

10. Pull Scenario Group

The objective of the Pull Scenario Group is to confirm that the ECS user is provided the ECS services necessary to search and access the data holdings of the ECS DAACs, the Version 0 DAAC's, and the NOAA ADC. ECS services tested in this scenario include: Advertising services, browse, search types (inventory, directory, guide), file transfer protocol (ftp) orders, media access, support for standing orders, interoperability with the Version 0 system, the NOAA ADC and interfaces to Science Computing Facilities (SCF's).

The ECS Science Office conducted detailed discussions with the Earth Science community in order to develop representative science scenarios that illustrate how the science community utilizes ECS. The Science User Scenarios and Release A Operations Scenarios are used as a basis for some of the test procedures included in the Pull Scenario Group. These baselines tailored for Release A.

In addition to data ingested during acceptance testing, the Acceptance Test Organization is planning on populating the SDSRV with metadata and the Release A archives with a small amount of data from Version 0 for the purpose of running some of the search and order tests in this section. The LaRC and GSFC databases will contain the same metadata.

10.1 Science User Scenario

The Science User scenario demonstrates the ECS search and access services available to various skilled ECS science users. The following services are included: ECS accessibility and functionality via the Client/Server interface at two sites (LaRC, GSFC), one-way interoperability between ECS and the NOAA ADC, two-way interoperability between ECS and the ESDIS Version 0 System, Advertising services, search methods, on-line browse/data visualization, data product orders, standing orders, and basic SDPS Scheduling capabilities. According to the ECS system skills and work area assignment of the science user, these services are used to perform particular sets of functions and therefore, have been separated into groups that are relevant to the new science user, the experienced science user, ECS/Version 0 System Interoperability, and ECS/NOAA interoperability. The ECS Desktop user sequence begins by testing ECS basic search and access services attributed to new science users using default conditions for product access. The experienced science user is expected to exercise more complex search, browse and access services. ECS interoperability with NOAA and the Version 0 System involves the user having extended search and ordering skills to permit access to the data holding of NOAA and the Version 0 system.

10.1.1 ECS Desktop User Sequence

This sequence verifies that any user can establish a connection to each Release A ECS DAAC to confirm the ECS Search and Order Tool user can access the full range of services spanning the whole of EOSDIS data holdings for Release A. This sequence of tests consists of initial processing of the

ECS Search and Order Tool user access setup; generation of simple search queries using a number of methods to access high-level and detailed information about data products; requests for ordering data products; and receipt of product order status/results. Initial processing of the ECS Search and Order Tool setup involves user log-on, completion of an ECS account application, and activation/update of the user profile for account privileges. Generation of simple queries and locating information about mission and/or instrument data products involves the user accessing certain services. Those services are: the Directory search which provides the user with information on DAAC datasets from any point in the system; the Guide search which provides the user with detail descriptions about data products, platforms, and data centers; the Inventory search which provides the user with specific observations that are available for a data archive; and the Browse search which allows the user to view the image at reduced resolutions. Once the product of interest is located and selected, the user places a product order and selects a distribution medium if applicable.

Configuration: The subsystem needed to perform this sequence of tests are as follows. CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

- LaRC ECS DAAC
- GSFC V0 DAAC
- SMC
- GCMD

Operator Position(s): The operator positions from ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

- DAAC Resource Manager
- DAAC User Services Representative

Operational Scenario(s): The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release A document (605/OP1) and the ECS User Scenario Notebook (194-00311TPW), that were used to develop tests in this sequence of tests are listed:

- Network Data Distribution (Pull) Scenario (Nominal) (Section 3.11.1)
- Physical Media Distribution Scenario (Section 3.11.4)
- End-to-End Order Tracking Scenario - Hard Media (Section 3.14.1a)
- End-to-End Order Tracking Scenario - FTP (Section 3.14.1b)
- Place an Order for a Potential User Scenario (Section 3.14.4)
- Scenario Model #11b - Derivation of Snow Water Equivalents

- Science Scenario Model #15 - Daily Access of Lightning Data
- Science Scenario Model #3 - Grassland Scenario

Test Dependencies: There are no test dependencies needed for this sequence of tests.

10.1.1.1 System Access via Network Link

TEST Procedure No.: A100110.010\$G	Date Executed:	Test Conductor:
Title: System Access via Network Link		
Objective: This test verifies ECS is accessible by any user via network link.		
Requirements	Acceptance Criteria	
ESN-0003#A	<p>This requirement is verified through test.</p> <p>The ESN shall enable researchers on existing networks (TCP/IP & GOSIP) to gain access to data and ECS services in a transparent manner to the underlying differences between the networks.</p> <p>The ISS must provide connection oriented transport services as specified by the TCP protocol and Internet Protocol (IP). This requirement is verified by transferring data between the GSFC DAAC and the ECS Search and Order Tool.</p> <p>GOSIP is not supported in Release A.</p>	
ESN-0006#A	<p>This requirement is verified through test.</p> <p>ESN shall interface with NSI to reach all external non-ECS network-attached facilities and science users.</p> <p>The ISS must interface with NSI or an alternate Internet provider at GSFC to provide DAAC access to science users in accordance with the following documents:</p> <ol style="list-style-type: none"> DID 220, "Communications Requirements for the ECS Project " 194-220-SE3-001 Interface Requirements Document between EOSDIS Core System (ECS) and the NASA Science Internet(NSI), 194-219-SE1-001 	
ESN-1180#A	<p>This requirement is verified through test.</p> <p>Note: The verification method was changed from analysis to test.</p> <p>The ESN shall interoperate with NSI to provide user access to ECS.</p> <p>The searching/requesting of data via ECS Search and Order Tool will verify this requirement.</p>	

EOSD0040#A	<p>This requirement is verified through test.</p> <p>ECS shall provide users without prior approved accounts access to the system for descriptive information about ECS and the types of data it contains.</p> <p>This requirement is verified by initializing the ECS Search and Order Tool with an account without prior approval and obtaining information about ECS.</p>
IMS-0030#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide from each ECS access node, access to the full range of services spanning the whole of ECS, including data and services available from all DAACs without requiring that the user know the physical location of the data.</p> <p>The DESTK CI must support logins by science users and the WKBCH CI must provide the capability to transparently search across any combination of Data Servers for stored EOSDIS Data Granules. This requirement is verified by accessing ECS DAACs via the ECS Search and Order Tool at GSFC with/without a prior approved account for data and services.</p>
IMS-0070#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide the user with initial system access procedures, priority information, and authorized services as maintained in the SMC.</p> <p>The WKBCH CI must provide initial system access procedures, priority information and authorized services. This requirement is verified by logging on to the ECS Desktop and initializing the ECS Search and Order Tool and then accessing the authorized services.</p>
IMS-0090#A	<p>This requirement is verified through demonstration.</p> <p>Note : The verification method was changed from inspection to demonstration.</p> <p>The IMS shall be accessible to users via, at a minimum:</p> <ul style="list-style-type: none"> a. Direct connection b. Dial up connection c. Network link <p>Part 'c' of this requirement is verified by accessing the ECS Search and Order Tool via the ECS Desktop. Part 'b' is not in Release A and part 'a' will be tested in test No. A100110.020\$G.</p>

IMS-0100#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall support, at a minimum:</p> <ul style="list-style-type: none"> a. Interactive sessions b. Non-interactive sessions c. Client-server interface <p>Part 'a' is verified by logging into ECS Desktop and initializing the ECS Search and Order Tool to access the services to query data. Part 'b' is verified by the use of FTP or HTTP to access data. Part 'c' is verified through the use of the ECS Search and Order Tool.</p>			
<p>Test Pull test data table is still being updated.</p> <p>Inputs:</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
05	Tester: Login to a workstation which is non-local to the ECS network.	
06	Expected Result: Operating system must come up.	
07	Tester: Remote login to the ECS network where the ECS Desktop resides.	
08	Expected Result: Operating system must come up.	
10	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool as a user without a prior approved account.	
20	Expected Result: The ECS Search and Order Tool prompts for new users registration, afterward, the system comes up.	
30	Tester: Initialize a search for a specific product (AVHRR Pathfinder) unique to the GSFC DAAC and one from another ECS DAAC.	
40	Expected Result: When search is complete, the system notifies the user product is found.	
50	Tester: Request to receive the data via a ftp pull of the data.	
60	Expected Result: Data is retrieved from the archive and placed on the data server staging disk for a DAAC-set period of time.	
70	Tester: Run through all other authorized services (Directory, Inventory, Guide, Browse) of the ECS Search and Order Tool.	
80	Expected Result: Informational status messages describing the availability of ECS services are output and all services are accessible and functional for the user.	
81	Tester: Exit the ECS Search and Order Tool.	
82	Expected Result: The ECS Search and Order Tool is disabled.	
90	Tester : Re-initialize the ECS Desktop and bring up the ECS Search and Order Tool as a user with a prior approved account.	
100	Expected Result: The ECS Search and Order Tool prompts user for (acct. name, password), afterward, the system comes up.	
110	Tester: Initialize a search for a specific product (AVHRR Pathfinder) unique to the GSFC DAAC and one from another ECS DAAC.	
120	Expected Result: When search is complete, the system notifies the user product is found.	
130	Tester: Request to receive the data via a ftp pull of the data.	
140	Expected Result: Data is retrieved from the archive and placed on the data server staging disk for a DAAC-set period of time.	

150	Tester: Run through all other authorized services (Directory, Inventory, Guide, Browse) of the ECS Search and Order Tool.	
160	Expected Result: Informational status messages describing the availability of ECS services are output and all services are accessible and functional for the user.	
161	Tester: Exit the ECS Search and Order Tool.	
162	Expected Result: The ECS Search and Order Tool is disabled.	
170	Tester: From a non-ECS network-attached facility, as a user, initialize the ECS Search and Order Tool.	
180	Expected Result: The ECS Search and Order Tool screen must come up.	
190	Tester: Initialize a search for a dataset (AVHRR Pathfinder) unique to the GSFC DAAC.	
200	Expected Result: When search is complete, the system notifies the user product is found.	
210	Tester: Request to receive the searched data via a ftp pull of the data.	
220	Expected Result: Searched data is retrieved from the archive and placed on the data server staging disk.	
230	Tester: Run through all other authorized services (Directory, Inventory, Guide, Browse) of the ECS Search and Order Tool.	
240	Expected Result: Informational status messages describing the availability of ECS services are output and all services are accessible and functional for the user.	
250	Tester: Exit the ECS Search and Order Tool.	
260	Expected Result: The ECS Search and Order Tool is disabled.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.2 System Access via Direct Connection

TEST Procedure No.: A100110.020\$G	Date Executed:	Test Conductor:
Title: System Access via Direct Connection		
Objective: This test verifies ECS is accessible by any user via direct connection.		
Requirements	Acceptance Criteria	
ESN-0003#A	<p>This requirement is verified through test.</p> <p>The ESN shall enable researchers on existing networks (TCP/IP & GOSIP) to gain access to data and ECS services in a transparent manner to the underlying differences between the networks.</p> <p>The ISS must provide connection oriented transport services as specified by the TCP protocol and the Internet Protocol (IP). This requirement is verified by transferring data between the GSFC DAAC and the ECS Search and Order Tool. GOSIP is not supported in Release A.</p>	
ESN-0006#A	<p>This requirement is verified through test.</p> <p>ESN shall interface with NSI to reach all external non-ECS network-attached facilities and science users.</p> <p>The ISS must interface with NSI or an alternate Internet provider at GSFC to provide DAAC access to science users in accordance with the following documents:</p> <p>a. DID 220, "Communications Requirements for the ECS Project " 194-220-SE3-001</p> <p>b. Interface Requirements Document between EOSDIS Core System (ECS) and the NASA Science Internet(NSI),194-219-SE1-001</p>	
ESN-1180#A	<p>This requirement is verified through test.</p> <p>Note: The verification method was changed from analysis to test.</p> <p>The ESN shall interoperate with NSI to provide user access to ECS.</p> <p>The searching/requesting of data via the ECS Search and Order Tool will verify this requirement.</p>	
EOSD0040#A	<p>This requirement is verified through test.</p> <p>ECS shall provide users without prior approved accounts access to the system for descriptive information about ECS and the types of data it contains.</p> <p>This requirement is verified by initializing the ECS Search and Order Tool without a prior approved account and obtaining information about ECS.</p>	

IMS-0030#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide from each ECS access node, access to the full range of services spanning the whole of ECS, including data and services available from all DAACs without requiring that the user know the physical location of the data.</p> <p>The DESTK CI must support logins by science users and the WKBCH CI must provide the capability to transparently search across any combination of Data Servers for stored EOSDIS Data Granules. This requirement is verified by accessing ECS DAACs via the ECS Search and Order Tool at GSFC with/without a prior approved account for data and services.</p>			
IMS-0070#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide the user with initial system access procedures, priority information, and authorized services as maintained in the SMC.</p> <p>The WKBCH CI must provide initial system access procedures, priority information and authorized services. This requirement is verified by logging on the ECS Desktop and initializing the ECS Search and Order Tool and then accessing the authorized services.</p>			
IMS-0090#A	<p>This requirement is verified through demonstration.</p> <p>Note : The verification method was changed from inspection to demonstration.</p> <p>The IMS shall be accessible to users via, at a minimum:</p> <ul style="list-style-type: none"> a. Direct connection b. Dial up connection c. Network link <p>Part 'a' of this requirement is verified by accessing the ECS Search and Order Tool via the ECS Desktop. Part 'b' is not in Release A and Part 'c' is tested in test No. A100110.010\$G.</p>			
IMS-0100#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall support, at a minimum:</p> <ul style="list-style-type: none"> a. Interactive sessions b. Non-interactive sessions c. Client-server interface <p>Part 'a' is verified by logging into ECS Desktop and initializing the ECS Search and Order Tool to access the services to query data. Part 'b' is verified by the use of FTP or HTTP to access data. Part 'c' is verified through the use of the ECS Search and Order Tool.</p>			
<p>Test Inputs: Pull test data table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to a workstation which is directly connected to ECS network and enter user account & password.	
20	Expected Result: Operating system must come up.	
30	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool as a user without a prior approved account.	
40	Expected Result: The ECS Search and Order Tool prompts for user registration, afterward, the system comes up.	
50	Tester: Initialize a search for a specific product (AVHRR Pathfinder) unique to the GSFC DAAC and one from another ECS DAAC.	
60	Expected Result: When search is complete, the system notifies the user product is found.	
70	Tester: Request to receive the searched data via a ftp pull of the data.	
80	Expected Result: Searched data is retrieved from the archive and placed on the data server staging disk for a DAAC-set period of time.	
90	Tester: Run through all other authorized services (Directory, Inventory, Guide, Browse) of the ECS Search and Order Tool.	
100	Expected Result: Informational status messages describing the availability of ECS services are output and all services are accessible and functional for the user.	
101	Tester: Exit the ECS Search and Order Tool.	
102	Expected Result: The ECS Search and Order Tool is disabled.	
110	Tester : Re-initialize the ECS Desktop and bring up the ECS Search and Order Tool as a user with a prior approved account.	
120	Expected Result: The ECS Search and Order Tool screen must come up.	
130	Tester: Initialize a search for a specific product (AVHRR Pathfinder) unique to the GSFC DAAC and one from another ECS DAAC.	
140	Expected Result: When search is complete, the system notifies the user product is found.	
150	Tester: Request to receive the searched data via a ftp pull of the data.	
160	Expected Result: Searched data is retrieved from the archive and placed on the data server staging disk for a DAAC-set period of time.	

170	Tester: Run through all other authorized services (Directory, Inventory, Guide, Browse) of the ECS Search and Order Tool.	
180	Expected Result: Informational status messages describing the availability of ECS services are output and all services are accessible and functional for the user.	
181	Tester: Exit the ECS Search and Order Tool.	
182	Expected Result: The ECS Search and Order Tool is disabled.	
190	Tester: From a non-ECS network-attached facility, as a user, initialize the ECS Search and Order Tool.	
200	Expected Result: The ECS Search and Order Tool screen must come up.	
210	Tester: Initialize a search for a dataset (AVHRR Pathfinder) unique to the GSFC DAAC.	
220	Expected Result: When search is complete, the system notifies the user product is found.	
230	Tester: Request to receive the searched data via a ftp pull of the data.	
240	Expected Result: Searched data is retrieved from the archive and placed on the data server staging disk.	
250	Tester: Run through all other authorized services (Directory, Inventory, Guide, Browse) of the ECS Search and Order Tool.	
260	Expected Result: Informational status messages describing the availability of ECS services are output and all services are accessible and functional for the user.	
270	Tester: Exit the ECS Search and Order Tool.	
280	Expected Result: The ECS Search and Order Tool is disabled.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.3 User Registration

TEST Procedure No.: A100110.030\$G	Date Executed:	Test Conductor:
Title: User Registration		
Objective: This test verifies the user registration process for a ECS client user.		
Requirements	Acceptance Criteria	
EOSD0040#A	<p>This requirement is verified through test.</p> <p>ECS shall provide users without prior approved accounts access to the system for descriptive information about ECS and the types of data it contains.</p> <p>The CSS Bulletin Board Service must provide concurrent access to multiple users(registered or non-registered). The tester will initialize Netscape and bring up EDHS and view some of the ECS documents. This requirement is also verified by accessing and initializing the ECS Search and Order Tool and all authorized ECS services using an account without prior approval.</p>	
IMS-0040#A	<p>This requirement is verified through test.</p> <p>The IMS shall verify user authorization by validation of inputs with information supplied by the SMC.</p> <p>The WKBCH CI must provide an interface for user authentication and must display the results of user validation.</p>	
IMS-0060#A	<p>This requirement is verified through test.</p> <p>The IMS shall, when creating ECS user accounts, request registration approval, user account priorities, and authorized user services from the SMC.</p> <p>The WKBCH CI must provide the user with registration approval results when new ECS user accounts are requested. This requirement is verified by initializing the ECS Search and Order Tool as an unregistered user and the tool must prompt the tester for registration information.</p>	
IMS-0080#A	<p>This requirement is verified through inspection.</p> <p>The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.</p> <p>This requirement is verified by the Resource Manager requesting a list of authorized ECS services for each user from the SMC. Also, verification of this requirement will occur as new users register and the list of authorize ECS services is updated.</p>	

IMS-0085#A	<p>This requirement is verified through test. Note : The verification method was changed from inspection to test.</p> <p>The IMS shall provide unregistered users access to ECS services as authorized by the SMC.</p> <p>This requirement is verified by accessing ECS services via ECS Search and Order Tool as an unregistered user.</p>			
IMS-0130#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall verify that a user is authorized to access a particular IMS service before providing the service to the user.</p> <p>The WKBCH CI must provide registered users access to ECS services based on their account priorities and authorized user services. The capability to access a particular ECS Search and Order Tool service (i.e., directory, guide, inventory, browse) to search for and retrieve data will verify this requirement.</p>			
<p>Test Inputs: Pull test data table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to a workstation and Enter user account & password.	
20	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool as an authorized user.	
30	Expected Result: The ECS Search and Order Tool screen must come up.	
40	Resource Manager: Request a list of authorized services from the SMC for the user account.	
50	Expected Result: A list of services the user is authorized for is displayed and passed on to the Tester.	
60	Resource Manager: Run through the displayed authorized services to ensure their validity for one of the listed user.	
70	Expected Result: The services are accessible and functional for the selected user.	
71	Tester: Exit the ECS Search and Order Tool.	
72	Expected Result: The ECS Search and Order Tool is disabled.	
80	Tester: Initialize the ECS Desktop to bring up the ECS Search and Order Tool as an unregistered user from another workstation.	
90	Expected Result: ECS Search and Order Tool must prompt for user registration (account name, password).	
100	Tester: As an unregistered user run through all ECS services (inventory, guide, directory, browse).	
110	Expected Result: Services are accessible and functional for the user.	
120	Resource Manager: Request another list of authorized services for each user from the SMC.	
130	Expected Result: Review the list to ensure it was updated with the unregistered user in this test.	

