes - need to decide if we want to do this
3370	Client	Internal	Concurrent request processing				
3380	Client	Internal	Robustness			XD	nothing to make robust
3390	Client	Internal	Improve diagnostics (ERC rework)			XD	no ERC to rework
4211	Infrastructure	Communication Gateways	ASTER - PF Debug				
4100	Infrastructure	Distributed Computing Services	Rework client proxy management in servers (all CIs)				Done in both Drops 3 and 4
4052	Infrastructure	Distributed Computing Services	NFS Design Enhancement				
4090	Infrastructure	Distributed Computing Services	PF Config File cleanup				
4110	Infrastructure	Distributed Computing Services	PF Config Registry				
4560	Infrastructure	Internal	Port to latest version of HP Operating System				
4600	Infrastructure	Internal	Subscription Server database replication				

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(P is Post Launch Delivery)

ID	Category	Subcategory	Capability	LC	Drop	Rev	Comment
4530	Infrastructure	MOJO	DSS proxy: Browse	I			
4500	Infrastructure	MOJO	Subscription proxy				
0040	Ingest	Basic Services	Suspend, resume request				
0050	Ingest	Basic Services	Cancel, Change request priority				CUT complete 3/15/98; VATC turnover 5/1/98
0410	Ingest	Internal	Upgraded data versioning support				CUT complete 5/31/98; VATC turnover 7/15/98
1190	Processing	Data Management	Data Server proxy - subsetting				
2090	SDSRV	Acquire Product	QA product				
2041	SDSRV	Internal	Attribute Default into database				
2042	SDSRV	Internal	DsDbClean* scripts to handle VersionID and subType				
2451	SDSRV	Internal	Standardize DB Error handling				
2501	SDSRV	Internal	DsDbInterface to handle multiple SQL commands				
2591	SDSRV	Internal	Joinable pairs into database				
2592	SDSRV	Internal	Referential Integrity into DB System tables				
2440	SDSRV	Operator GUI	Upgrade ESDT GUI for ACFG in database				
2191	SDSRV	Search / Inspect	Port HDF Server to SGI				
3623	System Mgmt	Accountability	Common Look-Up Table Server				Standardize DAAC names, study area, order status etc. Used by MSS, CLS & DSS.
3593	System Mgmt	Accountability	Create SmartStream account				Create user account in SmartStream
3594	System Mgmt	Accountability	Group user administration				Account balance for grou user
3540	System Mgmt	Configuration Management	Software and baseline management using ClearCase				
3900	System Mgmt	Internal	Subagent - change location of Active Mode list				
3911	System Mgmt	Internal	Subagent-Single Executable Running In Mode				Allow only one executable running under a mode to prevent shutdown problems
3912	System Mgmt	Internal	Subagent-Alternate Process ID				Modify Subagent to allow for process to run under different user ID than the subagent's
3920	System Mgmt	Internal	Tivoli event processing rule configuration				

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# Appendix B. Features Mapped to Capabilities

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This table represents version 1.2 of the Features list for Release 2.0.

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
<b>1. External Interfaces</b>					
1.1	Show that the system can support ASTER DAR submission, query, and status interfaces to ASTER GDS	X	3160, 4170, 4190, 4200, 4210, 4211, 4212	DAR Submit Tool available in Drop 4. DAR Comm Gateway available in Drop 4. Improved DAR Comm Gateway fault recovery in Drop 4. Query status via JEST in Drop 5 (not Launch Critical)	4
1.2	Show that the system can support transfer of DAR user profile data to ASTER GDS	X	3770, 3820	Available in Drop 3	3
1.3	Show support of 2-way e-mail communication with ASTER GDS	X	3760, 3770, 4260, 4270, 4280, 4290, 4300, 4301	Basic capability in Drop 3, Fault recovery Drop 3.5 & 4, Order Tracking Drop 5	3
1.4	Show that the system can support the EDOS PDS interface protocol.	X	0240, 0060	Available in Drop 1	1
1.5	Show that the system can support the EDOS EDS interface protocol.	X	0240, 0060	Available in Drop 1	1
1.6	Show that the system can support the LPS interface protocol	X	0220, 4140, 4150, 4151, 0060	Available in Drop 1. Improved gateway error messages in Drop 3. Improved gateway fault recovery in Drop 3.5.	1
1.7	Show that the system can support the IAS interface protocols	X	0230, 0060	Available in Drop 1	1
1.8	Show that the system can support the Landsat 7 MOC interface protocols for cloud cover data	X	2200, 2830	Available in Drop 3.5	3.5
1.9	Show support of L7 billing and accounting workaround.	X	1630, 1655, 1710, 2890	Available in Drop 3	3
1.10	Show that the system can support expedited data access to AM-1 data types.	X	0130, 0140, 2010, 2040, 2420, 2830, 2840, 4320, 2000, 2110, 2120, 2250, 4240, 4250, 4260, 4270, 4280, 4290, 4300	Access to simplified expedited data products (manual delete) available in Drop 1. ASTER expedited data products with signal files available in Drop 3. Other AM-1 expedited data types in Drop 3.5. Automated delete of expedited data is Post Launch.	3
1.11	Show the system can support the FDD interface for Attitude data	X	0060, 0170	Available in Drop 5	5
1.12	Show the system can support the FDD interface for Orbit Data		0060, 0170	Available in Drop 5	5
1.13	Show the system can support the Sage III data interface			Planned for Drop 5.	5
1.14	Show the system can support the Sage III MOC interface		0200	Available in Drop 4	4
1.15	Show the system can support the DAO interface	X	0210, 0280	Available in Drop 5	5
1.16	Show the system can support the NOAA interface for ancillary data (CEMSCS).	X	0160, 0250	Available in Drop 4	4
1.17	Show the system can support GDAAC data interfaces	X	0160, 0250	Available in Drop 4	4
1.18	Show the system can support NDC data ingest via media	X	0340	Available in Drop 5 - tape format still undefined	5
1.19	Show the system can support V0 interoperability (V0 to ECS)	X	1640, 1650, 1660, 1670, 1680	One way interoperability available in Drop 1.0. Gateway robustness etc. Drop 3 & 3.5. Integrated Browse in Drop 5.0	3.5
1.20	Show the system can support SCF interfaces	X	4550, 0260, 1210, 2160, 3340, 3350, 3360, 1160, 1960, 2060, 2630, 2820, 2930, 2020, 4320, 4380, 2060, 2630, 2820, 2840	Remote Interactive Session Drop 3; Electronic DAP Handling Drop 1; QA Metadata Update via DAAC in Drop 1, via SCF in Drop 5; Failed PGE Handling Drop 1; SCF Ancillary Data Drop 1; Data Access for QA Drop 3	3
1.21	Show the system can receive and send external ops management data			<b>NO CAP.</b> EBNet & NSI TT and management reports exchange (NLC); Aster GDS TT exchange and send DAR User Profiles (==Feature 1.2) (LC);	TBD
<b>2. Data Ingest</b>					

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
2.1	Demonstrate ingest of AM-1 Level 0 data (from EDOS & DAACs)	X	0010, 0020, 0030, 0040, 0050, 0060, 0240, 2550, 2620, 100, 110, 130, 140, 320, 1960, 2000, 2010, 2040, 2050	AM-1 data types and ASTER expedited data type in Drop 3. Other expedited data types in Drop 3.5. Metadata validation enhancements in Drop 3.5.	3
2.2	Show the system can ingest ASTER L1A and L1B data from D3 tape.	X	0010, 0020, 0030, 0040, 0050, 0060, 0340, 2550, 2620, 120, 300, 320, 1960, 2660, 2040, 2050	Available in Drop 3. Metadata validation enhancements in Drop 3.5.	3
2.3	Show the system can ingest Landsat-7 L0R data	X	0010, 0020, 0030, 0040, 0050, 0060, 0220, 2550, 2620, 80, 320, 1960, 1970, 2040, 2050	Available in Drop 1. Metadata validation enhancements in Drop 3.5.	1
2.4	Show the system can ingest IAS calibration parameter files	X	0010, 0020, 0030, 0040, 0050, 0060, 0230, 2550, 90, 320, 1960, 2040, 2050	Available in Drop 1. Metadata validation enhancements in Drop 3.5.	1
2.5	Show the system can ingest NOAA data	X	0010, 0020, 0030, 0040, 0050, 0060, 0250, 2550, 2620 160, 320, 2040, 2050	NOAA data types phased across Drops 3, 3.5, and 4	3
2.6	Show the system can ingest AM-1 ephemeris data	X	0010, 0020, 0030, 0040, 0050, 0060, 2620, 150, 1300, 1960, 2040, 2050	Available in Drop 3.5	3.5
2.7	Show the system can ingest FDD Orbit/Attitude data	X	0010, 0020, 0030, 0040, 0050, 0060, 2550, 2620, 170, 320, 1310, 1960, 2040, 2050	Available in Drop 5 - Note only Attitude is Launch critical	5
2.8	Show the system can insert FOS historical and detailed activity schedule data			Available in Drop 3.5. Data Type development only. <b>NO CAP.</b>	3.5
2.9	Show the system can ingest Sage III data types		0010, 0020, 0030, 0040, 0050, 0060, 2550, 2620, 200, 320, 1960, 2040, 2050	MOC interface and data. Available in Drop 4 SAGE II SCF not currently in plan	4
2.10	Show the system can ingest DAO data		0280, 210, 320, 1960, 2040, 2050	Available in Drop 5.	5
2.11	Show the system can ingest ASTER DEM data	X	290, 320, 1960, 2040, 2050	Available in Drop 4.	4
2.12	Show the system can ingest EDC Produced 100M DEM data from D3 tape		0340, 2660, 2680, 310, 320, 1960, 2040, 2050	Available Drop 5	5
2.13	Show the system can Ingest of GDAAC provided data types (NCEP and TOMS)	X	0250	Available Drop 4.	4
2.14	Show the system can concurrently ingest data from multiple sources.	X	0320, 2480, 2550, 2620, 10, 20, 30, 40, 50, 60, 70, 370, 390, 391	Available in Drop 3. Fault recovery enhancements (warm restart) in Drop 4.	3
2.15	Show the system can support concurrent ingest of multiple granules from a single source	X	0320, 2480, 2550, 2620, 10, 20, 30, 40, 50, 60, 70, 370, 390, 391	Available in Drop 3. Fault recovery enhancements (warm restart) in Drop 4.	3
2.16	Show the system can add new data types to be ingested		0070, 0330, 2260	Basic capability in Drop 1; Operator GUI in Drop 5	5
<b>3. Data Production</b>					
3.1	Show that archived data can be used as input to PGE execution	X	0460, 2060, 2130, 2630, 0430, 0450, 0470, 0510, 0520, 0670, 0680, 0690, 0990, 1030, 1100, 1110, 1120, 1140, 1150, 1160, 1180	Available in Drop 1. Production history metadata enhancements in Drop 5.	1

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
3.2	Show that archived ancillary data can be used as input to PGE execution	X	0450	Available in Drop 1.	1
3.3	Show the system can support interim products	X	2130, 2230	Available in Drop 3	3
3.4	Show the system has the capability to preprocess FDD attitude data	X	0170, 1310	Available in Drop 5	5
3.5	Show that the insertion of data into the archive can cause the automatic scheduling of PGE executions.	X	0450, 4320, 0670, 0840, 0850, 1240	Available in Drop 1.	1
3.6	Show the system supports using products with single date/time temporal coverage as input to processing	X	0730	Available in Drop 3	3
3.7	Show that the output of one PGE can be used as the input of another PGE (PGE chaining)	X	0430, 0450	Available in Drop 1	1
3.8	Show concurrent execution of PGE chains from different instruments	X	0430, 0450, 1020	Available in Drop 1.	1
3.9	Demonstrate that the system can support the Advanced Temporal production rule	X	0521	Available in Drop 1.	1
3.10	Demonstrate that the system can support the Metadata-based Activation production rule	X	0532	Available in Drop 1.	1
3.11	Demonstrate that the system can support the Orbit-based Activation production rule	X	0522	Available in Drop 1.	1
3.12	Demonstrate that the system can support the Alternate Inputs (including timers and use of ancillary data) production rule	X	0531	Available in Drop 1.	1
3.13	Demonstrate that the system can support the boundary and period specifications production rule	X	0530	Available in Drop 1.	1
3.14	Demonstrate that the system can support the spatial query production rule	X	0540, 2170	Available in Drop 3.	3
3.15	Demonstrate that the system can support the tiling production rule		0550	Available in Drop 3.	3
3.16	Demonstrate that the system can support the data day production rule		0560	Available in Drop 4	4
3.17	Demonstrate that the system can support the metadata-based query for static input granules production rule	X	0570	Available in Drop 3	3
3.18	Demonstrate that the system can support the metadata-based query for dynamic input granules production rule		0571	Available in Drop 3.5	3.5
3.19	Demonstrate that the system can support the minimum number of granules production rule	X	0580	Available in Drop 3.5	3.5
3.20	Demonstrate that the system can support the optional DPRs production rule	X	0590	Available in Drop 3.5	3.5
3.21	Demonstrate that the system can support the most recent granule production rule	X	0600	Available in Drop 4	4
3.22	Demonstrate that the system can support the runtime parameter flag production rule	X	0610	Available in Drop 3.	3
3.23	Demonstrate that the system can support alternates based on different minimum number of granules (MODIS 288 granules case)		0620	Available in Drop 5	5
3.24	Demonstrate that the system can support the start of 16 days production rule		0630	Available in Drop 5	5
3.25	Demonstrate that the system can support accessing 0 to 233 orbit number	X	0650	Available in Drop 3	3
3.26	Demonstrate that the system can support the smart start of year production rule		0640	Available in Drop 5	5