131	Tester: Exit the ECS Search and Order Tool.	
132	Expected Result: The ECS Search and Order Tool is disabled.	
140	Tester: Run Netscape or Mosiac and access the EHDS homepage at “http://edhs1.gsfc.nasa.gov”.	
150	Expected Result: EDHS homepage will come up.	
160	Tester: Follow links to view some of the ECS documents.	
170	Expected Result: Requested ECS document will come up.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.4 User Profile

TEST Procedure No.: A100110.040\$G	Date Executed:	Test Conductor:
Title: User Profile		
Objective: This test verifies that ECS provides the capability for the user to supply an address and other contact information.		
Requirements	Acceptance Criteria	
IMS-0050#A	<p>This requirement is verified through test.</p> <p>The IMS shall provide the capability for users to define and modify user profile information, to include at a minimum:</p> <ol style="list-style-type: none"> a. User electronic address b. Data distribution media c. Data distribution address d. User expertise level e. Default query parameters f. Terminal characteristics g. Technical specialty <p>The WKBCH CI must provide the users the capability to view and modify the User Profile. This requirement is verified by entering, modifying and viewing items a-g as user profile information via the User Profile screen of the ECS Search and Order Tool.</p>	

IMS-0180#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall extract relevant data from the user profile information and display as default values.</p> <p>Where the User Profile specifies defaults for parameters which are applicable to an ECS Service Request, the user interface must employ these defaults to assist the user in the formulation of a new request. This requirement is verified by entering user profile information on the User Profile screen via the ECS Search and Order Tool and then accessing services (i.e., Product Order) that retrieve this information to process user requests.</p>			
SDPS-0095#A	<p>This requirement is verified through test.</p> <p>The SPDS shall provide science user interfaces that are individually tailorable including settable preferences, user defined keywords, query save capabilities, and screen layout preference.</p> <p>The WKBCH CI must provide the capability for a user to modify their user Profile Information. This requirement is verified by the user selecting user profile information, saving it, and running through other services. Queries are initialized and the search criteria is saved. While running through the services, the user ensures the ECS Search and Order Tool contains a user friendly interface.</p>			
<p>Test Pull test data table is still being updated. Inputs:</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to a workstation and Enter user account & password.	
20	Expected Result: Operating System must come up.	
30	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool.	
40	Expected Result: The ECS Search and Order Tool screen must come up.	
50	Tester: Select the User Profile Button to enter User Profile Information (Name, Address, Phone, Email address, etc.)..	
60	Expected Result: The User Profile Screen is displayed.	
70	Tester: Save the User Profile Information.	
80	Expected Result: User profile information is saved and stored in the system.	
90	Tester: Exit the ECS Search and Order Tool.	
100	Expected Result: The ECS Search and Order Tool is disabled.	
110	Tester: Re-initialize the ECS Search and Order Tool as the same user.	
120	Expected Result: The ECS Search and Order Tool screen must come up.	
130	Tester: Select User Profile.	
140	Expected Result: User Profile Information entered in step 50 is displayed.	
150	Tester: Run through ECS services (Guide, Directory, Inventory, Browse).	
160	Expected Result: All services are accessible and functional.	
170	Tester: Exit ECS Search and Order Tool.	
180	Expected Result: The ECS Search and Order Tool is disabled.	
190	Tester: Initialize the ECS Desktop to bring up the ECS Search and Order Tool to setup user profile information with different users using different settings (i.e., address, email address, data distribution media, user expertise level, etc.).	
200	Expected Result: The ECS Search and Order Tool screen must come up.	
210	Tester: Select the User Profile Button.	
220	Expected Result: The User Profile Screen is displayed.	
230	Tester: Enter User Profile Information (Name, Address, Phone, Email address, etc.).	
240	Tester: Save the User Profile Information.	
240	Expected Result: User profile information is saved and stored in the system.	
260	Tester: Exit the ECS Search and Order Tool.	
270	Expected Result: The ECS Search and Order Tool is disabled.	

280	Tester: Re-initialize the ECS Search and Order Tool as the same user.	
290	Expected Result: The ECS Search and Order Tool screen must come up.	
300	Tester: Select User Profile.	
310	Expected Result: User Profile Information entered in step 230 is displayed. All user profile information is stored for all users.	
320	Tester: Exit the ECS Search and Order Tool.	
330	Expected Result: The ECS Search and Order Tool is disabled.	
340	Tester: Initialize the ECS Desktop to bring up the ECS Search and Order Tool in order to modify user profile information (i.e., change address, phone, email address, etc.).	
350	Expected Result: The ECS Search and Order Tool screen must come up.	
360	Tester: Select the User Profile Button.	
370	Expected Result: The User Profile Screen is displayed.	
380	Tester: Change some of the User Profile Information (Name, Address, Phone, Email address, etc.).	
390	Tester: Save the User Profile Information.	
400	Expected Result: User profile information is saved and stored in the system.	
410	Tester: Exit the ECS Search and Order Tool.	
420	Expected Result: The ECS Search and Order Tool is disabled.	
430	Tester: Re-initialize the ECS Search and Order Tool as the same user.	
440	Expected Result: The ECS Search and Order Tool screen must come up.	
450	Tester: Select User Profile.	
460	Expected Result: User Profile Information modified in step 380 is displayed.	
470	Order some data products when executing the Product Order test as one of the user(s) in this test to ensure products are sent to the user(s) as specified in the user profile information.	
480	Tester: Exit the ECS Search and Order Tool.	
	USER PROFILE RESTRICTED DATA ACCESS	
490	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool.	
500	Expected Result: The ECS Search and Order Tool screen must come up.	
510	Tester: Select the User Profile Button.	
520	Expected Result: User Profile screen is displayed.	
530	Tester: Enter user profile information and click on restricted access key to enable the user to have access to restricted data.	
540	Tester: Save the User Profile information.	
550	Expected Result: User Profile Information is saved and stored in system.	
560	Tester: Search for restricted data at a DAAC where data is located. Search via guide, inventory, and/or directory service.	

570	Expected Result: The ECS Search and Order Tool informs the user when data is located.	
580	Tester: Exit the ECS Search and Order Tool.	
590	Expected Result: The ECS Search and Order Tool is disabled.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.5 Data Access Privileges

This test was deleted and the requirements were reallocated to tests A080160.020\$G and A100110.110\$G.

10.1.1.6 Directory Search

TEST Procedure No.: A100110.060\$G	Date Executed:	Test Conductor:
Title: Directory Search		
Objective: This test verifies that ECS has the capability to provide the user with brief concise high-level information about datasets from any point in the system via the Directory search option of the ECS Search and Order Tool.		
Requirements	Acceptance Criteria	
DADS2320#A	<p>This requirement is verified through demonstration.</p> <p>Each DADS shall send to the IMS, at a minimum, the following:</p> <ol style="list-style-type: none"> a. Metadata b. Documentation c. Product status dialog <p>The tester requests to retrieve the listed items via the ECS Search and Order Tool's directory search option.</p>	
EOSD5030#A	<p>This requirement is verified through test.</p> <p>The ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.</p> <p>The DESKT CI must utilize an X-Windows windowing interface for the GUI. The tester will initialize the ECS Desktop's Advertising service which use the WWW and other Internet servers to search and retrieve data.</p>	

IMS-0120#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide, dependent upon the user's display device capabilities, a user friendly interface with the following features at a minimum:</p> <ol style="list-style-type: none"> a. Multiple window display b. Buttons and pull down menus c. Valid lists for all variables d. An information base of associations between variables (e.g., between instruments and geophysical parameters). f. Context-sensitive help g. Minimal and consistent use of non-standard keys. h. Random movement through fields j. Standardized use of commands and terminology across screens k. Self-explanatory, meaningful error messages l. Automatic acronym expansion, which can be enabled and disabled interactively m. Availability of menu tree diagram n. Command language <p>This requirement is verified by the tester displaying multiple windows, selecting buttons and pull down menus, valid lists and using other items via the GUI interface of the ECS Search and Order Tool.</p>
IMS-0360#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall maintain or provide access to an on-line Earth Science master directory of information, which may be geographically distributed, that describes whole data sets in the Earth science disciplines.</p> <p>The tester will access the Global Change Master Directory (GCMD) via the ECS Search and Order Tool to review some datasets holdings.</p>
IMS-0390#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall maintain or provide access to directory entries for all data sets accessible through the IMS search and order service.</p> <p>The WKBCH CI must provide users a search and results interface to search for and view directory information. The tester will initialize the ECS Search and Order Tool via the ECS Desktop and access directory listing of some GSFC datasets.</p>

IMS-0600#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide the capability to search a directory of information that describes whole EOSDIS, non-EOSDIS, and ADC earth science datasets.</p> <p>The execution of this test will demonstrate the tester's capability to obtain ECS data and services using the Directory search option of the ECS Search and Order Tool.</p>			
<p>Test Pull test data table is still being updated.</p> <p>Inputs:</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to a workstation: Enter user account & password.	
20	Expected Result: Operating system must come up.	
30	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool as a user.	
40	Expected Result: The ECS Search and Order Tool screen must come up.	
50	Tester: Select the Search Screen button.	
60	Expected Result: The Search Screen is displayed.	
70	Tester: Select Goto Directory.	
80	Expected Result: Goto Directory is selected.	
90	Tester: Select "Global Change Master Directory" and review some datasets holdings of various agencies and institutions.	
100	Expected Result: GCMD screen come up with datasets holdings.	
102	Tester: Review some of the displayed datasets.	
104	Expected Result: The displayed information is legible and the tester is able to select information on any displayed dataset.	
110	Tester: Exit the GCMD.	
120	Expected Result: The GCMD is disabled.	
130	Tester: Select the Search Screen button.	
140	Expected Result: The Search screen is displayed.	
150	Tester: Click on Source/Platform List button.	
160	Expected Result: The Valids list for Source/Platform is displayed.	
170	Tester: Select DMSP-F8 and select the Guide Info button.	
171	Expected Result: The search is now initialized to DMSP-F8 and Guide Info.	
180	Tester: Select "dmsp f8.html" or similar document title.	
190	Expected Result: The document is displayed.	
200	Tester: Select "1." Document Information.	
210	Expected Result: The document information is displayed.	
220	Tester: Select Close to close the document.	
230	Expected Result: Document is closed and system returns to the Valids for Source/Platform window.	
240	Tester: Select Cancel.	
250	Expected Result: Valids for Source/Platform window closes.	
260	Tester: Select Directory type search.	
270	Expected Result: The search is now specified to be directory search.	
280	Tester: Select Dataset ID List button and select "SSM/I" as the search criteria to query the directory for SSM/I gridded brightness temperature data. Click on the OK button.	

282	Expected Result: The Dataset is selected.	
290	Tester: Initialize the search by clicking on the Execute Search button.	
300	Expected Result: The Communications Status screen is displayed with the status of the search and network activity. Observe the search until complete.	
310	Tester: Select the bolded Data button in the View column.	
320	Expected Result: The Directory results screen will be displayed.	
330	Tester: Click on the count button for the "SSM/I gridded brightness temperature data" and observe that information pertaining to the dataset is highlighted.	
340	Tester: Select to order the data and have it sent via ftp.	
350	Expected Result: The data is ordered and received as requested.	
360	Tester: Observe the Directory Results screen, the Communications Status screen, and the Search screen.	
370	Expected Result: The system allows multiple windows to be displayed simultaneous.	
380	Tester: Click the buttons and pull down menus on each displayed screen.	
390	Expected Result: Each screen buttons and pull menus are functional and the user can randomly move through each field.	
400	Tester: Observe the use of non-standard keys (i.e., metacharacters such as Ctrl key, etc.).	
410	Expected Result: The user has minimal and consistent use of the keys on each screen.	
420	Tester: Make some invalid selections in some of the fields on one of displayed screens.	
430	Expected Result: Self explanatory and meaningful error messages are displayed.	
440	Tester: Select the Help pull down menu on one of the displayed screens and observe the context-sensitive help menu.	
450	Expected Result: Help items are displayed and messages indicating direction are output for selections.	
460	Tester: Exit the ECS Search and Order Tool.	
470	Expected Result: The ECS Search and Order Tool is disabled.	
480	Tester: Initialize the Advertising Service to enables searches using the WWW.	
490	Expected Result: The Advertising Service is initialized.	
500	Tester: Initialize a search using the datasets: "AVHRR Pathfinder Land 10 Day Mosaics", "CHANG SSM/I DERIVED RAIN INDICES", and "SRB_MONTHLY" as the search criteria.	

510	Expected Result: Mosaics or Netscape initialize a search for the datasets and displays the findings.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.7 Guide Search

TEST Procedure No.: A100110.070\$G	Date Executed:	Test Conductor:
Title: Guide Search		
Objective: This test verifies that ECS has the capability to provide detailed descriptions about datasets, platforms, sensors, projects, and data centers as an user aid in selecting and using data via the Guide search option of the ECS Search and Order Tool.		
Requirements	Acceptance Criteria	
DADS2320#A	<p>This requirement is verified through demonstration.</p> <p>Each DADS shall send to the IMS, at a minimum, the following:</p> <ol style="list-style-type: none"> Metadata Documentation Product status dialog <p>The request for documentation describing metadata and the ordering of the Guide documents using the ECS Search and Order Tool's Guide Search will verify this requirement.</p>	
IMS-0410#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall maintain an on-line guide (documentation/reference material) that provides information about individual EOSDIS data sets.</p> <p>The DDSRV CI must store, maintain, and provide data management services for ECS guide (documentation/reference materials). The retrieving of guide information via the ECS Search and Order Tool will verify this requirement.</p>	

IMS-0415#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide the ability to access and present (dependent on the user's display device capabilities) guide information which includes graphics and hypertext, derivable from suitably structured documents, as well as plain text.</p> <p>The WKBCH CI must provide the capability to access and present guide information as ASCII text documents. Also, the WKBCH CI must provide the ability for terminals with HTML viewers to access guide information in HTML format which includes graphics and hypertext. The displaying of guide information and viewing the documents to ensure they are in the appropriate format (i.e., HTML format and ASCII text) will verify this requirement.</p>
IMS-0420#A	<p>This requirement is verified through demonstration.</p> <p>The IMS on-line guide (documentation/reference material) shall provide or, where appropriate, contain references to such information as:</p> <ul style="list-style-type: none"> a. Documentation of processing algorithms used for EOS and other Earth science data products generated by the ECS. b. Results of science data quality assessments of EOS data c. Bibliography of published and unpublished literature (as available) derived from the project. d. Cross references between differing studies of the same data e. Other documents relevant to quality assessment of EOS data f. Product specifications g. Instrument specifications h. Summaries of data sets derived from observation logs i. Format options available for the given data set j. Subsetting, subsampling, and transformation options available for the given data set k. Inventory search options available for the given data set <p>The DDSRV CI must provide access to all supported documents formats and descriptive data. The viewing of Guide documentation for each of the listed items via the ECS Search and Other tool will verify this requirement.</p>
IMS-0530#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide document text search.</p> <p>The searching for guide information using a text string as the search criteria via the ECS Search and Order Tool will verify this requirement.</p>

IMS-0535#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall support hierarchical searching of suitably structured documents.</p> <p>The DDSRV CI must support storage, retrieval and searching of documents in HTML format. The search and retrieval of guide documents and verifying they are in HTML format will test this requirement.</p>			
<p>Test Inputs: Pull test data table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to a workstation: Enter user account & password.	
20	Expected Result: Operating system must come up.	
30	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool.	
40	Expected Result: The ECS Search and Order Tool screen must come up.	
50	Tester: Select the Search Screen button.	
60	Expected Result: The Search Screen is displayed.	
70	Tester: Select the search type - Guide and click on Source/Platform List button.	
80	Expected Result: The Valids list for Source/Platform is displayed.	
90	Tester: Select DMSP-F8 and select the OK button and initialize the execution of the search..	
100	Expected Result: The Guide Display screen is displayed with the list of guide documents that pertain to the search criteria.	
110	Tester: Select the Close button.	
120	Expected Result: The Search screen is displayed.	
130	Tester: Select the Text String field and type in "DMSP-F8" and Initialize the execution of the search.	
140	Expected Result: The Guide Display screen is displayed with the list of guide documents that pertain to the search criteria. Also, note the bibliographic references pertaining to the dataset.	
150	Tester: View some of the document(s) to observe some of the bibliographic information and some information about algorithms that can be used with the DMSP-F8 data.	
160	Expected Result: The chosen document is displayed.	
170	Tester: Note hyperlinks within documents, click on the hyperlinks to view other related text to other documents.	
171	Expected Result: The chosen document or link is displayed.	
180	Tester: When finish, select Close.	
190	Expected Result: Search screen is displayed.	
200	Tester: Initialize a guide search using the datasets: "AVHRR Pathfinder ", "TOMS Day Grids", and "DMSP F-10 SSM/I", AS the search criteria.	
210	Expected Result: The Guide Display screen is displayed with the list of guide documents that pertain to the search criteria.	

220	Tester: View the documents to ensure information pertaining to processing of algorithms used for EOS and other Earth science data products, cross references between differing studies of the same data, Instrument specifications, etc. that relate to datasets used in the search criteria is output. Also, view the documents to ensure they are in the appropriate format (i.e., HTML).	
230	Tester: Submit an order for some of the documents via FTP using the Search and Order Tool.	
240	Expected Result: V0 Gateway receives order from the Search and Order Tool and translates order from ODL and OODCE. V0 Gateway submits order to the SDSRV. SDSRV queues the order and updates SDSRV Order Status to QUEUED. V0 Gateway creates an order in the MSS database and initializes MSS Order Status to RECEIVED.	
250	Tester: Views SDSRV Order Status of QUEUED on the "request MainWindow" screen with the SDSRV filter and views details regarding order on the "RequestInfo" screen.	
260	Expected Result: V0 Gateway sends transaction progress to the Search and Order Tool.	
270	Tester: Views transaction progress on the Communication Status screen	
280	Expected Result: SDSRV retrieves order from queue, execute order and updates SDSRV Order Status to IN PROCESS and sends the order to Data Distribution (DDIST). DDIST Order Status Details updated with: Media Type, User ID, Destination, Number of Data Items, Distribution Size (# of bytes).	
290	Tester: Views DDIST Order Status of STAGING on the "Distribution Summary" screen and views DDIST Order Status Details on the "Distribution Request" screen.	
300	Expected Result: Using STMGT utilities, DDIST retrieves data from the archive (via AMASS) and place the data into Working Storage.	
310	Tester: Contacts GSFC DAAC User Services for status of order.	
320	Expected Result: DAAC User Services Representative receives the request for status of order.	
330	DAAC User Services Representative: Uses the Data Order Tracking Tool on the Release A ECS Desktop to query status of order.	
340	Expected Result: DDIST, via STMGT, copies selected data granules to Pull Storage; DDIST sends Email notification to user that order is available in Pull Storage.	
350	DAAC User Services Representative: FTPs files to local workstation.	