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #/ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
3.27	Demonstrate that the system can support use skip first production rule	X	0533	Available in Drop 1	1
3.28	Demonstrate that the system can support the tile clustering production rule		0660	Available in Drop 5	5
3.29	Demonstrate that the system can support the zonal tiling production rule		0661	Available in Drop 5	5
3.30	Show that the system can handle failed PGE executions	X	1160	Available in Drop 1	1
3.31	Demonstrate support for converting AM-1 ancillary packets into orbit files	X	1300	Available in Drop 1	1
3.32	Demonstrate support for converting AM-1 ancillary packets into attitude files	X	1300	Available in Drop 1	1
3.33	Show the system can create, edit, activate, and save production plans	X	0430, 0440, 0450, 0470, 0510, 0520, 0670, 0680, 0690, 0740, 0460, 0840	Available in Drop 1. Enhancements to save candidate plans is Drop 3.	1
3.34	Show the system can support ASTER on-demand processing	X	0430, 0480, 3230	PDPS support in Drop 3.5. JEST support in Drop 5.	3.5
3.35	Show the system can support ad-hoc reprocessing	X	0500, 0490, 1330	Manual support using scripts in Drop 2. Automated support in Drop 4.	2
3.36	Show the system can support replanning and plan reactivation	X	0700, 1320	Available in Drop 3	3
3.37	Show the system can display and manage production resources	X	0830, 1090, 1340	Available in Drop 1. Disk space garbage collection in Drop 3.5.	1
3.38	Show the system can produce a 7 day plan in 2 hours		0940	Available in Drop 5.	5
3.39	Show the system can detect and eliminate runaway PGEs (implement max CPU thresholds)		1060	Available in Drop 3.5	3.5
3.40	Show the system can generate and store production history	X	1140, 1150, 2020	Available in Drop 1. Production history metadata enhancements in Drop 5.	1
3.41	Show the system can provide an SCF toolkit	X	1500	Available in Drop 1	1
3.42	Show the system can provide a DAAC toolkit	X	1510	Available in Drop 1	1
3.43	Show support for data versioning		2290	Available in Drop 4	4
3.44	Show the capability to generate plans that contain ground event jobs	X	0670, 0830, 1050	Available in Drop 4; Most planning background is available in Drop 1	4
3.45	Show the capability to support cross-DAAC production using remote acquires	X	1180, 2630	Available in Drop 1	1
3.46	Show the capability to support predefined MODIS L1B subsetting required for cross-DAAC production		2360	Available in Drop 5.	5
<b>4. Data Archive</b>					
4.1	Show that ingested data are catalogued and archived so that they can be located and retrieved for production and distribution	X	1960, 1970, 2000, 2010, 2040, 2050, 2620, 2640	Available in Drop 1. Metadata validation enhancements in Drop 3.5. Cache management enhancement to support pull area garbage collection in Drop 4.	1
4.2	Show that data resulting from production are catalogued and archived so that they can be located and retrieved for production and distribution	X	1960, 1970, 1990, 2020, 2030, 2040, 2050, 2620, 2640, 2000, 2010	Available in Drop 1. Metadata validation enhancements in Drop 3.5. Cache management enhancement to support pull area garbage collection in Drop 4.	1
4.3	Show the system has the ability to identify lost files on damaged tapes and recover undamaged files		0500, 0920, 1150, 2530, 2790	Basic capability in Drop 5.	5
4.4	Show that the system can support archive backups and can access the backup copy when the primary copy is inaccessible		2760	Available in Drop 4.	4
<b>5. Operations Data Access and QA</b>					
5.1	Demonstrate that an SCF can acquire and view production results to perform QA	X	1650, 1660, 2060, 2100, 2450, 3290, 3331, 3340, 3350, 2090	Available in Drop 1 through B0SOT. JEST available in Drop 5.	1
5.2	Show that an SCF can acquire and view production history data			<b>NO CAP</b>	TBD
5.3	Demonstrate that a DAAC operator can update QA metadata on behalf of the SCF	X	1210, 1230	Available in Drop 1 using DAAC QA tool.	1

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #/ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
5.4	Show that the system supports SCF update of QA metadata		2160, 3360	Available in Drop 5 using JEST support.	5
5.5	Show that the system supports user registration	X	3110, 3590, 3591	Available in Drop 1	1
5.6	Show that an operator can update the user profile information		3591, 3770, 3820	Available in Drop 1. DAR information update in Drop 3.	1
5.7	Show the system supports DAR user registration and registration updates		3591, 3760, 3770, 3820, 4030, 4170	Available in Drop 3	3
5.8	Show that the system can distribute data in response to a subscription order electronically via FTP.	X	2420, 2830, 2840, 4320	Available in Drop 1	1
5.9	Show that the system can distribute data in response to a client order electronically via FTP	X	2830, 2840	Available in Drop 1	1
5.10	Show that the system can distribute data in response to subscription order via 8mm and 4mm tape	X	2420, 2660, 2670, 2850, 4320	Available in Drop 1. 4mm tape available in Drop 5.	1
5.11	Show that the system can distribute data in response to client order via 8mm tape	X	2660, 2670, 2850	Available in Drop 1	1
5.12	Show that the system can support simultaneous orders from multiple users	X	2531, 2870, 3370	Available in Drop 3 including DSS support for RFH	3
5.13	Show that a user can order any archived data to be delivered electronically via FTP	X	1660, 2060, 2450, 3140	Available in Drop 1	1
5.14	Show that a user can order any archived data to be delivered through mail via 8mm and 4mm tape	X	1660, 2060, 2450, 3140	Available in Drop 1. 4mm tape available in Drop 5.	1
5.15	Show that the system supports user orders for Landsat-7 scene data, which is generated on-the-fly using subsetting services, including mirror-scan correction data, calibration data, and CPF data	X	1630, 1655, 1660, 2150, 2330, 2340, 2350, 2890, 3140	Available in Drop 3.	3
5.16	Show the system can distribute CPF data with L7 scene orders	X	2150	Available in Drop 3.5	3.5
5.17	Show the system can reformat L7 data for distribution	X	2390	Available in Drop 3.	3
5.18	Show the system can support distribution of cloud cover data to the L7 MOC	X	2200	Available in Drop 3.5	3.5
5.19	Show the system can distribute ASTER expedited data with a signal file	X	2120	Available in Drop 3	3
5.20	Show the system can support single and multi-site data searches		1570, 1600, 2170, 2190, 2870, 3170, 3180, 3190, 3200, 3620, 3670, 3680,	Available through B0SOT in Drop 1. Single site searches through JEST in Drop 5.	1
5.21	Show the system can support ftp and integrated browse		1970, 1980, 2070, 2080, 3140, 3210, 3330	FTP browse via B0SOT in Drop 1. Integrated browse via B0SOT in Drop 5. FTP and integrated browse via JEST in Drop 5.	1
5.22	Show the system can support unqualified and qualified subscriptions	X	4330, 4340	Available in Drop 1. Spatial qualifiers available in Drop 5.	1
5.23	Show the subscription server can support the encryption of ftp passwords for ftp push acquire actions		4390	Available in Drop 5	5
5.24	Show that an operator can submit standing orders on behalf of a user	X	1240, 4310	Available in Drop 2	2
5.25	Show that an operator can submit subscriptions on behalf of a user	X	1240, 4310	Available in Drop 2	2
5.26	Show the system can support single and multi-site data orders, including order tracking		1580, 1610, 1630, 2140, 3210,	Available through B0SOT in Drop 1. Single site orders through JEST in Drop 5. Request level order tracking through MSS in Drop 3.5.	1
5.27	Show the system can handle requests for large volumes of data	X	3220, 3250, 3260, 2870, 2880	Basic capability in Drop 3. Full capability in Drop 4.	3
5.28	Demonstrate that operations staff can obtain order status from the system		2140, 2910	Basic capability through DDIST GUI in Drop 1. Request level order tracking through MSS in Drop 3.5.	1
5.29	Show the system has the capability to enable / disable guest user logins and configure the number of concurrent registered users		1730, 4540	JEST support available in Drop 5. V0 Gateway support is Post Launch.	5
5.30	Show that the system can control access to data and services based on user and group IDs.		3971	Available in Drop 5 for the acquire service on data collections only. <b>SDSRV: NO CAP.</b>	5
5.31	Show the system can handle many requests for many products concurrently	X	2531, 2870	Available in Drop 3	3
5.32	Show the moderator (DAAC Ops, IT at SCF, and other?) can moderate advertisement groups.		3040	Available in Drop 3	3
5.33	Show system can export Advertising information for replication to advertising servers		3030	Available in Drop 4.	4

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #/ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
5.34	Show system can distribute (export) data dictionary information for replication to data dictionary servers		1530	Available in Drop 4	4
5.35	Show the system can support data type installations, including advertising and data dictionary export	X	1550, 1560, 1561, 2260, 2270, 2280, 2290, 2310	Available in Drop 3. Automated update of V0 valids in Drop 4.	3
5.36	Show Metadata Creation Tools work properly for metadata population and all appropriate metadata destinations are populated correctly			Metadata Works Tool available in Drop 2. <b>NO CAP.</b>	2
5.37	Show the system can support operator access and management of the data dictionary		1560	Available in Drop 3.5 Replication available in Drop 4.	3.5
5.38	Show operator can create, modify and delete schema configuration information, attributes, valids, values, definitions		1550, 1551, 1560, 1561, 1562	Automated insertion of ECS collection attributes and attribute mapping codes in Drop 3. V0 valids export in Drop 3.5. Delete/update collection in Drop 4. V0/ASTER valids import in Drop 4.	3
<b>6. SSI&amp;T Capabilities</b>					
6.1	Show the system can interactively add algorithm packages	X	0260, 1270	Available in Drop 1	1
6.2	Show the system can support updates to algorithm packages	X	1270	Available in Drop 1	1
6.3	Show that during SSI&T the system can support registration of PGEs.	X	1250	Available in Drop 1	1
6.4	Show that during SSI&T the system can support the archival of PGE.exe TAR files	X	1260	Available in Drop 1	1
6.5	Show that during SSI&T the system can demonstrate the SSAP GUI	X	1270	Available in Drop 1	1
6.6	Show that during SSI&T the system can update PDPS/SSI&T database GUI	X	1280	Available in Drop 1	1
6.7	Show that the system provides the following SSI&T Tools: prohibited function checker; PCF checker; binary file differences; HDF comparison tool; profiling	X	1290	Available in Drop 1	1
6.8	Show that the system provides the ability to configuration manage the received software		3540		
6.9	Show that the system provides the ability to execute received software in a test mode	X	3990	Available in Drop 1	1
6.10	Show that the system supports remote access to DAACs for SSIT	X	4550	Available in Drop 3	3
<b>7. Management Capabilities</b>					
7.1	Show the system can use HP Openview and Tivoli to perform network monitoring, application monitoring, COTS monitoring and O/S Monitoring, including error detection with threshold checking	X	3420, 3460, 3500, 3510, 3920, 3890, 3570, 1440, 3900, 3911, 3912, 3920, 3480	Available in Drop 3. Application performance monitoring available in Drop 5. 3900, 3911, 3912, 3920 are not launch critical. Database server administration (3480) in Drop 5	3
7.2	Show the system can support data backup and restore (for non-archive data)	X	3490	File system backup available in Drop 3. Archive back-up is a separate feature (see 4.1.4).	
7.3	Show the system can support trouble ticketing	X	3530, 3790	<b>Database back-up: NO-CAP</b> Available in Drop 1. Trouble ticket consolidation (3790) at SMC in Drop 5. <b>TT-Exchange w.</b>	3
7.4	Show the system can support NCR management	X	3560, 3810	<b>Aster:NO-CAP</b> Basic capability in Drop 1. NCR consolidation in Drop 3	1
7.5	Show the system can support baseline and inventory management	X	3550, 3540, 3800	Available in Drop 4. Software baseline management (3540) & baseline consolidation (3800, Drop 5) are not launch critical.	1
					4