360	Expected Result: Modified FTP Server notifies STMGT that the files have been pulled.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.8 Inventory Search

TEST Procedure No.: A100110.080\$G	Date Executed:	Test Conductor:
Title: Inventory Search		
Objective: This test verifies that ECS has the capability to provide descriptions of specific observations or collections of observations of data (granules) that are available for request from a data archive. This capability enables the user to access inventory information that includes the attributes of the data that will help the user distinguish between granules of data so that decisions on which granules to request may be made.		
Requirements	Acceptance Criteria	
DADS2320#A	<p>This requirement is verified through demonstration.</p> <p>Each DADS shall send to the IMS, at a minimum, the following:</p> <ol style="list-style-type: none"> a. Metadata b. Documentation c. Product status dialog <p>The request and retrieval of metadata using the ECS Search and Order Tool inventory search will verify item 'a' and 'c'. Item 'b' was verified in tests A100110.060 and A100110.070.</p>	
IMS-0430#A	<p>This requirement is verified through analysis.</p> <p>The IMS shall maintain an on-line inventory with information that individually describes each granule of EOSDIS data, where granule refers to the minimum traceable logical unit of data stored in the archives, as defined by the instrument science team.</p> <p>The WKBCH CI must provide users a search and results interface to search for and view inventory information. The running of inventory searches via the ECS Search and Order Tool to access information on selected datasets and the viewing of the granules retrieved will verify this requirement.</p>	

IMS-0580#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide geographic and geophysical (e.g., ocean bathymetry surface features) overlays to aid in the selection of spatial data and to enhance the display of metadata.</p> <p>The WKBCH CI must provide the capability to display on a coverage map the geographic coverage of data granules. This requirement is verified by the tester using the ECS Search and Order Tool to display the geographic coverage of selected granules on a coverage map.</p>			
IMS-0610#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide the capability to search the data inventory which describes each granule of EOSDIS data.</p> <p>The WKBCH CI must provide users the capability to transparently search across any combination of data servers for stored EOSDIS data granules. The running of the inventory search via the ECS Search and Order Tool to search EOSDIS data will verify this requirement.</p>			
IMS-0640#A	<p>This requirement is verified through test.</p> <p>The IMS shall provide the capability to query geographic metadata by any of the following criteria at a minimum:</p> <ul style="list-style-type: none"> a. Geographic reference b. Data element content (as specified in metadata) c. Minimum bounding rectangle d. Point and radius e. Polygon f. Geographic name (based on a standard data base, such as USGS Geographic Names Information System) g. WRS h. Any combination of the above <p>The WKBCH CI must support a geographic reference criteria for geographic metadata, query of geographic metadata by data element content criteria specified in metadata, and a minimum bounding rectangle criteria for query of geographic metadata by text and geophysical input. The requirement is verified by using geographic information about selected datasets as the search criteria for an inventory search via the ECS Search and Order Tool. Only a, b, and c are implemented in Release A. Part d-h is not tested.</p>			
<p>Test Inputs: Pull test data table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to a workstation: Enter user account & password.	
20	Expected Result: Operating system must come up.	
30	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool.	
40	Expected Result: The ECS Search and Order Tool screen must come up.	
50	Tester: Select the Search Screen button.	
60	Expected Result: The Search Screen is displayed.	
70	Tester: Select the search type - Inventory.	
71	Expected Result: The search type is initialized to inventory.	
80	Tester: Click on the Parameters List button.	
90	Expected Result: The Valids list for Parameters is displayed.	
100	Tester: Select "ANTENNA TEMPERATURE", "OZONE", and "RADIANCE" parameters and then select the OK button.	
110	Expected Result: The Valids list for Parameters is closed.	
120	Tester: Select the Number of Granules returned per Dataset. Reduce the number of granules to 30 (from the default of 100).	
130	Expected Result: The number of granules is changed to 30.	
140	Tester: Select the Geographic Information area and select the None button.	
150	Expected Result: A menu is displayed.	
160	Tester: Select Point on the menu and enter "53" in the Latitude field and "170" in the Longitude" field and execute the search.	
170	Expected Result: The Communications Status screen is displayed. The Data Server assigns a session ID and logs the initiation of the session. The Data Server logs and queues the search request to create a working collection and searches the Metadata Database in accordance with the search criteria. Notify when the search is completed.	
180	Tester: Select the Data button in the GSFC row.	
190	Expected Result: The Inventory Results screen is displayed.	
200	Tester: Select "AVHRR-LAC" with Latitude = 80.57, Longitude = 166.82 and any start date and time by clicking on the granule.	
201	Expected Result: Search is initialized to AVHRR-LAC with Latitude =80.57, Longitude = 166.82 and the specified date and time.	
210	Tester: Select the granule for Detail Info and select the selection list button.	
220	Expected Result: Observe the granule selected.	

230	Tester: Select the Inventory Results button, Goto Detailed Information For Granules.	
240	Expected Result: The Detailed Inventory Results screen is displayed. Observe the detailed granule information for the selected granule.	
250	Tester: Select Close.	
260	Expected Result: The Detailed Inventory Results screen closes and the Inventory result screen is displayed.	
270	Tester: View the geographic coverage of a granule by selecting Coverage Map.	
280	Expected Result: A two-dimensional graphical representation of the geographic coverage of the selected granule(s) is displayed.	
290	Tester: Select some of the plot options on the Coverage Map to manipulate the geographic area.	
300	Expected Result: The Map is adjusted according to user selections.	
310	Tester: Re-initialize an inventory search using "SSM/I" as keyword for the search criteria and enter "rectangle" as the geographic information. The SSM/I gridded brightness temperatures is entered to span a 5 year period, 1987-1991 (North of 30 degrees N.).	
320	Expected Result: The search is initialized, the Data Server logs and queues subsequent search requests to identify high interest granules and searches the Metadata Database in accordance with the search criteria. Information on the dataset is displayed.	
330	Tester: Select the Coverage Map to view some of the granules geographic coverage.	
340	Expected Result: A two-dimensional graphical representation of the geographic coverage of the selected granule(s) is displayed.	
350	Tester: Plot a lat/lon grid on the map and select some political boundaries and rivers to overlay on the map.	
360	Expected Result: The Coverage Map is enhanced with an overlay of the specified political boundaries and rivers on the original Map.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.9 Browse

TEST Procedure No.: A100110.090\$G		Date Executed:		Test Conductor:	
Title: Browse					
Objective: This test verifies that ECS provides the user with the capability to locate and retrieve reduced resolution images of data products as an aid to data selection by using the ECS Search and Order Tool and EOSView. This test verifies the two browse methods used with the ECS Search and Order Tool: Local (FTP) Browse and Integrated Browse.					
Requirements			Acceptance Criteria		
IMS-0690#A		<p>This requirement is verified through test.</p> <p>The IMS shall provide the capability to visualize pre-order data products and metadata (e.g. coverage maps, summary data) to facilitate the data selection and ordering process.</p> <p>The WKBCH CI must provide users the capability to browse data in ECS supported visualization formats in a window during the data selection and acquisition process. This requirement is verified by the tester initializing a search for selected datasets. When the datasets are retrieved, the user chooses to view the browse image of the data via EOSView of the ECS Desktop.</p>			
SDPS0031#A		<p>This requirement is verified through test.</p> <p>The SDPS shall generate browse data and metadata for routing to the requesting users.</p> <p>The tester will initialize EOSView to browse metadata in accordance to the browse criteria.</p>			
Test Inputs: Pull test data table is still being updated.					
Data Set Name	Data Set ID	File Name	Description	Version	

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to a workstation: Enter user account & password.	
20	Expected Result: Operating system must come up.	
30	Tester: Bring up the ECS Desktop and initialize the ECS Search and Order Tool.	
40	Expected Result: The ECS Search and Order Tool screen must come up.	
50	Tester: Select the Search Screen button.	
60	Expected Result: The Search Screen is displayed.	
70	Tester: Select the search type - Inventory.	
71	Expected Result: The search type is initialized to inventory.	
80	Tester: Click on the Parameters List button.	
90	Expected Result: The Valids list for Parameters is displayed.	
100	Tester: Select "ANTENNA TEMPERATURE", "OZONE", and "RADIANCE" parameters and select Level 3 SSM/I gridded brightness temperature browse data, then select the OK button.	
110	Expected Result: The Valids list for Parameters is closed.	
120	Tester: Select the Number of Granules returned per Dataset. Reduce the number of granules to 10 (from the default of 100).	
121	Expected Result: The number of granules is now set to 10.	
130	Tester: Select the Geographic Information area and select the None button.	
140	Expected Result: A menu is displayed.	
150	Tester: Select Point on the menu and enter "53" in the Latitude field and "170" in the Longitude field.	
160	Tester: Initialize the execution of the search.	
170	Expected Result: The Communications Status screen is displayed. The search message is going out to all of the data centers that hold relevant data or that were specified in the search. Monitor until complete.	
180	Tester: Select the Data button in the GSFC row.	
190	Expected Result: The Inventory Results screen is displayed.	
200	Tester: Select "AVHRR-LAC" with Latitude = 80.57, Longitude = 166.82 and any start date and time by clicking on the granule.	
	INTEGRATED BROWSE	
210	Tester: Observe the granules displayed and note those granules which indicate whether a browse product exist under the "Browse Available" field. Mark the granule for Integrated Browse under the Browse (B) field and select the selection list button.	

220	Expected Result: Observe the granule selected, the "N" under Browse changes to "IB" (for integrated browse).	
230	Tester: Select the Inventory Results button, Goto Detailed Information for Granules.	
240	Expected Result: The Detailed Inventory Results screen is displayed. Observe the detailed granule information for the selected granule. Note the "Browse Availability" to ensure granule is marked as integrated browse.	
250	Tester: Select Close.	
260	Expected Result: The Detailed Inventory Results screen closes and the Inventory Result screen is displayed.	
270	Tester: Select Goto Browse.	
280	Expected Result: The Browse Request screen is displayed.	
290	Tester: When the search has completed, select the Image button for one of the granule.	
300	Expected Result: The Integrated Browse screen is displayed. Observe the browse image.	
310	Tester: Close the Integrated Browse screen.	
320	Expected Result: The Integrated Browse Screen is closed.	
330	Tester: Close the Browse Request screen.	
340	Expected Result: The Browse Request screen is closed and the Inventory Results screen is displayed.	
	LOCAL (FTP) BROWSE	
350	Tester: Return to the Communication Status screen and select the Data button for one of the DAACs that contain the Level 3 SSM/I gridded temperature browse data.	
360	Expected Result: The user is returned to the Inventory Results screen.	
370	Tester: Observe the granules displayed and note the Level 3 SSM/I data granules which indicate whether a browse product exist under the "Browse Available" field. Mark the granule for FTP Browse under the Browse (B) field and select the selection list button.	
380	Expected Result: Observe the granule selected, the "N" under Browse changes to "FB" (for FTP browse).	
390	Tester: Select the Inventory Results button, Goto Detailed Information for Granules.	
400	Expected Result: The Detailed Inventory Results screen is displayed. Observe the detailed granule information for the selected granule. Note the "Browse Availability" to ensure granule is marked as FTP browse.	
410	Tester: Select Close.	
420	Expected Result: The Detailed Inventory Results screen closes and the Inventory Result screen is displayed.	
430	Tester: Select Goto Browse.	
440	Expected Result: The Browse Request screen is displayed.	
450	Tester: Select the FTP browse for one of the granule.	

460	Expected Result: The FTP Browse screen is displayed and a the granule unique identifier information is sent to DAAC.	
470	Tester: Observe FTP Browse screen to ensure acknowledgment message indicating the request for browse data was received by the DAAC.	
480	Expected Result: The acknowledgment message is received and it will instruct the user that they will be receiving detail instructions for browse data access and point of contact information via e-mail as soon as the browse product is on-line and ready for transfer.	
490	Tester: After the browse data is received, select the Browse Status screen.	
500	Expected Result: The Browse Status screen is displayed listing the browse product(s) that have arrived.	
510	Tester: Select the Image Button for one of the granule.	
520	Expected Result: The FTP Browse Product screen is displayed. Observe the browse image.	
530	Tester: Exit the ECS Search and Order Tool.	
540	Expected Result: The ECS Search and Order Tool is disabled.	
	Browse via EOSView	
560	Tester: Ensure that some HDF files exist. (The HDF files will specified as they become available)	
570	Expected Result: The HDF files exist in a directory specified by the tester.	
580	Tester: Initialize EOSView via the ECS Desktop	
590	Expected Result: The EOSView Main Window is displayed.	
600	Tester: Select "Open" from the File pulldown menu.	
610	Expected Result: A file selection dialog is displayed.	
620	Tester: Select a HDF file.	
630	Expected Result: The EOSView Image Display Window is displayed.	
640	Tester: View the contents of the selected HDF file.	
650	Expected Result: The image must be displayed.	
660	Tester: Run through more EOSView options with some of the HDF files.	
670	Expected Result: All options must function as specified.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.10 Information Search

TEST Procedure No.: A100110.100\$G	Date Executed:	Test Conductor:
Title: Information Search		
Objective: This test verifies that ECS provides the user with the capability to search for data utilizing more complex search criteria (i.e., combination of metadata attributes, use of relational operators, minimum/maximum ranges, etc.) and functionality (i.e., multiple simultaneous sessions, reuse of information selected in prior searches for subsequent service requests, etc.) available in Release A. These more complex searches entail more advance utilization of the ECS user services: inventory search, directory search, guide search, and browse search. During this test, the ECS data servers are accessed when querying for data.		
Requirements	Acceptance Criteria	
IMS-0150#A	<p>This requirement is verified through analysis.</p> <p>The IMS shall supply a uniform user interface for access to the following at a minimum:</p> <ul style="list-style-type: none"> a. Heterogeneous data sets b. Communications networks c. Data bases that are geographically dispersed d. Multi-disciplined directories and inventories <p>This requirement is verified by the user ensuring that the interface for access to items a-d conform to the ECS style guidelines. These guidelines will be retrieved and reviewed by the tester via EDHS.</p>	
IMS-0190#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide the capability to save information selected in prior metadata searches for use in subsequent IMS service requests, either in the current session or in future sessions.</p> <p>This requirement is verified by the tester issuing search requests, saving the requests, rerunning saved search requests, modifying saved requests and rerunning them via the ECS Search and Order Tool.</p>	

IMS-0500#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide access to information to include at a minimum:</p> <ul style="list-style-type: none"> a. Metadata b. Spacecraft housekeeping and ancillary data information. f. Processing schedules g. Documentation i. Science Processing Library software j. Documentation on data format and metadata standards. <p>The WKBCH CI must provide users a search and results interface to search for and view inventory information. This requirement is verified by the user initializing searches for data pertaining to items a, b,f,g,i, and j via the ECS Search and Order Tool. Items c,d,e, and h are not in Release A.</p>
IMS-0550#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECS's:</p> <ul style="list-style-type: none"> a. Architecture b. Data Base management system c. Date Base structure d. Query languages e. Data formats <p>The WKBCH CI must provide the user the capability to identify data and services produced by ECS. The tester will initialize the ECS Desktop and bring up the ECS Search and Order Tool to search for ECS data.</p>
IMS-0570#A	<p>This requirement is verified through demonstration.</p> <p>The IMS shall provide an incremental search capability.</p> <p>The WKBCH CI must provide users the capability to refine and resubmit a search request with additional deleted or changed search criteria. This requirement is verified by the tester saving, modifying, and resubmitting search requests.</p>
IMS-0630#A	<p>This requirement is verified through test.</p> <p>The IMS shall provide the capability to select metadata for retrieval by:</p> <ul style="list-style-type: none"> a. Boolean operators b. Relational operators c. Attribute values d. Search strings e. Combinations thereof <p>The WKBCH CI must provide geographical aids to assist users in formulating search requests. This requirement is verified by the tester submitting search requests that include items a-e in the search criteria to locate geographic metadata via the ECS Search and Order Tool.</p>

IMS-0650#A	<p>This requirement is verified through test.</p> <p>The IMS shall query non-geographic metadata by any of the following criteria at a minimum:</p> <ol style="list-style-type: none"> a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above. <p>This requirement is verified by the tester submitting search requests that include items a-h in the search criteria to locate non-geographic metadata via the ECS Search and Order Tool.</p>
IMS-0660#A	<p>This requirement is verified through test.</p> <p>The IMS shall provide inventory metadata search based on any combination of the core (Table C-10, Appendix C) and where applicable dataset-specific (Table C-11, Appendix C) inventory metadata attributes and geophysical parameters at a minimum.</p> <p>This requirement is verified by the tester initializing inventory searches based on Core Inventory metadata, Product Specific metadata, and a combination of Core Inventory and Product Specific metadata via the ECS Search and Order Tool.</p>
IMS-0665#A	<p>This requirement is verified through test.</p> <p>The IMS shall provide informational messages to indicate that a query is being executed, and shall provide the capability for the user to abort any time-intensive operations.</p> <p>The WKBCH CI must provide information messages to users to indicate that a query is being executed. Periodic, asynchronous status messages to the client during the execution of a search request must be provided by the SDSRV CI. This requirement is verified by the tester initializing queries and monitoring the output of informational status messages. The tester will also abort a search after it has been running for a certain amount of time.</p>
IMS-0930#A	<p>This requirement is verified through test.</p> <p>The IMS shall provide the capability to search metadata holdings for the purpose of identifying the product desired and the input data to be processed.</p> <p>The WKBCH CI must provide users a search and results interface to search for and view inventory information. This requirement is verified by the tester doing a search on metadata holdings for a desired product using the ECS Search and Order Tool.</p>

IMS-1730#A	<p>This requirement is verified through test.</p> <p>The IMS shall provide the capability to produce reports that trace the data product back to the source instrument.</p> <p>The DDIST CI must provide operations staff with the capability to display the Distribution Activity Log. The tester initializes Inventory searches via the ECS Search and Order Tool based on a combination of the Core Inventory Metadata and Product Specific Metadata. Then the tester will check the Distribution Activity Log to ensure it contains processing information.</p>			
IMS-1740#A	<p>This requirement is verified through test.</p> <p>The IMS shall produce cross reference reports (by user and data set) of processing performed, data sets produced, supporting data used, and data recipient.</p> <p>The DDIST CI must provide operations staff with the capability to display the Distribution Activity Log. The tester initializes Inventory searches via the ECS Search and Order Tool based on a combination of the Core Inventory Metadata and Product Specific Metadata. The tester will view the Distribution Activity Log to ensure it contains processing information.</p>			
<p>Test Pull test data table is still being updated.</p> <p>Inputs:</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to a workstation: Enter user account & password.	
20	Expected Result: Operating system must come up.	
30	Tester: Initialize the ECS Desktop and bring up the ECS Search and Order Tool.	
40	Expected Result: The ECS Search and Order Tool screen must come up.	
50	Tester: Select the Search Screen button.	
60	Expected Result: The Search Screen is displayed.	
70	Tester: Select the "Guide" Search type.	
80	Expected Result: The system allows the user to access the Guide search from three methods: Guide type, Guide Info via the valids list, and item via free text.	
90	Tester: Initialize a free text search by entering "PR" and "Continental United States and coastal areas" in the text field as the search criteria for Guide information.	
100	Expected Result: Informational messages indicating that a query is in process are output and the Guide Display Screen is displayed with a list of all guide documents that pertain to the search criteria.	
110	Tester: Select each document and view the parameter level descriptions until the user find some parameters that are useful.	
120	Expected Result: Each selected document is displayed.	
130	Tester: Select some of the displayed parameters.	
131	Expected Result: The parameters from step 130 are now selected.	
	MULTIPLE SIMULTANEOUS SESSIONS	
140	Tester: Select the GoTo menu, select Guide.	
150	Expected Result: A cascading menu is displayed.	
160	Tester: Select "Dataset Information for Guide document" to initialize a directory search on the selected parameters at all valid data centers.	
170	Expected Result: The communication status screen is displayed showing status of the search.	
180	Tester: When the search is complete, select the Data button.	
190	Expected Result: The Directory Results screen is displayed.	
200	Tester: Observe the directory information and select the Count button for one of the selected parameter(s).	
210	Expected Result: Everything pertaining to the parameter is highlighted.	
220	Tester: Select all desired parameter(s) to do an inventory search on by highlighting them.	

230	Expected Result: The parameters are highlighted.	
240	Tester: Select the Screen Functions menu.	
250	Expected Result: A pull down menu is displayed.	
260	Tester: Select Inventory Information.	
270	Expected Result: The system prompts the user for geographic information because it is a required field in an inventory search.	
280	Tester: Enter the geographic information and any additional search criteria, then select the "Execute Search" button.	
290	Expected Result: The Communications Status screen is displayed to inform the user of the searching and network activity. Observe the search until complete.	
300	Tester: Once the search is complete, select the Data button to view the granule level information received for each dataset.	
310	Expected Result: The Inventory Results screen is displayed, observe the dataset level information and granule summary information for each parameter(s).	
320	Tester: Observe the granules displayed and note those granules which indicate whether a browse product exist under the "Browse Available" field. Mark the granule for Integrated Browse under the Browse (B) field and select the selection list button.	
330	Expected Result: Observe the granule selected, the "N" under Browse changes to "IB" (for integrated browse).	
340	Tester: Select the Inventory Results button, Goto Detailed Information for Granules.	
350	Expected Result: The Detailed Inventory Results screen is displayed. Observe the detailed granule information for the selected granule. Note the "Browse Availability" to ensure granule is marked as integrated browse.	
360	Tester: Select Close.	
370	Expected Result: The Detailed Inventory Results screen closes and the Inventory Result screen is displayed.	
380	Tester: Select Goto Browse.	
390	Expected Result: The Browse Request screen is displayed.	
400	Tester: When the search has completed, select the Image button for one of the granule.	
410	Expected Result: The Integrated Browse screen is displayed. Observe the browse image.	
420	Tester: View the Guide, Directory, Inventory, and Browse results by switching back and forth to each respective search results.	
430	Expected Result: The system allows the user to transition back and forth between guide, directory, inventory and browse information.	
440	Tester: Close out all displayed screens until the Welcome screen is displayed.	
450	Expected Result: All screens are closed and the Welcome screen is displayed.	

INCREMENTAL SEARCH		
460	Tester: Select the Search Screen button.	
470	Expected Result: The Search screen is displayed.	
480	Tester: Select Inventory under search type, select AVHRR and CDTOMS2 datasets under the dataset id , select rectangle and enter a value for Nlatitude, Slatitude, Wlongitude, and Elongitude under the Geographic Area.	
490	Expected Result: The selected search criteria is displayed.	
500	Tester: Save the criteria by selecting the Save Search button.	
510	Expected Result: A pop-up window is displayed and the user is prompted to enter a name for the search criteria.	
520	Tester: Enter the name: "Atestcri" and then select Save button.	
530	Expected Result: The search criteria is saved as Atestcri and the user is returned to the Search screen.	
540	Tester: Initialize the inventory search by selecting the Execute button.	
550	Expected Result: The Communication Status screen is displayed to monitor search and network status.	
560	Tester: Monitor until search is complete, Note DAAC(s) where datasets were retrieved and Granule Count from each DAAC(s) and select the Data button to view the results of the search.	
570	Expected Result: The Inventory Results screen is displayed with a list of all granule received.	
580	Tester: Close the Inventory Results screen.	
590	Expected Result: The Inventory Results screen is closed and the user is returned to the communication status screen.	
600	Tester: Select the Search Screen.	
610	Expected Result: The Search screen is displayed.	
620	Tester: Select the Retrieve Search button.	
630	Expected Result: A window is displayed with all the search files that have been stored.	
640	Tester: Select the file, Atestcri.	
650	Expected Result: The search criteria is retrieve from the file and displayed on the Search screen.	
660	Tester: Change the geographic information to be four corners, enter different values for Nlatitude, Slatitude, Wlongitude, and Elongitude under the Geographic Area.	
670	Expected Result: The search criteria is displayed and changes to the geographical information is stored.	
680	Tester: Initialize the search by selecting the Execute Search button.	
690	Expected Result: The Communication Status screen is displayed with status of the search and network connections.	
700	Tester: Observe the search, wait 1 minute, then select the Abort Search button.	
710	Expected Result: The search is aborted and the abort is displayed on the Communication status screen.	

720	Tester: Close the Communication status screen.	
730	Expected Result: the Communication status screen is closed and the user is returned to the Search Screen.	
	INFORMATION ACCESS	
740	Tester: Initialize a search for Spacecraft housekeeping and ancillary data. (The data will be specified when data is identified for V0 migration).	
750	Expected Result: The search is initialize and the specified data is retrieved.	
760	Tester: Initialize a search for Processing Schedules. (The data will be specified when data is identified for V0 migration).	
770	Expected Result: The search is initialize and the specified data is retrieved.	
780	Tester: Initialize a search for Science Processing Library software. (The data will be specified when data is identified for V0 migration).	
790	Expected Result: The search is initialize and the specified data is retrieved.	
800	Tester: Initialize a search for Documentation on data format and metadata standards. (The data will be specified when data is identified for V0 migration).	
810	Expected Result: The search is initialize and the specified data is retrieved.	
820	Tester: Initialize an inventory metadata search based on a combination of metadata attribute(s) (one as specified in Table C-10, Appendix C in document 423-41-02) and a combination of product specific metadata attribute(s) (one as specified in Table C-11, Appendix C).	
830	Expected Result: The search is initialize and the specified data is retrieved.	
	METADATA RETRIEVAL CRITERIA	
840	Tester: Initialize a search of some metadata using some Boolean operator(s) in the search criteria. (The specific metadata and Boolean operator(s) will be specified as this procedure matures).	
850	Expected Result: The search is initialized and the data is retrieved and filtered according to the boolean operator(s).	
860	Tester: Initialize a search of some metadata using some relational operator(s) in the search criteria. (The specific metadata and relational operator(s) will be specified as this procedure matures).	
870	Expected Result: The search is initialized and data is retrieved and filtered according to the relational operator(s).	
880	Tester: Initialize a search of some metadata using a combination of some attribute value(s) with some relational operator(s) in the search criteria. (The specific metadata attributes will be specified as this procedure matures).	
890	Expected Result: The search is initialized and the data is retrieved and filtered according to the combination of the attribute value(s) and relational operator(s).	

900	Tester: Initialize a search of some metadata using a Character set (string) and Character range in the search criteria. (The specific metadata will be specified as this procedure matures).	
910	Expected Result: The search is initialized and the data is retrieved and filtered according to character set and range.	
920	Tester: Initialize a search of some metadata using Wildcard constructs in the search criteria. (The specific metadata will be specified as this procedure matures).	
930	Expected Result: The search is initialized and the data is retrieved and filtered according to the wildcard constructs in the search criteria.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.11 Product Order

TEST Procedure No.: A100110.110\$G	Date Executed:	Test Conductor:
Title:	Product Order	
Objective:	This test verifies that ECS provides the user with the capability to view information pertaining to orderable data products, and then formulate a request which is forwarded to the relevant archive for order processing (one-time orders, standing orders, reprocessing orders.)	
Requirements	Acceptance Criteria	
DADS0110#A	<p>This requirement is verified by test.</p> <p>Each DADS shall receive from the IMS, at a minimum, the following:</p> <ol style="list-style-type: none"> Documents Product status dialog Product order <p>This requirement is verified by the tester entering a search request for data via the ECS Search and Order Tool and then submitting a product request for that data.</p>	
DADS0498#A	<p>This requirement is verified by test.</p> <p>Each designated DADS shall receive standing and retrospective product orders from the IMS.</p> <p>This requirement is verified by the tester submitting standing and retrospective orders via the ECS Search and Order Tool, and then confirming that the orders have been received.</p>	

DADS0500#A	<p>This requirement is verified by test.</p> <p>Each DADS shall receive changes to standing orders from the IMS.</p> <p>This requirement is verified by the tester making changes to the distribution of standing orders via the ECS Search and Order Tool, and then confirming that the orders have been received.</p>
DADS0525#A	<p>This requirement is verified by test.</p> <p>Each DADS shall accept updates/cancellations of data order requests.</p> <p>This requirement is verified by the tester making updates to a product order and then submitting the order via the ECS Search and Order Tool. Product orders can only be cancelled by the operations staff in Release A.</p>
DADS0570#A	<p>This requirement is verified by test.</p> <p>Each DADS shall verify product orders from the IMS.</p> <p>The tester must verify via the ECS Search and Order Tool that a User ID and other required processing information is included in the product request.</p>
DADS0600#A	<p>This requirement is verified by test.</p> <p>Each DADS shall accept requests from the IMS to distribute data archived in the DADS to requesting users.</p> <p>This requirement is verified by the tester submitting product order requests via the ECS Search and Order Tool and receiving the order as specified in the request.</p>
DADS0660#A	<p>This requirement is verified by test.</p> <p>Each DADS shall maintain a database of orders which shall include at a minimum: priorities, distribution directions, and all other details necessary to process orders including standing and multi-DADS orders.</p> <p>This requirement is verified by the tester submitting product order requests via the ECS Search and Order Tool, and then generating a list of all active product order requests within the data server.</p>
DADS0690#A	<p>This requirement is verified by test.</p> <p>Each DADS shall support the prioritized retrieval and delivery of data based on the priority information specified in the data retrieval request.</p> <p>This requirement is verified by the tester submitting product orders via the ECS Search and Order Tool; some with a higher priority so that the tester can subsequently check the priority information.</p>

DADS0940#A	<p>This requirement is verified by test.</p> <p>Each DADS shall send distribution status to the IMS in response to distribution status requests from the IMS.</p> <p>The tester must check the distribution status messages when a product order is submitted to make sure that the updates are correct.</p>
DADS0960#A	<p>This requirement is verified by test.</p> <p>Each DADS shall automatically send data distribution status to the IMS upon completion of the distribution process.</p> <p>When the product is made available or produced, a notification is received by the tester via the ECS Search and Order Tool; the tester must then check these statuses for accuracy.</p>
DADS1010#A	<p>This requirement is verified by test.</p> <p>Each DADS shall send to the requesting PGS or IMS, staging status of requests for retrieval of data products.</p> <p>The SDSRV CI shall provide Request Status to a client, concerning pending Services Requests, as specified in Appendix A of the current version of 304-CD-002 for Release A. This requirement must be verified by the tester obtaining the status of a product order via the ECS Search and Order Tool, and the tester must subsequently check these statuses for accuracy.</p>
DADS1020#A	<p>This requirement is verified by test.</p> <p>Each DADS shall generate data retrieval status to acknowledge the receipt of a product order. The data retrieval status shall indicate the acceptance or rejection of the request. If a retrieval is rejected, the status shall contain a reason for rejection (e.g., distribution parameters missing, data not present or unreadable).</p> <p>Data retrieval acknowledgments are obtained by the tester via the ECS Search and Order Tool; these must indicate if the product order request was accepted or rejected.</p>
DADS1030#A	<p>This requirement is verified by test.</p> <p>Each DADS shall generate data distribution status to monitor the progress of the distribution process.</p> <p>The DDIST CI shall provide the capability for operations staff to list Distribution Requests by whether it is an electronic or media distribution request, and according to the request identifier or status. The tester will monitor the product order status via the ECS Search and Order Tool.</p>

DADS1110#A	<p>This requirement is verified by test.</p> <p>Each DADS shall maintain a data distribution log.</p> <p>The tester must check the Distribution Activity Log and ensure all product order status messages are logged.</p>
DADS1806#A	<p>This requirement is verified by test.</p> <p>Each DADS shall have the capability of retrieving any data granule stored in the archives.</p> <p>This requirement must be verified by the tester searching for and retrieving stored data via the ECS Search and Order Tool.</p>
DADS2160#A	<p>This requirement is verified by test.</p> <p>Each DADS shall maintain a list/schedule of standing orders.</p> <p>The SDSRV CI must allow operations staff to set a limit as to the number of service requests to be queued for processing, as well as provide the capability to queue them before they are processed. The tester must ensure that orders are queued up before execution and then view the list/schedule of the standing orders.</p>
DADS2170#A	<p>This requirement is verified by test.</p> <p>Each DADS shall maintain a list/schedule of retrospective orders.</p> <p>The SDSRV CI must allow operations staff to set a limit as to the number of service requests to be queued for processing, as well as provide the capability to queue them before they are processed. The tester must ensure that orders are queued up before execution and then view the list/schedule of the retrospective orders.</p>
DADS2190#A	<p>This requirement is verified by test.</p> <p>Each DADS shall maintain a list of products which could not be delivered electronically (e.g., workstation off-line).</p> <p>If the DDIST CI is unable to distribute the data electronically, the user identifier, list of data, and the reason for failure will be logged and the user must be sent a notification. The tester must ensure that he/she is notified when a product order could not be delivered electronically via the ECS Search and Order Tool.</p>

DADS2370#A	<p>This requirement is verified by test.</p> <p>Each DADS shall send to the user, at a minimum, the following:</p> <ul style="list-style-type: none"> a. L0-L4 b. Special products (L1-L4) c. Metadata d. Ancillary data e. Calibration data f. Correlative data g. Documents h. Algorithms i. Planning and scheduling information <p>The DDSRV CI must provide documents to the requesting agencies. The tester must request data pertaining to items a-i to be sent via the ECS Search and Order Tool.</p>
DADS2410#A	<p>This requirement is verified by test.</p> <p>Each DADS shall distribute data from the archive in response to receipt of a product order.</p> <p>The tester must ensure that the product order request is sent and the product is retrieved via the ECS Search and Order Tool as specified in the product order request.</p>
DADS2430#A	<p>This requirement is verified by test.</p> <p>Each DADS shall be capable of distributing any data granule stored in the archive.</p> <p>Product order requests are processed and the product is retrieved as specified in the product request.</p>
DADS2460#A	<p>This requirement is verified by test.</p> <p>Each DADS shall have a manual override function capable of altering the priority of a distribution request.</p> <p>This requirement must be verified by the tester changing the priority status of some distribution requests manually.</p>
DADS2480#A	<p>This requirement is verified by test.</p> <p>Each DADS shall distribute data based upon entries in the standing and the retrospective order distribution list.</p> <p>The tester must ensure that product orders are processed according to their priority on the order distribution list.</p>

EOSD1720#A	<p>This requirement is verified by test.</p> <p>ECS elements shall receive from the ECS user community the following types of data requests at a minimum:</p> <ul style="list-style-type: none"> b. Data Distribution Requests c. Reprocessing Requests <p>This requirement must be verified by the tester submitting product order requests and reprocessing requests via the ECS Search and Order Tool.</p>
EOSD1740#A	<p>This requirement is verified by test.</p> <p>ECS elements shall send the following types of data at a minimum to the ECS user community:</p> <ul style="list-style-type: none"> a. Metadata b. Browse data c. Science data <p>The tester must initialize searches for the data listed in items a-c and submit an order for some of the retrieved data.</p>
IMS-0740#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide the capability for users to generate and update requests for one-time orders or standing orders for the DADS to distribute DADS archive holdings to include, at a minimum, Standard Products, Standard Product software, spacecraft housekeeping and ancillary data.</p> <p>The tester must ensure that the generation of requests for one-time and standing orders via the ECS Search and Order Tool is accurate to verify this requirement. Standard Product software will not be distributed in Release A.</p>
IMS-0760#A	<p>This requirement is verified by test.</p> <p>The IMS shall access distribution criteria for each data product and data product software and compare the distribution criteria to the requester's data access rights to verify that the data and software can be distributed as requested.</p> <p>The DDIST CI must validate each electronic and media distribution request, and verify that the format conforms to the one specified in Appendix A of the current version of 304-CD-002 for Release A. The tester will use the product order option to verify that the data and software are distributed correctly via the ECS Search and Order Tool.</p>
IMS-0780#A	<p>This requirement is verified by test.</p> <p>The IMS shall accept and validate from the ECS users, IPs, ADCs, and ODCs requests for ECS archival data products.</p> <p>This requirement is verified by the tester submitting product order requests via the ECS Search and Order Tool. ODCs are not part of Release A.</p>

IMS-0810#A	<p>This requirement is verified by test.</p> <p>The IMS shall prepare, for output to the DADS, product orders to retrieve specified data from the archive and distribute it, which contains the following information at a minimum:</p> <ol style="list-style-type: none"> a. Requester identification b. Data type c. Data set identifier e. Data formats f. Distribution instructions, including media requirements g. Request priority h. Suggested earliest start time i. Suggested latest completion time <p>The WKBCH CI must provide users the capability to specify the content of the data requests. This requirement is verified by the tester specifying the contents of the product order request via the ECS Search and Order Tool.</p>
IMS-0820#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide to the user product order status information from the DADS to confirm or reject an order, which contains the following information at a minimum:</p> <ol style="list-style-type: none"> a. Requester identification b. Request identification c. Request status d. If rejection, then the reason for the rejection <p>When the tester submits a product order request via the ECS Search and Order Tool, a product order status message comes up, indicating if the order was accepted or rejected. The tester will then check the status information to ensure it includes items a-d.</p>
IMS-0990#A	<p>This requirement is verified by test.</p> <p>The IMS shall determine if necessary lower level products exist for processing of the requested data product.</p> <p>The SDSRV CI must respond to a query with a null result set if no products in the inventory meet the specified criteria. The tester submits a search criteria for a product via the ECS Search and Order Tool. If a match is not found for the criteria, the software outputs a message indicating that the product is not found</p>

IMS-1000#A	<p>This requirement is verified by test.</p> <p>The IMS shall prepare, for output to the PGS, the Product Processing Order for specifying processing and data to be used in generating a product, which shall contain the following information at a minimum:</p> <ol style="list-style-type: none"> a. Identification of the product(s) to be generated b. Identification of the expected time/time window of receipt of input products, and ancillary data c. Product processing priority d. Destination(s) of product output e. Suggested earliest start time f. Suggested latest completion time <p>The PLANG CI must accept priority production requests for the generation of specific data products, as well as data products with associated time windows that will be routinely generated. The tester submits a product order that contains items a-f via the ECS Search and Order Tool.</p>
IMS-1005#A	<p>This requirement is verified by test.</p> <p>The IMS shall forward, to the appropriate DADS, Product Orders for distribution of the products generated as a result of the Product Processing Order.</p> <p>The DDIST CI shall accept electronic or media distribution requests. The product order submitted by the tester via the ECS Search and Order Tool is distributed as specified in the order.</p>
IMS-1060#A	<p>This requirement is verified by test.</p> <p>The IMS shall maintain a cross reference of processing performed, data sets produced, supporting data used, and data recipient.</p> <p>The SDSRV CI must log the processing performed, that data products produced, any supporting data used, and the recipient of the data for each data request. When the processing of a product order is logged, the tester must check the log for the above information pertaining to a specific order.</p>
IMS-1080#A	<p>This requirement is verified by test.</p> <p>The IMS shall accept requests for acquisition of data to be processed one time or as standing orders.</p> <p>This requirement must be verified by the tester submitting product orders as one-time orders and as standing orders via the ECS Search and Order Tool, and ensuring that these requests are accepted by the system.</p>

IMS-1280#A	<p>This requirement is verified by test.</p> <p>The IMS shall send a product order, priority, and suggested start time and completion time to the ECS elements responsible for processing and distributing a product.</p> <p>The DDIST CI shall accept electronic or media distribution requests. This requirement must be verified by the tester submitting product order requests, priority, start and completion times via the ECS Search and Order Tool, and ensure that the responsible parties process the appropriate information..</p>
IMS-1300#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall be capable of responding to user inquiries for status of user-initiated requests, and user request history.</p> <p>The SDSRV CI must provide the capability to list and status service requests initiated by a user. The tester must contact the operations/testers services to receive status of a product order request via the ECS Search and Order Tool.</p>
IMS-1310#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide the capability to accept, from product requesters, product distribution status requests, retrieve the request status, and display the status to the requester for an ECS, ADC, or ODC data product.</p> <p>This requirement must be verified by the tester contacting the operations/users services to receive status of a product order request. ODCs are not part of Release A.</p>
IMS-1646#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide to the SMC a record of data orders for the purposes of maintaining a full and complete history of all data orders.</p> <p>This requirement must be verified by the tester reviewing the Distribution Activity Log to ensure all product orders submitted were recorded.</p>

PGS-0160#A	<p>This requirement is verified by test.</p> <p>The PGS shall receive standing orders, changes to standing orders, and product requests from the IMS.</p> <p>Under the current architecture, PLS (PGS) does not receive any product generation requests from external subsystems. Product requests are entered via PLS (PGS) interface. The tester must submit product order requests and changes to the request for standing orders via the ECS Search and Order Tool to test this requirement.</p>			
<p>Test Inputs: Pull Test Data Table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to workstation: Enter user account & password.	
20	Expected Result: Operating system will come up.	
30	Tester: Bring up the Desktop and initialize the ECS Search and Order Tool.	
40	Expected Result: ECS Search and Order Tool dialog box displays status of system coming up, when up, dialog box disappears and the ECS Search and Order Tool Welcome screen is displayed.	
50	Tester: Select the Search Screen option.	
60	Expected Result: The Search Screen is displayed.	
70	Tester: Select the search type - Inventory.	
71	Expected Result: Inventory screen is displayed.	
80	Tester: Click on the Dataset ID List button.	
90	Expected Result: The Valids list for Dataset ID is displayed.	
100	Tester: Select "SSM/I Gridded brightness temperature data" and then select the OK button.	
110	Expected Result: The Valids list for Dataset ID is closed.	
120	Tester: Select the Number of Granules returned per Dataset. Reduce the number of granules to 20 (from the default of 100).	
121	Expected Result: Number of Granules is displayed.	
122	Tester: Reduce the number of granules to 20 (from the default of 100).	
123	Expected Result: Number of Granules is reduced to 20.	
130	Tester: Select the Geographic Information area and select the None button.	
140	Expected Result: A menu is displayed.	
150	Tester: Select Point on the menu and enter "53" in the Latitude field and "170" in the Longitude field.	
151	Expected Result: Modified Latitude and Longitude fields are displayed.	
160	Tester: Initialize the execution of the search.	
170	Expected Result: The Communications Status screen is displayed. The Data Server assigns a session ID and logs the initiation of the session. The Data Server logs and queues the search request to create a working collection and searches the Metadata Database in accordance with the search criteria. Monitor until complete.	
	ONE-TIME ORDERS	
180	Tester: Select one of the highlighted Data buttons in the DAAC's row.	
190	Expected Result: The Inventory Results screen is displayed with list of all granules contained in the dataset.	