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
7.6	Show an operator tool to support system startup and shutdown	X	3630, 3890, 3900, 3911, 3912, 3913, 3480, 1440, 1910	Available in Drop 3 Database server administration (3480) in Drop 5. Cross machine startup/shutdown in Drop 5. 3900-3913 are not launch critical.	3
7.7	Show the ability to generate management reports		0400, 0960, 1470, 1930, 2590, 2800, 3000, 3080, 3940, 4140, 4210, 4290, 4610, 3690, 3700, 3721, 3722, 3740, 3750, 3590, 3591, 3620, 3621, 3622, 3690, 3710	Available in Drop 5. Support for performance reports is POST LAUNCH. <b>Support for MSS Metrics by applications: NO CAP. MSS pulls and logs perf. metrics: NO CAP.</b>	5
7.8	Show the ability to produce and browse MSS error logs	X	3690, 3710	Available in Drop 4	4
7.9	Show the ability to store and archive management data	X	3720, 3722, 3700, 3721	For MSS Logs: available in Drop 4. HP/OV and HTTP logs: Drop 5.	4
7.10	Show the system can support scheduling and management of physical media devices used by ingest and data distribution	X	2660	Available in Drop 1	1
7.11	Show the system can monitor and manage electronic distribution (DDIST GU)	X	2670, 2910, 2830, 2840, 2941, 2820, 2920, 2930, 2940	Basic capability available in Drop 1. Upgrades in later drops (change priority, resume, cancel - 2920, 2930 - in Drop 2, UI improvements - 2940, 2941 - in Drop 5) are not launch critical.	1
7.12	Show that the operator can monitor and manage the DCE infrastructure	X	3870, 4050, 4051	Admin scripts (4051) are in Drop 4.	3.5
7.13	Show that the system supports managing user accounts	X	3590, 3591	Upgrades for DAR users are the subject of 5.6	1
7.14	Show the system supports automated installation into modes via ECS Assist.			Available in Drop 2. <b>NO CAP.</b>	2
7.15	Show the system can monitor system access for security violations	X	4610	MSS monitoring syslog for Unix login failures. IDG reporting DCE login failures to the MSS log. Available in Drop 3.	3
7.16	Show that the system can demonstrate fault recovery (client/server rebinding after failure, resource cleanup, cold restart).	X	0390, 0880, 1340, 2451, 2540, 2541, 2560, 2570, 2770, 2993, 3070, 3870, 1390, 1400, 1401, 2584, 3081, 3595, 3723, 4111, 4150, 4151, 4200, 4212, 4213, 4300, 4301, 4621	Available in Drop 3. PDPS recovery for DSS I/f: Drop 3.5 & Drop 4 (1400, 1401). Processing disk space garbage collection: Drop 3.5 (1340). SDSRV cold start: Drop 4 (2584). MDA rebinding: Drop 4 (3723). L7 G/w: Drop 3.5 (415x), Aster G/w: Drop 4 (42xx).	3
7.17	Show that the system can support warm restart.	X	0391, 2550, 2771, 3880, 2585, 2991, 2992, 3883, 4700	Available in Drop 4. Science Data Server warm restart available in Drop 5. Feature 7.17 is prerequisite.	4
7.18	Show that the system can recover queued and in progress orders after failures in DDIST, SDSRV, and STMGT		2540, 2541, 2570, 2581, 2582, 2583, 2770, 2771, 2991, 2992, 2993, 2994	Available in Drop 4.	4
7.19	Show that the system can recover queued and in progress subscription notifications and actions after failures in SBSRV and SDSRV	X	4431, 4432	Available in Drop 3	3
7.20	Show that the system can recover queued and in progress requests after failures in INS, SDSRV, and STMGT		0390, 0391, 2540, 2570, 2585, 2770, 2771, 3081, 4111	Available in Drop 4	4
7.21	Show the system has the capability to garbage collect the pull distribution area after a user has pulled their files		4020	Available in Drop 3.5. <b>NO CAP for STMGT</b>	3.5
<b>8. User Services</b>					
<b>8.1 Web-based User Interface Capabilities</b>					