200	Tester: Select some of the "SSM/I" datasets (approximately 5).	
210	Expected Result: The granules are highlighted, noting all fields for each granules.	
220	Tester: Mark the selected granules for order by selecting them for order in the Order column, then select one and go to the Goto menu and choose Detailed Information.	
230	Expected Result: The granule is marked for order and the Detailed Inventory Results screen is displayed with detailed information for the selected granule. Ensure granule is marked for order by observing the Order Mark section.	
240	Tester: Close the Detailed Information screen.	
250	Expected Result: The Inventory Results screen is displayed.	
260	Tester: Select the Goto menu and select Product Request.	
270	Expected Result: The Product Request screen is displayed with information pertaining to the orderable data products. Observe the screen and read all information about each product.	
280	Tester: Select one of the granule.	
290	Expected Result: The Package Selection Options screen is displayed.	
300	Tester: Select the Processing option, Media type, and Media format and select the OK button.	
310	Expected Result: The tester is returned to the Product Request screen.	
320	Tester: Submit the order request by selecting the Submit Request button.	
330	Expected Result: A Communications Status screen is displayed with the status of the search and network activity, monitor until complete.	
340	Tester: Select the Contact Information button.	
350	Expected Result: Information about the product order request and a point of contact is displayed. When the product order is received, it is packaged according to the selections made on the Package Selection Options screen.	
	STANDING ORDERS	
360	Tester: Close out all screens until the Search screen is displayed.	
370	Expected Result: Screens are closed out and the Search screen is displayed.	
380	Tester: Select the search type - Inventory to initialize an inventory search of Daily Access of Lightning Data in the U. S.	
381	Expected Result: The search type Inventory is displayed on Search screen.	
382	Tester: Enter "NLDN", "OTD", "lightning", and "U. S. & coastal areas" as the search criteria.	
383	Expected Result: The search criteria is displayed on Search screen.	
390	Tester: Select Global as the geographical search criteria.	

400	Expected Result: The search criteria is displayed on Search screen.	
410	Tester: Select the Execute search button to initialize the search.	
420	Expected Result: The Communication status screen is displayed with the status of the search and the network activity. The Data Server assigns a session ID and logs the initiation of the session. The Data Server logs and queues the search request to create a working collection and searches the Metadata Database in accordance with the search criteria.	
421	Tester: Monitor the search until complete.	
422	Expected Result: The search is completed.	
430	Tester: Once complete, view the granules retrieved by selecting the Data button for one of the DAACs.	
440	Expected Result: The Inventory Results screen is displayed with a list of all granules retrieved.	
450	Tester: Select some of the granules and mark them for order. Indicate that this is a standing order, so the ordered granules for the OTD be sent by ftp every 5 hours, granules for the NLDN be sent by ftp every 8 hours, and all others sent by 8mm tape every day.	
460	Expected Result: The order request is submitted and when the order is received, it is packaged according to the request.	
	REPROCESSING	
470	Tester: Due to information received from the sender of the "Daily Access to Lightning Data" about new and improved data due to some new algorithms, the tester requests to bring up the Search screen.	
480	Expected Result: The Search Screen is displayed.	
490	Tester: Initialize an inventory search by reprocessing the search criteria specified in steps 380 and 390.	
500	Expected Result: The Communication Status screen is displayed with status of the search and network activity.	
501	Tester: Monitor search until complete.	
502	Expected Result: Search is completed.	
510	Tester: When the search is complete, a system message is output indicating that the lightning data was reprocessed. Select the Data button to view the granules that were retrieved.	
520	Expected Result: The Inventory Results screen is displayed with a list of all granules retrieved.	
530	Tester: Select some of the granules and mark them for order.	
540	Expected Result: The granules are marked for order.	
550	Tester: Bring up the Product Request screen and specify the processing and media options for each selected granule, then order the product by selecting the Submit request button.	
560	Expected Result: A Communication Status screen is displayed with status of the order. Once complete, information about the product is displayed and it is package according to the request.	

VARIOUS PRODUCT REQUESTS		
570	Tester: Initialize a search for some L0-L4 data and then order the data.	
580	Expected Result: The data will be retrieved and the order will be packaged as specified in the request.	
590	Tester: Initialize a search for some Special products (L1 - L4) and then order the data.	
600	Expected Result: The data will be retrieved and the order will be packaged as specified in the request.	
610	Tester: Initialize a search for some Ancillary data and then order the data.	
620	Expected Result: The data will be retrieved and the order will be packaged as specified in the request.	
630	Tester: Initialize a search for some calibration data and correlative data and then sort the data.	
640	Expected Result: The data will be retrieved and the data will be sorted as specified in the request.	
650	Tester: Initialize a search for some documents and algorithms and then order the products.	
660	Expected Result: The products will be retrieved and the data will be sorted as specified in the request.	
670	Tester: Initialize a search for some planning and scheduling information and then order the information.	
680	Expected Result: The information will be retrieved and the order will be packaged as specified in the request.	
PRODUCT ORDER REJECTIONS		
690	Tester: Initialize a search for "Brightness Temperature", "Radiance", and "Total Sea Ice Concentration".	
700	Expected Result: The Communication Status screen is displayed, monitor until search is complete.	
710	Tester: When search is complete, select the Data button to display a list data retrieved.	
720	Expected Result: The results of the search is displayed.	
730	Tester: Select Screen Functions button, then select Mark for Product Request from cascading menu.	
740	Expected Result: The Product Request screen is displayed.	
750	Tester: Enter an invalid processing option and/or media option, then submit the product request.	
760	Expected Result: A reason for rejection is output by the system.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.12 Distribution Medium

TEST Procedure No.: A100110.120\$G	Date Executed:	Test Conductor:
Title: Distribution Medium		
Objective: This test verifies the capability for ECS to distribute data on-line (i.e., via ftp over a network) and off-line (i.e., via 8mm tape, CD ROM, 6250 tape, etc.).		
Requirements	Acceptance Criteria	
DADS2490#A	<p>This requirement is verified by demonstration.</p> <p>Each DADS shall distribute data using a variety of approved high density storage media such as:</p> <ul style="list-style-type: none"> a. 8 mm tape b. 4 mm DAT c. 3480/3490 tape d. CD ROM e. 6250 tape <p>The tester will submit product order requests via the ECS Search and Order Tool that must request the product be distributed on items a, d, and e. Items b and c are not selected for Release A as specified in the GSF C Design Specification for the ECS Project, Document 305-CD-014-001.</p>	
DADS2510#A	<p>This requirement is verified by demonstration.</p> <p>Each DADS shall copy data to the class of physical media specified in the product order from the IMS.</p> <p>The DDIST CI must validate each Media Distribution Request and verify that it conforms to the format specified in Appendix A of the current version of 304-CD-002 for Release A. The retrieved data is received by the tester on the physical media specified in the product order request via the ECS Search and Order Tool .</p>	
DADS2580#A	<p>This requirement is verified by demonstration.</p> <p>Each DADS shall distribute data electronically using a variety of networks and methods including FAX.</p> <p>The retrieved data is received by the tester electronically as specified in the product order request submitted via the ECS Search and Order Tool. The tester must then ensure that the data has been correctly and accurately transmitted.</p>	

IMS-0590#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide the capability to distribute information:</p> <ul style="list-style-type: none"> a. On-line (i.e., over a network) b. Off-line (hardcopy or offline data media) <p>This requirement must be verified by the tester ensuring that the system can distribute the information accurately and correctly. The tester must submit product order requests that specify that data be distributed on-line and off-line via the ECS Search and Order Tool.</p>
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Test Inputs: Pull Test Data Table is still being updated.

Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
	This test is still being updated with the operational scenarios mentioned in the sequence overview.	
10	Tester: Login to workstation: Enter user account & password.	
20	Expected Result: Operating system will come up.	
30	Tester: Bring up and initialize the ECS Search and Order Tool.	
40	Expected Result: ECS Search and Order Tool dialog box displays status of system coming up, when up, dialog box disappears and the ECS Search and Order Tool Welcome screen is displayed.	
50	Tester: Initialize an Inventory search on "Grasslands in the U. S. from 1901 to the present".	
60	Expected Result: The search is initialized and the Data Server assigns a session ID and logs the initiation of the session. The Data Server logs and queues the search request to create a working collection and searches the Metadata Database in accordance with the search criteria. The data is retrieved.	
70	Tester: Request a copy of the list of data and have it sent via FAX.	
80	Expected Result: The list is distributed as requested.	
90	Tester: After reviewing the list, initialize an inventory search using "Leaf-Area-Index (LAI) and Regional Global Change Susceptibility Index" as the search criteria.	
100	Expected Result: The search is initialized and the data is retrieved.	
110	Tester: Request a copy of the data and have it sent via ftp.	
120	Expected Result: The list is distributed as requested.	
130	Tester: After reviewing this data list, initialize a Guide search using "Integrated Grassland Data for Central U. S." as the search criteria.	
140	Expected Result: The search is initialized and the Data Server assigns a session ID and logs the initiation of the session. The Data Server logs and queues the search request to create a working collection and searches the Metadata Database in accordance with the search criteria. The data is retrieved.	
150	Tester: Review the data and enter a product order request.	
160	Expected Result: The product order is displayed with description of data, price, media options, etc..	
170	Tester: Submit order and request data be sent on CD-ROM via mail.	
180	Expected Result: The data is distributed as requested.	

OTHER DISTRIBUTION MEDIA		
190	Tester: Initialize a search using "Integrated Grassland Data for Southern U. S." as the search criteria.	
200	Expected Result: The search is initialized and the Data Server assigns a session ID and logs the initiation of the session. The Data Server logs and queues the search request to create a working collection and searches the Metadata Database in accordance with the search criteria. The data is retrieved.	
210	Tester: Review the data and enter a product order request.	
220	Expected Result: The product order is displayed with description of data, price, media options, etc..	
230	Tester: Submit order and request data be sent on 8 mm tape via mail.	
240	Expected Result: The data is distributed as requested.	
250	Tester: Initialize a search using "Integrated Grassland Data for Central Florida and Georgia" as the search criteria.	
260	Expected Result: The search is initialized and the Data Server assigns a session ID and logs the initiation of the session. The Data Server logs and queues the search request to create a working collection and searches the Metadata Database in accordance with the search criteria. The data is retrieved.	
270	Tester: Review the data and enter a product order request.	
280	Expected Result: The product order is displayed with description of data, price, media options, etc..	
290	Tester: Submit order and request data be sent on 6250 tape via mail.	
300	Expected Result: The data is distributed as requested.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.1.13 Application Programming Interfaces

This test was moved and the requirements are being tested in test A120530.020\$G in the End - to-End section.

10.1.1.14 Data Product History

This test has been deleted and the requirements are being tested in the Product Order Test (A10110.110\$G).

10.1.1.15 User Statistics Report Generation

TEST Procedure No.: A100110.150\$G	Date Executed:	Test Conductor:
Title: User Statistics Report Generation		
Objective: This test verifies IMS's capability to generate reports containing user statistics information.		
Requirements	Acceptance Criteria	
IMS-1645#A	<p>This requirement is verified by test.</p> <p>The IMS shall accept from the users and output to the SMC, user feedback information, which shall contain the following at a minimum:</p> <ol style="list-style-type: none"> a. Product data quality assessment b. Schedule performance assessment c. Evaluation of quality of ECS service <p>This requirement must be verified by the tester entering feedback information through the comments function via the ECS Search and Order Tool. The ECS Search and Order Tool must also be utilized to test the generation of these reports.</p>	
IMS-1650#A	<p>This requirement is verified by test.</p> <p>IMS operations data shall contain information on:</p> <ol style="list-style-type: none"> a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests <p>This requirement must be verified by the tester reviewing the Distribution Activity log to ensure items a-d exists. The ECS Search and Order Tool must also be utilized to test the generation of these reports.</p>	
IMS-1660#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum:</p> <ol style="list-style-type: none"> a. CPU utilization b. Amount of user storage c. Connect time d. Session histories <p>This requirement must be verified by the tester reviewing the Distribution Activity log to ensure items a-d exist. The ECS Search and Order Tool must also be utilized to test the generation of these reports.</p>	

IMS-1665#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.</p> <p>This requirement must be verified by the tester reviewing the Activity log to ensure all service requests were recorded. The ECS Search and Order Tool must also be utilized to test the generation of these reports.</p>			
IMS-1700#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide the capability to generate reports on:</p> <ul style="list-style-type: none"> a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries <p>This requirement must be verified by the tester reviewing the backlog report to insure items a-f exists. The ECS Search and Order Tool must also be utilized to test the generation of these reports.</p>			
IMS-1720#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide the capability to produce reports that relate data sets to:</p> <ul style="list-style-type: none"> a. Processing algorithms used for data generation at the PGS b. Software used for data generation at the PGS c. Parameters used for data generation at the PGS d. Data recipients. <p>This requirement must be verified by the tester reviewing the Report Generation log to ensure all reports listed in a-d were generated. The ECS Search and Order Tool must also be utilized to test the generation of these reports.</p>			
Test Inputs: Pull Test data Table is still being updated.				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Login to workstation: Enter user account & password.	
20	Expected Result: Operating system will come up.	
30	Tester: Bring up the Desktop and initialize the ECS Search and Order Tool.	
40	Expected Result: ECS Search and Order Tool dialog box displays status of system coming up, when up, dialog box disappears and the ECS Search and Order Tool Welcome screen is displayed.	
50	Tester: Initialize a search using data sets, DMSP-F8 and AVHRR as the search criteria.	
60	Expected Result: The search is initialized and the data is retrieved.	
70	Tester: Review the data retrieve and selects some granules to order and request the data to be sent via 8 mm tape.	
80	Expected Result: The data received as requested.	
90	Tester: Select the Comments from the GoTo menu to enter some comments on quality of product(s) assessment, scheduling performance assessment, and quality of service rendered.	
100	Expected Result: The Comments screen is displayed to enter comments.	
110	Tester: Send the comments to the ECS Search and Order Tool system staff.	
120	Expected Result: Comments are sent to ECS Search and Order Tool system staff and the SMC.	
130	Tester: Exit ECS Search and Order Tool.	
140	Expected Result: The ECS Search and Order Tool is disabled.	
150	Tester: Review logs of all ECS Search and Order Tool activity performed through the ECS Search and Order Tool.	

160	<p>Expected Result: The following reports are output:</p> <ul style="list-style-type: none"> a. information on ECS Search and Order Tool utilization, outstanding data distribution requests, outstanding processing requests, outstanding data acquisition requests b. information on a full and complete history of all ECS Search and Order Tool resources used by science investigators c. information on ECS Search and Order Tool services usage by each user d. reports on ECS Search and Order Tool performance summaries e. reports that relate data sets to processing algorithms, software, and parameters used for data generation at the PGS. 	
Data Reduction and Analysis Steps:		
1. Check reports and verify that the information is accurate.		
Signature:	Date:	

10.1.2 ECS/Version 0 (V0) System Interoperability Sequence

The ECS/Version 0 (V0) System Interoperability Sequence demonstrates the interoperability between the ECS and V0 systems. It also shows that either system can interact with the other system's information server, making the ECS (V0) data holdings accessible for viewing and ordering by the V0 (ECS) user.

The ECS Advertising Service (EAS) provides search and order services for accessing V0 data holdings, while the ECS Search and Order Tool provides services for accessing ECS data holdings. Both the products of both these systems can be delivered directly to a user on physical media or electronically per the user's request.

Configuration: The subsystem needed to perform this sequence of tests are as follows. CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e., other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

- GSFC V0 DAAC
- GCMD

Operator Positions: The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support a sequence are listed:

- DAAC Computer Operator
- DAAC User Assistant

Operational Scenario: The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605/OP1) and the ECS User Scenario Notebook (194-00311TPW), that were used to develop tests in this sequence of tests are listed:

- Physical Media Distribution Scenario (Section 3.11.4)
- End-to-End Order Tracking Scenario - Hard Media (Section 3.14.1a)
- End-to-End Order Tracking Scenario - FTP (Section 3.14.1b)
- Place an Order for a Potential User Scenario (Section 3.14.4)
- Science Scenario Model #1 (Inventory and Guide Searches)
- Science Scenario Model #5 (Inventory and Browse Searches)

Test Dependencies: There are no test dependencies needed for this sequence of tests.

10.1.2.1 ECS User Access to Version 0

TEST Procedure No.: A100130.020\$G	Date Executed:	Test Conductor:
Title: ECS User Access to Version 0 (V0)		
Objective: This procedure tests the capability of the ECS user to identify the data holdings at V0 GSFC DAAC through the Advertising Service interface. The ECS verifies which V0 DAAC system holds data and passes the request to the appropriate DAAC IMS Server.		
Requirements	Acceptance Criteria	
EOSD1695#A	<p>This requirement is verified by test.</p> <p>The system shall provide 2-way interoperability with the V0 system.</p> <p>The systems shall enable users of each system to search, browse, and order data products made available by the other system. Using the ECS Search and Order Tool the tester must identify, search, and request data held in the V0 System.</p>	
IMS-0625#A	<p>This requirement is verified by demonstration.</p> <p>The system shall provide bi-directional interoperability between ECS and V0 Systems for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.</p> <p>The ECS and V0 Systems interact with information servers of the other system by using V0 system protocols. The tester, via the ECS Search and Order Tool, must test bi-directional access to inventory search requests and results, browse requests, and product requests.</p>	

IMS-0915#A	<p>This requirement is verified by test.</p> <p>The system shall provide an interface to the Version 0 system for ordering data products to be delivered directly to the tester, or as specified in ICDs.</p> <p>The GSFC ECS DAAC sends the product directly to the authorized user either on physical media or online. The tester must test access to data products from the V0 system via the ECS Search and Order Tool.</p>
V0-0010#A	<p>This requirement is verified by test.</p> <p>The ECS shall provide 2-way interoperability to the ESDIS V0 system via Level 3 interoperability.</p> <p>The tester must ensure that the Level 3 two-way catalog interoperability interfaces with ECS via the ECS Search and Order Tool, and supports the following services: directory search request/results, guide search request/results, inventory search request/results, browse request/results, product search request/results, quit request/results, and dependent valid values.</p>
V0-0030#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the ESDIS V0 IMS shall have the capability to receive ECS User Authentication Information.</p> <p>The requirement must be verified by the tester accessing services or data from V0 via the ECS Search and Order Tool. The ECS interfaces directly with an ESDIS Server to request and receive User Authentication information.</p>
V0-0040#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the ESDIS V0 IMS shall have the capability to receive V0 User Authentication Requests.</p> <p>The requirement must be verified by the tester accessing services or data from V0 via the ECS Search and Order Tool. The ECS interfaces directly with an ESDIS Server to request and receive User Authentication Requests.</p>
V0-0055#A	<p>This requirement is verified by test.</p> <p>The Version 0 shall permit ECS to use agreed upon Version 0 network components and services.</p> <p>The interfaces between ECS and V0 allow for transfer of data and requests. The tester must access components and services from V0 via the ECS Search and Order Tool.</p>

V0-0060#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Inventory Search Requests via V0 protocols.</p> <p>The tester must ensure that the ECS sends the Inventory Search Requests to the ECS Search and Order Tool via V0 protocols.</p>
V0-0070#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Inventory Search Results via V0 protocols.</p> <p>The tester must ensure that the ECS Search and Order Tool sends the Inventory Search Results to the ECS via V0 protocols.</p>
V0-0080#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the ESDIS V0 IMS shall have the capability to receive Guide Search Requests via V0 protocols.</p> <p>The tester must ensure that the ECS sends the Guide Search Requests to the ECS Search and Order Tool via V0 protocols.</p>
V0-0090#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Guide Search Results via V0 protocols.</p> <p>During this test, the tester must verify that the ECS Search and Order Tool sends the Guide Search Results to the ECS via V0 protocols.</p>
V0-0100#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the ESDIS V0 IMS shall have the capability to receive Browse Requests via V0 protocols.</p> <p>During this test, the tester must verify that the ECS sends the Browse Search Requests to the ECS Search and Order Tool via V0 protocols.</p>
V0-0110#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Browse Search Results via V0 protocols.</p> <p>During this test, the tester must verify that the ECS Search and Order Tool sends the Browse Search Result data to the ECS via V0 protocols.</p>
V0-0370#A	<p>This requirement is verified by test.</p> <p>The DAAC(s) shall have the capability to send and ECS shall have the capability to receive Advertising Information.</p> <p>The tester must access the Advertising service from the ECS Desktop to view the data holdings at V0.</p>

V0-0380#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the ESDIS IMS team shall have the capability to receive Dependent Valid Information.</p> <p>The system receives the Dependent Valid Information from the local system which provides information describing data holdings at GSFC DAAC. The tester must access data at ECS GSFC DAAC via the ECS Search and Order Tool.</p>			
Test Inputs: None.				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Logs into the ECS desktop; brings up the ECS Search and Order Tool.	
20	Expected Result: The "Welcome" screen appears after all the necessary information is entered.	
30	Tester: Select GoTo menu.	
31	Expected Result: The System displays the GoTo Screen Functions window.	
32	Tester: Select Search Screen.	
40	Expected Result: The Search screen is displayed	
	DIRECTORY SEARCH REQUEST/RESULTS	The Directory Search Request/Results provides information on the location of metadata or dataset catalogues.
50	Tester: Selects Directory Search.	
51	Expected Result: The search is executed.	
60	Tester: Submits a directory query for metadata at the ECS GSFC DAAC in the ECS Search and Order Tool system.	
70	Expected Result: The query is executed and the system responds with a Communications Results Status window for the GSFC DAAC.	
80	Tester: Clicks on the "Data" button to view the data receives from V0 GSFC DAAC.	
100	Expected Result: The system shows the data at V0 GSFC DAAC.	
	BROWSE REQUEST/RESULTS	The Browse Request/Results allows the user to retrieve/view low resolution images.

110	Tester: Enters an Inventory Search for data at V0 GSFC DAAC in the ECS Search and Order Tool system.	
120	Expected Result: The ECS Search and Order Tool returns an Inventory Search Results field called "Browse Available" which indicates whether a browse product exists for a given granule.	
130	Tester: Uses a FTP (Local) Browse method to see a browse product for any granule.	
140	Expected Result: The granule unique identifier information is passed by the ECS Search and Order Tool System to the ECS GSFC DAAC. The ECS GSFC DAAC sends back an acknowledgment message to the ECS Search and Order Tool about receiving the request for browse data. The ECS GSFC DAAC also sends an e-mail to the user instructing the user where to find the browse data and how to access the product via FTP.	
150	Tester: Invokes EOSView from the Desktop to view this browse image upon receiving notification from the ECS GSFC DAAC about browse product.	
160	Expected Result: The system allows the user to display the browse image product on his/her workstation.	
170	Tester: Uses an Integrated Browse method to see a browse product for any granule.	
180	Expected Result: System - The granule identifier information and method of browse (Integrated) are passed to the ECS GSFC DAAC. The GSFC DAAC sends the browse products back to the ECS Search and Order Tool in HDF format. The user observes the image displayed on the Integrated Browse Display Screen.	
	INVENTORY SEARCH REQUEST/RESULTS	The Inventory Search Request/Results allows the user to locate specific granules within a dataset.
190	Tester: Selects the Inventory "Search Type" from the Inventory Search screen.	
191	Expected Result: The "Search Type" option is invoked.	

192	Tester: Enters an Inventory Search for data at V0 GSFC DAAC. The minimum Search Criteria requires Geographic Info., and at least one of the following: Sensor, Parameter or Dataset ID.	
193	Expected Result: The search brings up the required data.	
194	Tester: Types the valid information into a field. or may use the system provided lists of valid values for selected fields on the search screen.	
195	Expected Result: The ECS Search and Order Tool displays the appropriate Dependent Valids List for that field.	
196	Tester: Clicks on each item to select values for a given field from the Valid List. Make the desired selection(s) and press "O.K" to return to the search screen.	
197	Expected Result: The ECS Search and Order Tool retrieves granule information associated with all selected datasets.	
198	ECS Search and Order Tool System: The system performs an automatic inventory search and returns the user to the Search Screen.	
199	Expected Result: Tester returns to the search screen window.	
200	Tester: Executes the Search.	
201	Expected Result: The system displays a Communications Status screen window.	
210	Tester: Clicks the "Data" button to view the data.	
220	Expected Result: The completed search generates the Inventory Results. The Inventory Results will include the dataset level and granule information.	
	GUIDE SEARCH REQUEST/RESULTS	The Guide Request/Results provides detailed descriptions about datasets, platforms and sensors.
230	Tester: Selects the "Guide" Search Type on the screen.	

240	Expected Result: The system displays the Guide Display Screen and allows to access Guide Search in one of the following three methods: Guide Type, Guide Info, and Item.	
250	Tester: Performs a Free Text search by selecting the "Guide" Search Type and Enters the word "DMSP".	
260	Expected Result: The system returns with a list of all guide documents with the word DMSP in them.	
270	Tester: Clicks on the document name to view that document.	
280	Expected Result: The system brings up a guide document.	
290	Tester: Searches for word(s) in the current document by clicking the "Find" from the screen.	
300	Expected Result: The system goes to the first occurrence of the word in the guide document.	
	PRODUCT REQUEST/RESULTS	The Product Request/Results provides placement of orders for full data sets.
310	Tester: Clicks on the Order button from the GoTo Screen Functions window and Selects Product Request from the Go To menu.	
320	Expected Result: The system displays the orderable granules and establishes a dialog through the interface with GSFC DAAC to make a product request.	
330	Tester: Clicks on the granule.	
340	Expected Result: The system displays the Package Selection Options screen.	
350	Tester: Selects item, processing option and media option (physical or on-line).	
360	Expected Result: The screen returns the Product Request Screen.	
370	Tester: Selects the submit Request button from the Screen Functions menu.	

380	Expected Result: The Product Request Search screen appears. The system displays Communications Status screen and Contact Information is available.	
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390	Tester: Clicks on the Contact Information to view the information.	
391	Expected Result: The tester views the provided information.	
	QUIT	Notification of premature termination of a session due to problems.
400	Tester: Selects "abort" from the GoTo menu.	
410	Expected Result: The abort option comes up, and the system prompts for the confirmation.	
420	Tester: Clicks on the OK button.	
430	Expected Result: The ECS Search and Order Tool session ends.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.2.2 Search ECS & V0 from the ECS Desktop

TEST Procedure No.: A100130.030\$G	Date Executed:	Test Conductor:
Title: Search ECS & V0 from the ECS Desktop		
Objective: This procedure verifies that an ECS User can construct and execute queries that searches the holdings of both ECS and GSFC V0 DAAC. The queries for inventory, browse, and guide data are tested. The ECS user requesting a product from the V0 archives is verified.		
Requirements	Acceptance Criteria	
EOSD1695#A	<p>This requirement is verified by test.</p> <p>The ECS shall provide 2-way interoperability with the V0 system.</p> <p>The systems shall enable users of each system to search, browse, and order data products made available by the other system. Using the ECS Search and Order Tool the tester must identify, search, and request data held in the V0 System.</p>	

IMS-0625#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.</p> <p>The ECS and V0 Systems interact with information servers of the other system by using V0 system protocols. The tester, via the ECS Search and Order Tool, must test bi-directional access to inventory search requests and results, browse requests, and product requests.</p>
V0-0010#A	<p>This requirement is verified by test.</p> <p>The system shall provide 2-way interoperability with ESDIS V0 system via L3 interoperability.</p> <p>The tester must ensure that the Level 3 two-way catalog interoperability interfaces with ECS via the ECS Search and Order Tool, and supports the following services: directory search request/results, guide search request/results, inventory search request/results, browse request/results, product search request/results, quit and dependent valid values.</p>
V0-0060#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Inventory Search Requests via V0 protocols.</p> <p>The tester must ensure that the ECS sends the Inventory Search Requests to the ECS Search and Order Tool via V0 protocols.</p>
V0-0070#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Inventory Search Results via V0 protocols.</p> <p>The tester must ensure that the ECS Search and Order Tool sends the Inventory Search Results to the ECS via V0 protocols.</p>
V0-0080#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the ESDIS V0 IMS shall have the capability to receive Guide Search Requests via V0 protocols.</p> <p>The tester must ensure that the ECS sends the Guide Search Requests to the ECS Search and Order Tool via V0 protocols.</p>
V0-0090#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Guide Search Results via V0 protocols.</p> <p>During this test, the tester must verify that the ECS Search and Order Tool sends the Guide Search Results to the ECS via V0 protocols.</p>

V0-0100#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the ESDIS V0 IMS shall have the capability to receive Browse Requests via V0 protocols.</p> <p>During this test, the tester must verify that the ECS sends the Browse Search Requests to the ECS Search and Order Tool via V0 protocols.</p>			
V0-0110#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Browse Search Results via V0 protocols.</p> <p>During this test, the tester must verify that the ECS Search and Order Tool sends the Browse Search Result data to the ECS via V0 protocols.</p>			
V0-0120#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Product Requests via V0 protocols.</p> <p>During this test, ECS sends the Product Requests to the ECS Search and Order Tool via V0 protocols.</p>			
V0-0240#A	<p>This requirement is verified by test.</p> <p>The ECS and Version 0 shall have the capability to exchange pricing information, as necessary.</p> <p>During this test, the tester requests the cost estimate for product data to exchange pricing information in the ECS and V0 systems.</p>			
V0-0370#A	<p>This requirement is verified by test.</p> <p>The DAAC(s) shall have the capability to send and ECS shall have the capability to receive Advertising Information.</p> <p>The tester must access the Advertising service from the ECS Desktop to view the data holdings at V0.</p>			
<p>Test Pull Test Data Table is still being updated.</p> <p>Inputs:</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Invokes the Advertising Service icon from the ECS desktop to search for data at V0 GSFC DAAC.	
20	Expected Result: The system appears and the Advertising Search Screen comes up, which enables the selection of parameters.	
30	Tester: Clicks the Search Screen button and enters the search criteria or (Uses GoTo menu Functions and selects Search Screen).	
40	Expected Result: The GoTo Screen Functions window appears on the screen.	
41	Tester: Selects Inventory as Search Type name from the GoTo Screen.	
50	Expected Result: The Inventory field comes up.	
51	Tester: Enters Rectangle Nlat: +50; Elon -120; Slat: +35; Wlon: -125 under the "Geographical Information" column.	
52	Tester: Clicks Continue and enters 1987-07-15 to 1987-08-15 under the "Date/Time" column.	
53	Tester: Selects AVHRR under the "Sensor" column.	
54	Tester: Type 10 under the "Number of Granules returned Dataset" column.	
60	Expected Result: The system lists the results for GSFC ECS DAAC. The Inventory Search Results are as follows: ANNUAL PATHFINDER LAND 10 DAY MOSAICS ANNUAL PATHFINDER LAND DAILY MOSAICS	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.2.3 Version 0 User Access to ECS

TEST Procedure No.: A100130.040\$G	Date Executed:	Test Conductor:
Title: Version 0 User Access to ECS		
Objective: This procedure verifies that a user logged on to the V0 IMS can query and access data in ECS. It also verify that the ESDIS V0 IMS Client can send the queries for inventory, guide, and browse data to the applicable ECS GSFC DAAC and receives and displays the response.		
Requirements	Acceptance Criteria	
EOSD1695#A	<p>This requirement is verified by test.</p> <p>The ECS shall provide 2-way interoperability with the V0 system.</p> <p>Using the ECS Search and Order Tool, the tester identifies the searches and requests the data held in the V0 System.</p>	
IMS-0625#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.</p> <p>The ECS and V0 Systems interact with information servers of the other system by using V0 system protocols. The tester, via the ECS Search and Order Tool, must test bi-directional access to inventory search requests and results, browse requests, and product requests.</p>	
V0-0010#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide 2-way interoperability with ESDIS V0 system via L3 interoperability.</p> <p>The tester must ensure that the Level 3 two-way catalog interoperability interfaces with ECS via the ECS Search and Order Tool, and supports the following services: directory search request/results, guide search request/results, inventory search request/results, browse request/results, product search request/results, quit and dependent valid values.</p>	
V0-0020#A	<p>This requirement is verified by test.</p> <p>ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive User Authentication Requests.</p> <p>The tester must ensure that the Authentication Requests are sent to the ECS via the ECS Search and Order Tool. When V0 user needs to access services or data from ECS, it goes to the ECS as V0 user. The ECS Search and Order Tool interfaces with ECS to request and receive user Authentication Requests. The ECS or V0 system user is authorized to receive and access data.</p>	

V0-0050#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive V0 User Authentication Information.</p> <p>The tester must ensure that the Authentication Information are sent to the ECS via the ECS Search and Order Tool. When V0 user needs to access services or data from ECS, it goes to the ECS as V0 user. The ECS Search and Order Tool Client interfaces with ECS to request and receive user Authentication Information. The ECS or V0 system user is authorized to receive and access data.</p>			
V0-0055#A	<p>This requirement is verified by test.</p> <p>The Version 0 shall permit ECS to use agreed upon Version 0 network components and services.</p> <p>The tester must ensure that the interfaces between ECS and V0 allow for transfer of data and requests via the ECS Search and Order Tool.</p>			
<p>Test Inputs: Pull Test Data Table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: (V0 user) Logs into the ECS Search and Order Tool desktop; brings up V0 version of the ECS Search and Order Tool.	
20	Expected Result: The "Welcome" screen appears after all the necessary information is entered.	
30	Tester: (V0 user) Clicks the Search Screen button and enters the search criteria or (Uses GoTo menu Functions and selects Search Screen).	
40	Expected Result: The GoTo Screen Functions window appears on the screen.	
41	Tester: (V0 user) Selects the Inventory by clicking Search Type name from the GoTo Screen.	
50	Expected Result: The Inventory field comes up.	
51	Tester: (V0 user) Enters Rectangle Nlat: 0; Elon 20; Slat: 40; Wlon: - 40 under the "Geographical Information" column.	
52	Tester: (V0 user) Clicks Continuous and enters 1985-01-01 to 1990-12-31 under the "Date/Time" column.	
53	Tester: (V0 user) Enters the parameters; Clouds and Ozone in the Inventory field screen.	
54	Tester: (V0 user) Selects the Data Center ID; GSFC in the Inventory field screen.	
55	Tester: (V0 user) Write 10 under the "Number of Granules returned Dataset" column.	