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #/ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
8.1.1	Show the JEST (web) client can support user inventory search to single and multiple sites with core and product specific attributes		1530, 1540, 1570, 1600, 2310, 3170, 3180, 3190, 3200, 3250, 3260, 3270, 4440, 4450, 4460, 4470, 4480, 4510, 4520	Available in Drop 5. <b>Multi-site capabilities: POST LAUNCH.</b>	5
8.1.2	Show JEST can support search status.		2210, 3190	Available Post Launch.	P
8.1.3	Show JEST can support results manipulation (sorting) [CHUNKING DELETED - POST LAUNCH CAPABILITY]		2190, 3170, 3200	Results Manipulation: Drop 5. Chunking is POST LAUNCH.	5
8.1.4	Show the JEST client can support product ordering (including ASTER on demand) from single and multiple sites for media and ftp delivery		3170, 3180, 3190, 3200, 3250, 3260, 3270, 3280 4440, 4450, 4460, 4470, 4480, 4490, 4500, 4510, 4520, 1580, 1610, 1690, 0480, 3210, 3622	Available in Drop 5 Multi-site ordering (1580) is POST LAUNCH. Use of packaging information from Advertising service (1690) is POST LAUNCH. <b>Deleting on-demand products from DSS: NO CAP.</b>	5
8.1.5	Show JEST can support price estimates (Landsat 7 only)		3280	Available in Drop 5. Uses L7 estimation work-around. No multi-site capability is involved.	5
8.1.6	Show JEST can support concurrent processing of simultaneous user requests including internal session management (including login and logout)		3250, 3260, 4440, 4450, 4460	Available in Drop 5.	5
8.1.7	Show JEST can support integrated access to and update of user profile		3210, 4480	Available in Drop 5.	5
8.1.8	Show JEST can support FTP and Integrated browse access to single and multiple sites		1590, 1620, 2060, 2070, 2080, 3330, 4530, 4440, 1970, 1980, 3210	Available in Drop 5. Multi-site access is Post Launch. Subset of feature 8.1.4, product ordering for ftp is pre-requisite	5
8.1.9	Show JEST can support request-level order status (including order tracking)		1580, 1610, 2140, 2900, 3220, 3620, 3621, 3622, 4480	Available in Drop 5. Multi-site orders are POST LAUNCH.	5
8.1.10	Show JEST can support access to data dictionary for valids		1540, 3180, 4520	Available in Drop 5.	5
8.1.11	Show advertising service can support context passing to JEST to support direct order of datasets or further detailed search			Available in Drop 5. <b>NO CAP.</b>	5
8.1.12	Show user can register and access ESOD via the EOSDIS Home Page	X	3100, 3110, 3590, 3591	Available in Drop 4.	4
8.1.13	Show user can start-up web-based EOSDIS tools which are available from the Home Page		3100	Available in Drop 4. Web based tools are the user registration form and ESOD.	4
8.1.14	Show that the user can download the desktop and end-user tools from the EOSDIS home page.		3100, 3130	Available in Drop 3.	3
8.1.15	Show that the end user can submit a problem report.				TBD
<b>8.2 Desktop</b>					
8.2.1	Show user can invoke each ECS tool (User Registration Tool, DART, BOSOT, EOSView, and JEST(?)) from the Desktop	X	3120, 3130, 3150, 3590, 3160, 3170f, 3140	Eosview, User Registration Tool, ESOD, BOSOT: Drop 1. DART: Drop 4. JEST: Drop 5. Comment Survey Tool: POST LAUNCH ( <b>NO CAP</b> )	1
8.2.2	Show user can register via the Desktop through the User Registration Tool	X	3120, 3130, 3590, 3591	Available in Drop 1.	1
8.2.3	Show user can set user preferences in the Desktop (icon vs hierarchical mode, Icon sizes, Icon Arrangement)	X	3120, 3130	Available in Drop 1.	1
8.2.4	Show user can exercise Desktop functionality (including navigate directories (up, Home), manipulate windows (Open, Duplicate, Close), directories (Create, Copy, Delete, Undelete), applications (Open, Copy, Delete, Undelete), and refresh display)	X	3120, 3130	Available in Drop 1.	1
8.2.5	Show the system supports DAR submission by registered DAR users	X	3160, 3820	Available in Drop 4.	4
8.2.6	Show ability of DAR tool estimate the number of scenes returned by a DAR (not price estimate)		3160	Available in Drop 4. This is assumed to refer to the corresponding DAR Tool capability, because no such request is defined	4

## Version 2.0 Features - Version 1.2

NOTE: Drop 5 capabilities not baselined yet.

B/L #ing	Feature	LC	Required Capabilities	Feature Phasing	Drop
8.2.7	Show that guest and registered users can use B0SOT to search for and order data		3970	Available in Drop 1.	1
8.2.8	Show that a user can use EOSView to view data that are distributed to them	X	3150	Available in Drop 1	1
8.2.9	Show the system can support data dictionary searches	X	1540	Available in Drop 3 for internal system components. User access via DDT is Drop 5.	3
8.2.10	Show the user can submit provider advertisements		3020	Available in Drop 1	1
8.2.11	Show the user can submit data and service advertisements, including installable & invocable services.		3020, 3030, 3040	Available in Drop 1	1
8.2.12	Show user can modify and delete data and service advertisements (s)he previously submitted.			Available in Drop 1. <b>NO CAP.</b>	1
8.2.13	Show the system can support query of product and service advertisements (8.3.5) by keyword, temporal & spatial attributes and install the advertised service without using the Desktop	X	3020	Available in Drop 1	1

## Appendix C. Documentation List

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**LEGEND:**

“Update Needed for V2.0?” Column:

N = No update/redelivery required

N-PP = No update required. Specific V2.0 implementation of this document will be addressed in the V2.0 Game Plan as required.

Y = Yes, this document must be updated/delivered to support V2.0 activities.

D = The document was updated for V2.0 and DELIVERED on the date indicated.

“V2 Dependency Schedule” Column = Specify a time before(-) or after(+) a V2 activity that the document must be available to support (e.g. ORR+2 Weeks; Testing -1Month; Training -1 Month)

“Proposed V2 Delivery Date” Column = Planned date of delivery to “user/customer” derived by applying “V2 dependency Schedule” to current V2.0 project schedule.

“Document Content ---“ Column = Enter either “As specified in DID” or summarize exceptions/differences with reasons.

DID #	Document Title	Update: Needed for V2.0 ?	Responsible Organization /Individual	Current CDRL Delivery Schedule	V2 Dependency Schedule (Support Activity +/- time)	Distribute Outline/ Table of Contents	Distribute Draft/ Preliminary for Review	Submit Final to DM-Final Approval - Delivery	Proposed V2.0 Delivery Date	Document Content/ DID Exceptions (Summarize exceptions with reasons)
102/MG1#	ECS CM Plan-VOL 2 (M&O)	Y	M&O/R. Creecy	1 wk prior to PMR	Prior to Ops Readiness Activities	N/A	2/1/98	3/1/98	4/1/98	Implementation addressed in V2 Project Plan as req'd
214/SE1#	ECS Security Plan	N	SE/F. Davarya	PDR + 4 months	N/A	N/A	N/A	N/A	N/A	
302/DV1(P)# 302/DV2 (F)#	ECS Facilities Plan	Y	M&O/T. Jaeger	SDR -2 weeks (P) CDR + 1 month	1)Site Install Plans @ Site installations-1 Mo. 2) ORR (Updated to reflect As-Exists)	COMPLETE	4/15/98	4/30/98	1) DELIVERED 2) 5/28/98	2) Only the As-Built floor layouts, network diagrams, etc will be delivered
305/DV3 (P)# 305/DV2(F) 305/DV2 (U/D)	Segment/ Design Specifications	Y	Dev/S. Dennison & SE/ R. Miller	PDR/IDR -2 weeks (P) CDR -2 weeks (F) RRR -2 weeks (U/D)	Draft to support dev/test  Final to support Maintenance at Launch-30 Days.	S/W-11/25/97 COMPLETE  H/W 1/16/98	S/W-1/2/98  H/W 2/2/98	S/W-5/15/98  H/W 5/15/98	Final: 5/29/98	Text document that describes the purpose of each Configuration Item, its internal design (e.g., executables), the purpose of each executable, configuration items or external interfaces with which each executable, exchanges data, etc, and databases each executable uses and/or manages. COTS products identified by vendor and the use of the COTS in the context of ECS described. Object level design detail provided through ABC++ or similar automated tool.