60	<p>Expected Result: The system lists the results for GSFC ECS DAAC. The Inventory Search Results are as follows:</p> <p>ANNUAL PATHFINDER LAND 10 DAY MOSAICS</p> <p>ANNUAL PATHFINDER LAND DAILY MOSAICS</p> <p>TOMS DAYGRIDS</p>	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.2.4 Search ECS & V0 from the V0 Client

TEST Procedure No.: A100130.050\$G	Date Executed:	Test Conductor:
Title: Search ECS & V0 from the V0 Client		
Objective: This procedure verifies that a user logged on to the V0 IMS can query and access data in ECS. It also verifies that the ESDIS V0 IMS Client can send the queries for inventory, guide, and browse data to the GSFC ECS DAAC and receives and displays the response.		
As per GSFC comments, the necessity of this test is still being investigated at this time.		
Requirements	Acceptance Criteria	
EOSD1695#A	<p>This requirement is verified by test.</p> <p>The ECS shall provide 2-way interoperability with the V0 system.</p> <p>Using the ECS Search and Order Tool, the tester identifies, searches and requests data held in the V0 System.</p>	
IMS-0625#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.</p> <p>The ECS and V0 Systems interact with information servers of the other system by using V0 system protocols. The tester, via the ECS Search and Order Tool, must test bi-directional access to inventory search requests and results, browse requests, and product requests.</p>	

V0-0010#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide 2-way interoperability with ESDIS V0 system via L3 interoperability.</p> <p>The tester must ensure that the Level 3 two-way catalog interoperability interfaces with ECS via the ECS Search and Order Tool, and supports the following services: directory search request/results, guide search request/results, inventory search request/results, browse request/results, product search request/results, quit and dependent valid values.</p>
V0-0150#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Inventory Search Requests via V0 protocols.</p> <p>During this test, the tester must ensure that the Inventory Search Requests are sent to the ECS via V0 protocols.</p>
V0-0160#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Inventory Search Results via V0 protocols.</p> <p>During this test, the tester must ensure that the Inventory Search Results are sent to the ECS Search and Order Tool via V0 protocols.</p>
V0-0170#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive Guide Search Requests.</p> <p>During this test, the tester must ensure that the Guide Search Requests are sent to the ECS via V0 protocols.</p>
V0-0180#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Guide Search Results.</p> <p>The tester must verify that the Guide Search Results are sent to the ECS Search and Order Tool via V0 protocols.</p>
V0-0190#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive Browse Requests.</p> <p>The tester must verify that the Browse Search Requests are sent to the ECS via V0 protocols.</p>

V0-0200#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Browse Results.</p> <p>The tester must verify that the Browse Search Results are sent to the ECS Search and Order Tool via V0 protocols.</p>			
V0-0230#A	<p>This requirement is verified by test.</p> <p>The ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive Product Requests via V0 protocols.</p> <p>The tester must verify that the Product Requests are sent to the ECS via V0 protocols.</p>			
V0-0370#A	<p>This requirement is verified by test.</p> <p>The ECS GSFC DAAC shall send and ECS shall receive Advertising Information.</p> <p>The tester accesses the Advertising service from the ECS Desktop to view the data holdings at V0.</p>			
Test Inputs: Pull Test Data Table is still being updated.				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Access the ECS Search and Order Tool.	
20	Expected Result: The "Welcome" screen appears after all the necessary information is entered.	
30	Tester: Clicks the Search Screen button and enters the search criteria or (Use GoTo menu, and select Search Screen).	
40	Expected Result: The System displays the "GoTo Screen Functions" window.	
50	Tester: Selects Directory Search.	
51	Expected Result: Directory Search comes up.	
60	Tester: Submits a directory query for datasets at ECS GSFC DAAC via the ECS Search and Order Tool.	
70	Expected Result: The search is executed and the system responds with a Communications Results Status window for the GSFC DAAC.	
80	Tester: Clicks on the "Data" button to view the data receives from ECS GSFC DAAC.	
100	Expected Result: The system shows data at ECS GSFC DAAC.	
110	Tester: Enters an Inventory Search for data at the GSFC DAAC in the ECS Search and Order Tool system.	
120	Expected Result: The ECS Search and Order Tool returns to the Inventory Search Results screen which indicates whether a browse product exists for a given granule.	
130	Tester: Uses a FTP (Local) Browse method to see a browse product for any granule.	

140	Expected Result: The granule unique identifier information is passed via the ECS Search and Order Tool to the ECS GSFC DAAC. The ECS GSFC DAAC sends back an acknowledgment message about receiving the request for browse data. The ECS GSFC DAAC also sends an e-mail to the user instructing the user where to find the browse data and how to access the product via FTP.	
150	Tester: Uses an Integrated Browse method to see a browse product for any granule.	
160	Expected Result: The granule identifier information and method of browse (Integrated) are passed to the ECS GSFC DAAC. The GSFC DAAC sends the browse products back via the ECS Search and Order Tool in HDF format. The user should see the image displays on the Integrated Browse Display Screen.	
170	Tester: Selects the Inventory "Search Type" from the Inventory Search screen and enters an Inventory Search for data at V0 GSFC DAAC. The minimum Search Criteria requires Geographic information., and at least one of the following: Sensor, Parameter or Dataset ID.	
172	Tester: Types the valid information into a field. or may use the system provided lists of valid values for selected fields on the search screen.	
173	Expected Result: The ECS Search and Order Tool displays the appropriate Dependent Valid List for that field.	
174	Tester: Clicks on each item to select values for a given field from the Valid List. Make the desired selection(s) and press "O.K" to return to the search screen.	
175	Expected Result: The ECS Search and Order Tool retrieves granule information associated with all selected datasets. The system performs an automatic inventory search and returns the user to the Search Screen.	
176	Tester: Executes the Search.	
177	Expected Result: The system displays a Communications Status screen window.	
180	Tester: Clicks the "Data" button to view the data.	
190	Expected Result: The ECS Search and Order Tool retrieves the granule information associated with all selected datasets. The system performs an automatic inventory search.	

200	Expected Result: The completed search returns the Inventory Results. The Inventory Results include dataset level and granule information.	
210	Tester: Selects the "Guide" Search Type on the screen.	
220	Expected Result: The system displays the Guide Display Screen and accessed the Guide Search in one of the following three methods: Guide Type, Guide Info, and item.	
230	Tester: Performs a Free Text search by selecting the "Guide" Search Type and enters the word "DMSP".	
240	Expected Result: The system returns with a list of all guide documents with the word DMSP in them.	
250	Tester: Clicks on the document name to view that document.	
260	Expected Result: The system brings up a guide document.	
270	Tester: Searches for word(s) in the current document by clicking the "Find" from the screen.	
280	Expected Result: The system goes the first occurrence of the word in the guide document.	
290	Tester: Clicks on the Order button from the GoTo Screen Functions window and Selects Product Request from the Go To menu.	
300	Expected Result: The system displays the orderable data products and establishes a dialog through the interface with GSFC DAAC to make a product request.	
310	Tester: Clicks on the granule.	
320	Expected Result: The system displays the Package Selection Options screen.	
330	Tester: Selects item, processing option and media option (physical or on-line).	
340	Expected Result: The screen returns the Product Request Screen.	
350	Tester: Selects the submit Request button from the Screen Functions menu.	

360	Expected Result: The Product Request Search screen appears. The system displays Communications Status screen and Contact Information is available.	
370	Tester: Clicks on the Contact Information to view the information.	
380	Expected Result: Contact information comes up.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.3 EOSDIS Core System (ECS)/Affiliated Data Center (ADC) Interoperability Sequence

The EOSDIS Core System (ECS)/Affiliated Data Center (ADC) Interoperability sequence confirms that an ECS science user can access, search, and view pertinent NOAA data holdings. The sequence assures that the NOAA ADC works in coordination with ECS to allow the ECS user to establish NOAA data holdings communication access, search, and view per ICD specifications. The sequence also demonstrates that the ECS operations staff efficiently transmits data to authorized requesters.

The sequence confirms that communication between the ECS and the NOAA ADC is supported by the NSI and/or EBnet, as required by the user specifications for data to support ECS data production, or for data in response to queries and searches.

The process of searching and viewing the data holding of the sequence guides the science user through the steps required for submitting a user authentication request. Once access privileges are granted, the user continues to generate queries to search inventory, directory and guide metadata, and to browse particular products.

Accessing data holdings of the NOAA ADC tests the ECS user ordering of data products, algorithm packages, and documents; initiating of standing orders; and requesting status for previous orders.

Configuration: The subsystem needed to perform this sequence of tests are as follows. CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

- NOAA ADC
- GSFC V0 DAAC

- MSFC SCF
- GCMD

Operator Position(s): The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

- DAAC User Services Representative
- DAAC Computer Operator
- DAAC User Assistant

Operational Scenario(s): The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605/OP1) and the ECS User Scenario Notebook (194-00311 TPW), that were used to develop tests in this sequence of tests are listed:

- End-to-End Order Tracking Scenario - Hard Media (Section 3.14.1a)
- End-to-End Order Tracking Scenario - FTP (Section 3.14.1b)
- Place an Order for a Potential User Scenario (Section 3.14.4)
- Science Scenario #12 - Mid-latitude and tropical interactions-precipitation forcing.

Test Dependencies: There are no test dependencies needed for this sequence of tests.

10.1.3.1 ECS User Access to NOAA ADC

TEST Procedure No.: A100140.010\$G	Date Executed:	Test Conductor:
Title: ECS User Access to NOAA ADC		
Objective: The objective of this test procedure is to verify that ECS User can access Advertising Service for the NOAA ADC for search, guide, and browse services. This test also verifies that ECS User can query for product availability list or order specific product from NOAA ADC, and request cost estimate for the product.		
Requirements	Acceptance Criteria	
EOSD5000#A	<p>This requirement is verified by test.</p> <p>The verification method was changed from analysis to test.</p> <p>The system shall provide heterogeneous services, connect with different topologies, and have various levels of reliability to ADC.</p> <p>The system allows the ECS Client to search, browse and order data from NESDIS SAA. The Advertising Service access the Advertisements for the ECS and non-ECS (NOAA ADC) data and services.</p>	

IMS-0620#A	<p>This requirement is verified by demonstration.</p> <p>The system shall provide access to inventories of selected ODCs and ADCs.</p> <p>The system provides an interface for users to obtain data products from the NOAA SAA via level II and level III catalog interoperability. The ODC is not part of the Release A.</p>
IMS-0860#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.</p> <p>The ECS interfaces with NOAA ADC (ODC is not part of the Release A) to allow ECS users to search, browse, order, and locate data.</p>
IMS-0870#A	<p>This requirement is verified by test.</p> <p>The system shall provide access to ADC and ODC data that; is stored by ADC and ODC archives and requested by EOSDIS users, and is required as ancillary data for production processing.</p> <p>The DAAC operator access NOAA ADC (ODC is not part of the Release A) ancillary data for production processing, in accordance with MOU's to NOAA ADC.</p>
NOAA0030#A	<p>This requirement is verified by demonstration.</p> <p>The system shall provide catalog interoperability between the ECS and the SAA to support the V0 protocol.</p> <p>The Release A Search and Order Tool and the SAA Information Management System (IMS) Server provide ECS the level III catalog interoperability from ECS to the SAA.</p>
NOAA0020#A	<p>This requirement is verified by test.</p> <p>The system shall maintain a list of data sets to support ECS standard product generation.</p> <p>The ECS interfaces with NOAA to support ECS access to NOAA data sets which are required as ancillary data for the generation of ECS standard products.</p>
NOAA0100#A	<p>This requirement is verified by demonstration.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive advertising information.</p> <p>The ECS user access the Advertising Service from the ECS Desktop to receive the NOAA ADC data holdings.</p>

NOAA0140#A	<p>This requirement is verified by test.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive User Authentication Results.</p> <p>During this test, SAA IMS Server sends the User Authentication Results to the ECS Release A Search and Order Tool via V0 Protocols.</p>			
NOAA0250#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the SAAs shall have the capability to receive Inventory Queries.</p> <p>During this test, ECS Release A Search and Order Tool sends the Inventory Queries to the SAA IMS Server via V0 Protocols.</p>			
NOAA0260#A	<p>This requirement is verified by test.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive Inventory Query Results.</p> <p>During this test, SAA IMS Server sends the Inventory Query Results to the ECS Release A Search and Order Tool via V0 Protocols.</p>			
NOAA0290#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the SAAs shall have the capability to receive Browse Requests.</p> <p>During this test, ECS Release A Search and Order Tool sends the Browse (Integrated and FTP) Requests to the SAA IMS Server via V0 Protocols.</p>			
NOAA0300#A	<p>This requirement is verified by test.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive Browse Results.</p> <p>During this test, SAA IMS Server sends the Browse (Integrated and FTP) Results to the ECS Release A Search and Order Tool via V0 Protocols.</p>			
<p>Test Pull Test table is still being updated.</p> <p>Inputs:</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Logs into the ECS desktop; brings up ECS version of the V0 Client (called the Release A Search and Order Tool).	
20	Expected Result: The "Welcome" screen appears after all the necessary information is entered.	
30	Tester: Invokes the Advertising Service icon from the ECS desktop to search for data at NOAA ADC.	
40	Expected Result: The system appears the Advertising Search Screen which enables the selection of parameters.	
50	Tester: - Clicks the Search Screen button and enters the search criteria or use GoTo menu, and select Search Screen.	
60	Expected Result: The System displays the GoTo Screen Functions window.	
	INVENTORY QUERY/RESULT	The Inventory Query allows the user to query the SAA inventory and the Inventory Result is to return metadata, including cost estimate data, describing the granules meeting the Inventory Query's search criteria.
70	Tester: Selects the Inventory "Search Type" from the Inventory Search screen and enters an Inventory Search for data at NOAA ADC.	
71	Tester: Selects the Inventory "Search Type" from the Inventory Search screen and enters an Inventory Search for data at NOAA ADC.	
72	Tester: Types the valid information into a field. or may use the system provided lists of valids values for selected fields on the search screen.	

73	Expected Result: The IMS displays the appropriate Dependent Valids List for that field.	
74	Tester: Clicks on each item to select values for a given field from the Valid List. Make the desired selection(s) and press "O.K" to return to the search screen.	
75	Expected Result: The IMS retrieves granule information associated with all selected datasets. The system performs an automatic inventory search and returns the user to the Search Screen.	
76	Tester: Executes the Search.	
77	Expected Result: The system displays a Communications Status screen window.	
80	Expected Result: The IMS retrieves the granule information associated with all selected datasets. The system performs an automatic inventory search.	
90	Tester: Clicks the "Data" button to view the data.	
100	Expected Result: The completed search generates the Inventory Results. The Inventory Results include dataset level and granule information.	
	GUIDE QUERY/RESULTS	The Guide Query/Results allows the user to retrieve SAA Guide documents.
110	Tester: Selects the "Guide" Search Type on the screen.	
120	Expected Result: The system displays the Guide Display Screen and access the Guide Search in one of the following three methods: Guide Type, Guide Info, and item.	
130	Tester: Performs a Free Text search by selecting the "Guide" Search Type and enters the word "DMSP".	
140	Expected Result: The system returns with a list of all guide documents with the word DMSP in them.	
150	Tester: Clicks on the document name to view that document.	
160	Expected Result: The system brings up a guide document.	

170	Tester: Searches for word(s) in the current document by clicking the "Find" from the screen.	
180	Expected Result: The system goes to the first occurrence of the word in the guide document.	
	BROWSE REQUEST	The Browse Request allows the user to obtain browse information for selected SAA products.
190	Tester: Enters an Inventory Search for GSFC DAAC in the IMS system.	
200	Expected Result: The IMS returns a field called "Browse Available" which indicates whether a browse product exists for a given granule.	
	FTP BROWSE RESULTS	The FTP Browse Results allow the user to return to the browse product requester information enabling him to retrieve his browse product from the ftp site.
210	Tester: Invokes the EOSView from the Desktop to view this browse image upon receiving notification from the ECS GSFC DAAC about browse product.	
220	Expected Result: The system allows the user to display the browse image product on his/her workstation.	
	INTEGRATED BROWSE RESULTS	The Integrated Browse Results allow the user to deliver an SAA browse product in response to Browse Request specifying an Integrated Browse Result.
230	Tester: Uses an Integrated Browse method to see a browse product for any granule.	
240	Expected Result: The user observes the image displayed on the Integrated Browse Display Screen.	

	PRODUCT REQUEST/RESULTS	The Product Request provides placement of orders for selected SAA products and the Product Result provides a confirmation of the SAA's receipt of the Product Request.
250	Tester: Submits an order for data for FTP from the GSFC ECS DAAC using the Search and Order Tool.	
260	Expected Result: (ECS System) The V0 Gateway receives order from the Search and Order Tool and translates order from the ODL to OODCE and creates order in MSS database and initializes MSS Order Status to RECEIVED.	
270	DAAC Computer Operator: Views SDSRV Order Status of QUEUED on the "request MainWindow" screen and details regarding order on the "RequestInfo" screen and sends transaction progress to the Search and Order Tool through the V0 Gateway.	
280	Expected Result: Views transaction progress on the Comm Status screen. The SDSRV retrieves, executes, updates and sends the order to Data Distribution (DDIST). The DDIST checks order against size and file thresholds and DDIST Order Status updated to STAGING in the MSS database.	
290	DAAC Computer Operator: Views DDIST Order Status of STAGING on the "Distribution Summary" screen and it's Status Details on the "Distribution Summary" screen.	
300	Expected Result: (ECS System) Using STMGT utilities, DDIST retrieves data from the archive (via AMASS) and places the data into Working Storage.	
310	Tester: Contacts GSFC DAAC User Services Representative for Status of order and the DAAC User Service Representative uses the Data Order Tracking Tool on the Release A Desktop to query status of order for user.	
320	Expected Result: (ECS System) DDIST copies selected data granules to Pull Storage; DDIST Order Status updated to TRANSFERRING; STMGT Pull monitor increments Access Count; DDIST Order Status updated to WAITING_FOR_SHIPMENT; DDIST sends eMail notification for order availability and SDSRV updates it's Order Status to COMPLETED.	
330	Tester: FTP's files to local workstation.	

340	Expected Result: (ECS System) Modified FTP Server notifies STMGT that the files have been pulled by user; STMGT Pull Monitor decrements Access Count; and DDIST Order Status updated to SHIPPED. The screen displays the ordered product request on screen	
	COST ESTIMATE REQUEST/COST ESTIMATE	The Cost Estimate Request/Cost Estimate provides the user with information on the cost of products that are requested.
350	Tester: Invokes the Advertising Service to request a cost estimate for the product which receives from the NOAA ADC.	
360	Expected Result: The screen displays the cost estimate for the product upon request.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.3.2 ECS User Access Request NOAA ADC Product

TEST Procedure No.: A100140.020\$G	Date Executed:	Test Conductor:
Title: ECS User Request NOAA ADC Product		
Objective: The objective of this test procedure is to verify that ECS user's request for NOAA ADC product is sent to the NOAA ADC. By using the guide queries, ECS user receives the detailed description of data sets and related entities. The ECS user must access the L0-L4 equivalent data sets, calibration data, documents, algorithms, correlative data, and ancillary data.		
Requirements	Acceptance Criteria	
DADS0145#A	<p>This requirement is verified by test.</p> <p>The system shall receive from the ADCs, at a minimum, the following for the purpose of product generation:</p> <ol style="list-style-type: none"> a. L0-L4 equivalent data sets b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms <p>The System receive L0-L4 equivalent data sets, Metadata, Ancillary data, Calibration data, Correlative data, Documents, and Algorithms from the NOAA ADC for product generation.</p>	
EOSD1710#A	<p>This requirement is verified by test.</p> <p>The ECS elements shall exchange with NOAA ADC and other data processing and archiving facilities, information including the following:</p> <ol style="list-style-type: none"> a. Directories b. Product Orders c. Order Status d. Science Data e. Management Data <p>The interface supports one-way interoperability from the NOAA Data Centers to the ECS DAACs.</p>	
IMS-0600#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide the capability to search a directory of information that describes whole EOSDIS, non-EOSDIS, and ADC earth science data sets.</p> <p>During this test, the ECS user searches a directory of information (by using the ECS Release A Search and Order Tool) that describes the NOAA ADC science data sets.</p>	

NOAA0210#A	<p>This requirement is verified by demonstration.</p> <p>The ECS shall have the capability to send and the SAAs shall have the capability to receive Guide Queries.</p> <p>During this test, the ECS sends the Guide Queries to the SAAs via V0 Protocols.</p>
NOAA0220#A	<p>This requirement is verified by demonstration.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive Guide Query Results.</p> <p>During this test, the ECS receives the Guide Query Results from the SAAs via V0 Protocols.</p>
NOAA0330#A	<p>This requirement is verified by demonstration.</p> <p>The ECS shall have the capability to send and the SAAs shall have the capability to receive Cost Estimate Requests.</p> <p>During this test, the ECS sends the Cost Estimate Requests to the SAAs via V0 Protocols.</p>
NOAA0340#A	<p>This requirement is verified by demonstration.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive Cost Estimates.</p> <p>During this test, the ECS receives the Cost Estimates from the SAAs via V0 Protocols.</p>
NOAA0410#A	<p>This requirement is verified by demonstration.</p> <p>The ECS shall have the capability to send and the SAAs shall have the capability to receive Product Requests.</p> <p>During this test, the ECS sends the Product Requests to the SAAs via V0 Protocols.</p>
NOAA0460#A	<p>This requirement is verified by demonstration.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive Spacecraft Schedules for SAA data sets requested by the ECS as ancillary data for ECS product generation.</p> <p>The ECS has not identified any need for Spacecraft Schedules at this time.</p>