DID #	Document Title	Update: Needed for V2.0 ?	Responsible Organization /Individual	Current CDRL Delivery Schedule	V2 Dependency Schedule (Support Activity +/- time)	Distribute Outline/ Table of Contents	Distribute Draft/ Preliminary for Review	Submit Final to DM-Final Approval - Delivery	Proposed V2.0 Delivery Date	Document Content/ DID Exceptions (Summarize exceptions with reasons)
311/DV1#	Database Design and Database Schema Specifications	Y	Dev/S. Dennison	PDR/IDR + 1 month (P), CDR + 1 month (F), RRR + 1 month (U/D)	RRR+1 Mo.	11/25/97 COMPLETE	1/2/98	5/15/98	Final: 5/29/98	Per DID
313DV3	ECS Internal ICDs	Y	Dev/S. Dennison	PDR/IDR-2 Wks(P),CDR-2Wks(F)	Draft for Drop 1, Final Before Launch	11/25/97 COMPLETE	1/2/98	5/15/98	Final: 5/29/98	Per Annotated Outline (Describes System-Level Scenario CSCI Interactions)
319/DV1#	Release Integration & Test Plan	Y (Informal)	Test/K. Kleis	PDR/IDR -2 weeks (P), CDR - 2 weeks (f)	No formal delivery	COMPLETE	COMPLETE	On WEB Now	Updated After Each Drop	
322/DV2#	Release Integration & Test Procedures	Y (Informal)	Test/K. Kleis	TRR (P) CSR +1 month (f)	No formal delivery.	COMPLETE	COMPLETE	On WEB Now	Updated After Each Drop	(TBR): M&O Needs- Data sufficient to allow for regression tests. Deliverable also needs to include test drivers, test data sets, and instructions in the use of the drivers and data sets. Test will provide copies to support ops readiness.
324/DV3#	Release Integration & Test Reports	Y(Informal)	Test/K. Kleis	CSR +1 month	No formal delivery.	N/A	N/A	N/A	Daily	(TBR): M&O Needs- Data sufficient to allow for comparison with regression tests. Test will make test folders available.
326/DV3	Monthly Tabulation of Nonconformances	Y	SE/S. Petrone	monthly starting with TRR and ending with RRR	Monthly up to RRR	TBD-----	TBD-----	N/A	Monthly up to RRR	
332/DV3	Contractor's Release Experience Report	Y	SO/R. Plante	3 months after each Release	L+6 Mo.(Includes 3 months data ops experience)				Dec 98	
333/DV1#	PGS Toolkit Users Guide for the ECS Project	Y	SO/L. Klein	(F) SDR -6 months; (U/Ds) each toolkit release	Pre-launch tool kit release	N/A	N/A	N/A	Nov 97 Delivered 10/31/97	
409/VE1#	ECS Overall System Acceptance Test Plan	N(TBR)	Test/K. Kleis	SDR - 2weeks	Any update to plan related information will be reflected in procedures.	COMPLETE	COMPLETE	On-line Now	(Updated each Drop) Final: 5/29/98	

DID #	Document Title	Update: Needed for V2.0 ?	Responsible Organization /Individual	Current CDRL Delivery Schedule	V2 Dependency Schedule (Support Activity +/- time)	Distribute Outline/ Table of Contents	Distribute Draft/ Preliminary for Review	Submit Final to DM-Final Approval - Delivery	Proposed V2.0 Delivery Date	Document Content/ DID Exceptions (Summarize exceptions with reasons)
411/VE1#	ECS Overall System Acceptance Test Procedures	Y	Test/K. Kleis	3 months prior to RRR	Document provided when s/w turned over for ops readiness.	COMPLETE	COMPLETE	On-line Now	(Updated each Drop) Final: 5/29/98	(TBR) M&O Needs- Data sufficient to allow for regression tests. Deliverable also needs to include test drivers, test data sets, and instructions in the use of the drivers and data sets. Test: Ops can retrieve informal deliveries throughout Acceptance Test phase.
412/VE2#	ECS Overall System Acceptance Test Report	Y	Test/K. Kleis	RRR + 1 month	Reports will be delivered incrementally.	N/A	N/A	Daily	Final: 5/29/98	(TBR) M&O Needs- Data sufficient to allow for comparison with regression tests. Test: Reports will be delivered to Ops incrementally.
506/PA3	Audit Reports	Y	CM/R. Hornburg	RRR + 4 weeks	Incremental(TBD)				(TBD)????	(TBD)
512/PA1#	Maintainability Demonstration Test Plans	Y	QO/J. Spyrison	CSR - 2weeks	CSR-2 Wks.	COMPLETE	12/5/97	12/19/97	1/1/98	
519/PA3#	Maintainability Demonstration Test Reports	Y	QO/J. Spyrison	within 1 month of demonstration	Acceptance Tests+1 Mo.	COMPLETE	5/1/98	5/15/98	Final: 5/29/98	
525/PA3	Training & Certification Records	Y-DAACs RESPONSIBILITY (TBR)	M&O/K. Prickett (DAACs Create)	on-going — available for review on request	DAACs Should Provide Initial version at ORR	N/A	N/A	N/A	Initial: 5/28/98	
526/PA1#	Standard Repair Procedures	Y	M&O/T. Jaeger	RRR -1 month	RRR-1 Mo.	COMPLETE	1/15/98	1/30/98	2/15/98	As with prior release, document will state equipment is vendor maintained and no standard repair procedures are required.
529/PA3#	Malfunction/Failure Reports (MRs)	Y	SE/S. Petrone	ORR	Monthly from RRR Through ORR	N/A	N/A	N/A	Final: 5/28/98	
535/PA1	Acceptance Data Package	Y	SE/W. Burford	RRR + 4 weeks	ORR	1/30/98(TBR)	4/17/98 (TBR)	5/11/98(TBR)	5/28/98 (TBR)	
603/OP1#	Operational Readiness Plan	Y	M&O/R Creecy	CSR - 2 weeks	Ops Readiness Activities-1 Mo.	COMPLETE	12/12/97 COMPLETE	12/26/97	1/15/98	

DID #	Document Title	Update: Needed for V2.0 ?	Responsible Organization /Individual	Current CDRL Delivery Schedule	V2 Dependency Schedule (Support Activity +/- time)	Distribute Outline/ Table of Contents	Distribute Draft/ Preliminary for Review	Submit Final to DM-Final Approval - Delivery	Proposed V2.0 Delivery Date	Document Content/ DID Exceptions (Summarize exceptions with reasons)
609/OP1#	Operations Tools Manual	Y	Dev/S. Dennison	CSR -2 weeks	FINAL: Launch-30 Days	11/25/97 COMPLETE	1/2/98	5/15/98	Final: 5/29/98	Within the context of the HMI, describe the capabilities and services of the system, databases used, modes of operation, limitations, error messages and suggested solutions, and event logs including explanation of the fields. For operator inputs include the range/legal values and the usage. For display items, include the meaning/interpretation of all display elements.
611/OP3#	Mission Operations Procedures	Y	M&O/M. Matthews	CSR -2 weeks	Ops Readiness Activities-2 Wks	COMPLETE	11/21/97 COMPLETE	12/26/97	1/2/98	A description of the use of the ECS capabilities to perform operator and administrative functions. Typical topics are: start-up, shut-down, routine operations, error recovery, disaster recovery, system administration, the use of test configurations, HW maintenance and logistics procedures, COTS problem resolution, trouble ticketing, and configuration management.
612/OP3#	Programmer's Manuals	Deleted from SOW (CCR 505-01-41-039)	M&O/K. Cockerill	RRR + 1 month	N/A	N/A	N/A	N/A	N/A	
618/OP3#	Replacement Part List & Spare Parts List	Y	M&O/T. Jaeger	each CDR + 1 month & each RRR -2 weeks	RRR-1 Mo.	12/15/97	1/15/98	1/30/98	2/15/98	A list of all on-site spare parts as well as the source for other spare parts.
619/OP3#	Test & Support Equipment Requirements List	Y	M&O/T. Jaeger	each CDR + 1 month & each RRR -2 weeks	RRR-2 Wks.	1/15/98	1/30/98	2/15/98	3/1/98	
625/OP3#	Training Material	Y	M&O/K. Prickett	each CSR -2 weeks	Prior to Training	COMPLETE	COMPLETE	12/15/97	12/19/97	
626/OP1#	M & O Certification Plan	Y	M&O/K. Prickett	each RRR -2 weeks	Prior to Operator Certification Activities	2/1/98	2/15/98	3/1/98	3/15/98	
627/OP3	Security Risk Management Plan	Y	SE/F. Davarya	1 month after DID 215/SE3	ORR-2 Wks	TBD- DETERMINE NEED TO UPDATE BY 2/1/98	TBD	TBD	5/15/98 (TBR)	

DID #	Document Title	Update: Needed for V2.0 ?	Responsible Organization /Individual	Current CDRL Delivery Schedule	V2 Dependency Schedule (Support Activity +/- time)	Distribute Outline/ Table of Contents	Distribute Draft/ Preliminary for Review	Submit Final to DM-Final Approval - Delivery	Proposed V2.0 Delivery Date	Document Content/ DID Exceptions (Summarize exceptions with reasons)
704/PP3	RRR Presentation Package	TBD	PC/R. Clinard	2 weeks after RRR	TBD					
708/PP3	ORR Presentation Package	Y	M&O/T. Hickey (DAACs Create)	2 weeks after ORR	ORR+2 Weeks	N/A	N/A	N/A	6/15/98	
709/PP3#	TRR Presentation Package	N	PC/R. Clinard	2 weeks after TRR	N/A	N/A	N/A	N/A	N/A	
710/PP3#	ETR Presentation Package	N	PC/R. Clinard	2 weeks after ETR	N/A	N/A	N/A	N/A	N/A	
714/PP3#	CSR Presentation Package	N	PC/R. Clinard	2 weeks after CSR	N/A	N/A	N/A	N/A	N/A	
222/SE2	COTS Analysis & Modeling Report	Y	SE/A. Abtahi	Tri-annually (April 1, Aug 1, Dec 1)	Triannually	N/A	N/A	N/A	12/1/97 DELIVERED 4/1/98	
VDD	Version Description Document	Y	Dev/M. McDonald	None	At each DAAC Drop-2 Wks(TBR)		1/2/98(TBR)		Final:Each DAAC Drop-2 Wks.(TBR)	(TBR): A description of the integrated HW/COTS SW/Custom SW/database baseline including system capabilities, scenarios, config. Parameters, external interfaces, ESDTs, PGEs, documentation products (ops, test, dev) training products, NCR fixes, HW configuration and SW versions and patches. Typically, one of these is required for each site because of different HW baselines
none	Build Plan	Y	Dev/M. Dencsak	none	At Turnover				Each Drop	Build definition, Development Approach, Architecture, Contents, Exit Criteria, Installation Notes

# Abbreviations and Acronyms

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AO	Architect's Office
CDRD	Contract Data Requirements Document
CDRL	Contract Data Requirements List
DAAC	Distributed Active Archive Center
DDTS	Distributed Defect Tracking System
DID	Data Item Description
ECS	EOSDIS Core System
EDF	ECS Development Facility
ESDT	Earth Science Data Type
MRB	Management Review Board
NCR	Non Conformance Report
ORR	Operational Readiness Review
PGE	Product Generation Executive
RRR	Release Readiness Review
SE	System Engineering
SLOC	Source Lines of Code
SOW	Statement of Work
SRR	System Requirements Review
SSI&T	Science Software Integration & Test
VATC	Verification and Acceptance Test Center
VDD	Version Description Document

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