NOAA0510#A	<p>This requirement is verified by test.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive data sets to be used as ancillary data for ECS standard product generation.</p> <p>The ECS utilizes a polling ftp interface to identify and acquire the ancillary data from NESDIS to support ECS standard product generation.</p>			
NOAA0530#A	<p>This requirement is verified by demonstration.</p> <p>The SAAs shall have the capability to send, to ECS users, SAA-cataloged information, to include as a minimum data products, calibration data, documents, and algorithm packages.</p> <p>The ECS interfaces with the SAAs to allow ECS users to search, browse, and order data products from the SAAs. The user can order available products, which may include calibration data, documents, and algorithm packages.</p>			
NOAA0560#A	<p>This requirement is verified by demonstration.</p> <p>The SAAs and the ECS shall have the capability to perform Schedule Adjudication via telephone.</p> <p>The ECS and NESDIS coordinates via telephone for the explanation and resolution of ancillary data delivery scheduling conflicts.</p>			
NOAA0570#A	<p>This requirement is verified by test.</p> <p>The SAAs shall have the capability to send and the ECS shall have the capability to receive Algorithm Packages contributed by the SAAs as EOSDIS resources.</p> <p>The ECS user orders for NOAA Algorithm Packages from the SAAs.</p>			
<p>Test Inputs: Pull Test table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Logs into the ECS desktop; brings up ECS version of the V0 Client (called the Release A Search and Order Tool).	
20	Expected Result: The "Welcome" screen appears after all the necessary information is entered.	
30	Tester: Invokes the Advertising Service icon from the ECS desktop to search for data at NOAA ADC.	
40	Expected Result: Both the ECS and SAA are exchanged directory level advertising information on datasets which is used by the SAA to determine ECS data holdings.	
50	Tester: Query to the SAA.	
60	Expected Result: The SAA receives the ECS's query.	
70	Tester: Generates queries for search SAA Guide and Inventory metadata, or to browse particular SAA products.	
80	Expected Result: The ECS user receives the request for SAA Guide, Inventory, and Browse data.	
90	Tester: Requests for Cost Estimate of an Contemplated Order of SAA product.	
100	Expected Result: The ECS user obtains the Cost Estimate for a request.	
110	Tester: Requests for a SAA product.	
120	Expected Result: The user obtains the status of SAA product delivery.	
130	Tester: Selects to order SAA product.	
131	(ECS User): Invokes the Release A Search and Order Tool.	
132	Expected Result: The Release A Search and Order Tool application starts up.	
133	(ECS User): Enters the query's parameters like spatial, temporal characteristics, parameters, etc. in the system.	
134	Expected Result: The Search and Order Tool queries all appropriate sites in Release A.	
135	(ECS User): Keys in necessary information for delivery on the Search and Order Tool screen.	
136	Expected Result: The ECS user gets the requested data either through FTP or Physical media.	
140	Expected Result: The ECS provides an user Authentication Request to the SAA.	
150	Tester: Requests for Authentication.	
160	Expected Result: The SAA grants access and returns a response indicating the level of user access privileges granted.	
170	Tester: Continues the search for requested SAA products.	

180	Expected Result: The ECS user access the requested SAAs products.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.3.3 Product Status Request

TEST Procedure No.: A100140.030\$G	Date Executed:	Test Conductor:
Title: Product Status Request		
Objective: The objective of this test procedure is to verify that the product delivery status request for the ECS user must send to the NOAA ADC and that product delivery status must receive by the ECS user.		
Requirements	Acceptance Criteria	
IMS-0620#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.</p> <p>The system provides an interface for users to obtain data products from the NOAA SAA via level II and level III catalog interoperability.</p>	
IMS-0860#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.</p> <p>This requirement verifies by sending the Requests for Guide data to the NOAA SAAs and ESDIS V0 IMS and receiving the Guide Request Results from the NOAA SAAs and ESDIS V0 IMS.</p>	
IMS-1310#A	<p>This requirement is verified by test.</p> <p>The IMS shall provide the capability to accept, from product requesters, product distribution status requests, retrieve the request status, and display the status to the requester for an ECS, ADC, or ODC data product.</p> <p>The ODC is not part of the Release A. During this test, user accesses the User Service (Advertising Service) to obtain an status of an ordered data.</p>	
NOAA0430#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the SAAs must have the capability to receive Product Delivery Status Requests.</p> <p>During this test, ECS sends the Product Delivery Status Requests to the SAAs via V0 Protocols.</p>	

NOAA0440#A	<p>This requirement is verified by test.</p> <p>The SAAs shall have the capability to send and the ECS must have the capability to receive Product Delivery Status.</p> <p>During this test, ECS receives the Product Delivery Status from the SAAs via V0 Protocols.</p>			
Test Inputs: Pull Test table is still being updated.				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Logs into the ECS desktop; brings up ECS version of the V0 Client (called the Release A Search and Order Tool).	
20	Expected Result: The "Welcome" screen appears after all the necessary information is entered.	
30	Tester: Invokes the Advertising Service icon from the ECS desktop to search for data at NOAA ADC.	
40	Expected Result: Both the ECS and SAA are exchanged directory level advertising information on datasets which is used by the SAA to determine ECS data holdings.	
50	Tester: Query to the SAA.	
60	Expected Result: The SAA receives the ECS's query.	
70	Tester: Generates queries for search SAA Guide and Inventory metadata, or to browse particular SAA products.	
80	Expected Result: The ECS user receives the request for SAA Guide, Inventory, and Browse data.	
90	Tester: Requests for Cost Estimate of an Contemplated Order of SAA product.	
100	Expected Result: The ECS user obtains a Cost Estimate for a request.	
110	Tester: Requests for a SAA product.	
120	Expected Result: The user obtains the status of SAA product delivery.	
130	Tester: Selects to order SAA product.	
140	Expected Result: The ECS provides an user Authentication Request to the SAA.	
150	Tester: Requests for Authentication.	
160	Expected Result: The SAA grants access and returns the response indicating the level of user access privileges granted.	
170	Tester: Sends a Request for SAA products from the Release A Search and Order Tool (ECS) to the SAA IMS Server.	
180	Expected Result: The SAA responds with a Product Result message and by delivering the requested product directly to the ECS user. The Product Result provides a confirmation of the SAA's receipt of the Product Request.	
190	Tester: Verify that the SAA sends Product Result from the IMS Server (SAA) to the Release A Search and Order Tool.	

210	Expected Result: The SAA products are delivered directly to the requester.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.3.4 ECS User Search

TEST Procedure No.: A100140.040\$G	Date Executed:	Test Conductor:
Title: ECS User Search		
Objective: The objective of this test procedure is to verify that the ECS user can construct and execute queries that search both the ECS and the NOAA ADC archives. The ECS user queries for a product that must search both the ECS and NOAA ADC archives.		
Requirements	Acceptance Criteria	
EOSD5000#A	<p>This requirement is verified by test.</p> <p>The verification method was changed from analysis to test.</p> <p>The system shall provide heterogeneous services, connect with different topologies, and have various levels of reliability to ADC.</p> <p>The system allow the ECS Client to search, browse and order data from NESDIS SAA. The Advertising Service access the Advertisements for the ECS and non-ECS (NOAA ADC) data and services.</p>	
IMS-0620#A	<p>This requirement is verified by demonstration.</p> <p>The system shall provide access to inventories of selected ODCs and ADCs.</p> <p>The system provides an interface for users to obtain data products from the NOAA SAA via level II and level III catalog interoperability.</p>	
IMS-0860#A	<p>This requirement is verified by demonstration.</p> <p>The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.</p> <p>The ECS interface with NOAA to allow ECS users to search, browse, order, and locate data.</p>	

IMS-0870#A	<p>This requirement is verified by test.</p> <p>The system shall provide access to ADC and ODC data that; is stored by ADC and ODC archives and requested by EOSDIS users, and is required as ancillary data for production processing.</p> <p>The DAAC Operator access NOAA ADC ancillary data for production processing.</p>			
NOAA0530#A	<p>This requirement is verified by demonstration.</p> <p>The SAAs shall have the capability to send, to ECS users, SAA-cataloged information, to include as a minimum data products, calibration data, documents, and algorithm packages.</p> <p>This is a requirement on NOAA. ECS has no corresponding requirements. No action by ECS required.</p>			
NOAA0720#A	<p>This requirement is verified by test.</p> <p>The ECS shall have the capability to send and the NMC shall have the capability to receive Product Availability Queries.</p> <p>During this test, ECS sends the Product Availability Queries to the NMC via V0 Protocols.</p>			
NOAA0800#A	<p>This requirement is verified by demonstration.</p> <p>The NOAA Data Centers shall have the capability to send and the ECS shall have the capability to receive advertising information.</p> <p>The NOAA interface between ECS and the NOAA Data Centers supports L1 catalog interoperability. Each Data Centers provides directory-level information advertising their data holdings to the ECS.</p>			
<p>Test Inputs: Pull Test table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Invokes the Advertising Service icon from the ECS desktop to search for data at V0 GSFC DAAC.	
20	Expected Result: The system appears the Advertising Search Screen which enables the selection of parameters.	
30	Tester: Clicks the Search Screen button and enters the search criteria	
40	Expected Result: The GoTo Screen Functions window appears on the screen..	
50	Tester: Select the Inventory by clicking Search Type name from the GoTo Screen.	
60	Tester: Enter Rectangle Nlat: 60; Elon -158; Slat: 58; Wlon: -160 under the "Geographical Information" column.	
70	Tester: Enter the Brightness Temperature; Clouds; Humidity; Ozone; Pigment Concentration; Radar Backscatter; Radiance; Sea Surface Temperature.	
80	Tester: Type 1 under the "Number of Granules returned Dataset" column.	
90	<p>Expected Result: The system is listed the results for queries to GSFC ECS DAAC and NOAA-SAA.</p> <p>GSFC ECS DAAC: ANNUAL PATHFINDER LAND 10 DAY MOSAICS (Integrated and FTP Browse) ANNUAL PATHFINDER LAND DAILY MOSAICS (Integrated and FTP Browse) TOMS DAYGRIDS UARS ISAMS L3 UARS MLS L3</p> <p>NOAA-SAA: AVHRR-GAC LAC HRPT (Integrated and FTP Browse)</p>	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.1.3.5 ECS User Access & Search of MSFC SCF Products

TEST Procedure No.: A100140.050\$G		Date Executed:		Test Conductor:	
Title: ECS User Access & Search of MSFC SCF Products					
Objective: This test procedure was added after the CCR #96-0411B has been approved for the Deletion of ECS MSFC DAAC. The objective of this test procedure is to verify that the ECS user can access and search the MSFC SCF test data sets. The user queries for a simulated LIS test data products that must search the MSFC V0 DAAC.					
Requirements			Acceptance Criteria		
EOSD5030#A		<p>This requirement is verified through demonstration.</p> <p>The ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.</p> <p>The user initializes the ECS Desktop's Advertising service which use the WWW and other Internet servers to search and retrieve data.</p>			
IMS-0600#A		<p>This requirement is verified through demonstration.</p> <p>The IMS must provide the capability to search a directory of information that describes whole EOSDIS, non-EOSDIS, and ADC earth science data sets.</p> <p>During this test, the IMS Advertising service tool of the ECS Client must search a directory of services that describes the LIS datasets.</p>			
Test Inputs: Pull Test table is still being updated.					
Data Set Name	Data Set ID	File Name	Description	Version	

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Invokes the Advertising Service icon from the ECS desktop to search for LIS data at MSFC V0 DAAC.	
20	Expected Result: The system appears the Advertising Search Screen which enables the selection of parameters.	
30	Tester: Clicks the Search Screen button and highlights the search criteria "Alphabetical Index of Advertisements".	
40	Expected Result: The System displays the window with a keyboard representation.	
50	Tester: Clicks "L" for LIS data.	
60	Expected Result: The Search Result screen appears and it displays the Products, Providers and Services information.	
70	Tester: Clicks on a Search Result.	
75	Expected Result: The Service Display screen appears and it shows the contents for LIS Product List, Provider, Contact and Group information.	
Data Reduction and Analysis Steps:		
Signature:		Date:

10.2 Science Computing Facility (SCF) User Scenario

The SCF User Scenario demonstrates to an SCF user that the EOS investigators are provided access to the ECS toolkits of the Science Computing Facilities located at the Goddard Space Flight Center (GSFC) and Langley Research Center (LaRC). This access provides EOS investigators with the ability to develop and maintain standard data production software; perform quality assurance (QA) of products; administer and manage local data bases for each site; request production status and history files; request resource usage updates; and update calibration coefficients. The science investigator is assured of the ECS capability to develop and transmit science data production software to the SCF within the contents of an initial Toolkit

Delivery Package. This initial Toolkit Delivery Package contains the Science Data Production tools that are necessary to begin development. The process for completed development package delivery to the DAAC and integration and test procedures for these packages is also confirmed.

QA functions at a SCF are demonstrated and evaluated. These functions include QA initial activities when an apparent data problem is detected and reported via a Data Quality Request Notification from the DAAC to a SCF, such as the steps taken to assure investigator confirmation of the problem, transfer of the presumed erroneous data product from its DAAC archive location to the SCF, and QA access to ancillary data such as history files to facilitate the QA investigations.

The product history file standard format is analyzed to assure inclusion of specific file components including, the algorithms used in development, the science investigators that developed the software, input databases used, and any atypical input options that might have been used in running the software.

Procedures are reviewed to assure that activities are identified for receiving data into the SCF, as well as assuring that the products that are developed and distributed at the SCF are managed by the DAACs configuration management, Site Software Manager.

SCF's ability to update calibration coefficient procedures are confirmed including, procedures for science investigator requests for, and receipt of, coefficient files from the DAAC, as well as confirmation that updates are returned electronically to the DAAC as part of the Science Production Software Delivery Package.

10.2.1 GSFC SCF/ECS Sequence

The GSFC SCF/ECS sequence verifies that ECS is accessible to a user at the MODIS SCF. The MODIS SCF is concerned with the data that is processed by the GSFC DAAC. MODIS data and products are the responsibility of the GSFC DAAC. For this sequence users conduct Algorithm Integration and Testing, Product QA, Data Search, Browse, Request and Receive, Data Management Services, and Toolkit Testing.

Configuration: The subsystem needed to perform this sequence of tests are as follows. CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

- MODIS SCF
- GSFC V0 DAAC
- SMC

Operator Position(s): The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

- DAAC Production Monitor
- DAAC Production Planner
- DAAC Science Data Specialist
- DAAC Science Software I&T Support Engineer
- DAAC Configuration Management (CM) Administrator

Operational Scenario(s): The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release A document (605/OP1), that were used to develop tests in this sequence of tests are listed:

- Add New Science Algorithm Scenario (Section 3.4.6)
- Network Data Distribution (Pull) Scenario (Nominal) (Section 3.11.1)

Test Dependencies: The following table identifies the test procedure(s) in a sequence of tests that should be run prior to or concurrently with a sequence or test procedure.

Test Procedure No.	Site/Procedure No.	Comments
A100230.020\$G	GSFC/A100230.010\$G	Prior

10.2.1.1 Algorithm Integration and Test at the GSFC DAAC

TEST Procedure No.: A100230.010\$G	Date Executed:	Test Conductor:
Title: Algorithm Integration and Test at the GSFC DAAC		
Objective: This procedure tests the GSFC DAAC's Science Software Integration and Test Team's (SSITT) ability to install, verify, archive, and report on science software ingested from the MODIS SCF. Next, it verifies the user interfaces between the ECS DAAC and the MODIS SCF supports continued testing and development of science algorithms. Finally, this test verifies the MODIS SCF's ability to search, retrieve, and check-out data and algorithms from the DAAC archive.		

Requirements	Acceptance Criteria
DADS0140#A	<p>This requirement is verified through test.</p> <p>Each DADS shall receive from other DAACs, at a minimum, the following for the purpose of product generation:</p> <ol style="list-style-type: none"> a. L0-L4 b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms <p>The SDSRV CI must accept Data Insert Requests from other Data Servers. The SDSRV CI must interface with the STMGT CI to provide storage for Research results (articles, algorithms, data sets, software). Only item g is tested in this procedure. Items a-f are tested in the Push scenario group.</p>
DADS0180#A	<p>This requirement is verified through test.</p> <p>Each DADS shall receive from the users, at a minimum, the following:</p> <ol style="list-style-type: none"> a. Metadata b. Correlative data c. Documents d. New derived data sets <p>The INGST CI must provide the capability to request storage of a data granule by means of a Data Insert Request to the SDSRV CI/DDSRV CI associated with the type of the data granule.</p>
DADS0190#A	<p>This requirement is verified through test.</p> <p>Each DADS shall receive from the SCF, at a minimum, the following:</p> <ol style="list-style-type: none"> a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms <p>After receiving correlative data, Metadata associated with correlative data, documents, etc., the system logs show that the science software and all accompanying information (i.e., documentation) is received and accounted for. The tester verifies that the history logs are updated to reflect the ingested data and all accompanying information.</p>

DADS0220#A	<p>This requirement is verified through test.</p> <p>Each DADS shall accept, at a minimum, the following data types in support of development of initial calibration:</p> <ol style="list-style-type: none"> a. Instrument calibration data b. Scientific calibration <p>The SDSRV CI must be capable of receiving Instrument calibration data and Scientific calibration data.</p>
DADS0281#A	<p>This requirement is verified through test.</p> <p>Each DADS shall be capable of ingesting and storing data to support the instrument science team(s) in:</p> <ol style="list-style-type: none"> a. Pre-launch checkout of their instruments b. Pre-launch science checkout c. Development of initial calibration information <p>The tester verifies that the history logs are updated to reflect the data ingest, in addition to, the archiving of the calibration data. This test procedure only covers sub-letter (c) of this requirement. Sub-letters (a) and (b) are not covered in this test procedure.</p>
DADS0450#A	<p>This requirement is verified through test.</p> <p>Each DADS shall provide storage, at a minimum, for the following scientist provided data:</p> <ol style="list-style-type: none"> a. Special data products b. Associated correlative data sets c. Associated ancillary data sets d. Associated calibration data sets e. Research results (articles, algorithms, data sets, software) f. Instrument characterization data sets g. Associated Metadata <p>The tester will query the archive and verify that the scientist provided data has been stored.</p>
DADS1070#A	<p>This requirement is verified through test.</p> <p>The DADS shall send data check and storage status to the provider of ingest data.</p> <p>The INGST CI must provide authorized operations staff the capability to view the status of ongoing ingest processing. Displayed status must include the External Data Provider, Ingest Request Identifier, total ingest data volume, and Request State. The tester will provide the MODIS SCF with a data check and archive status report to verify the accuracy and completeness of the science software that was received from the MODIS SCF.</p>

DADS1080#A	<p>This requirement is verified through test.</p> <p>Each DADS shall maintain a data receipt log.</p> <p>The tester verifies that the following information is recorded in the Ingest History Log: ingest start/stop dates and times, ingest request identifier, external data provider, final service request status, data type identifiers, ingest data volume, number of data sets, and number of data files. The tester will query the data receipt log before and after the ingest of MODIS data and verify that the ingest has occurred.</p>
DADS2380#A	<p>This requirement is verified through demonstration.</p> <p>Each DADS shall send to the SCF, at a minimum, the following:</p> <ul style="list-style-type: none"> a. L0-L4 b. Expedited data d. Metadata e. Ancillary data f. Calibration data g. Correlative data h. Documents i. Algorithms <p>The tester verifies that the history logs at the MODIS SCF are updated to reflect the ingested data has been received from the GSFC DAAC.</p>
EOSD1760#A	<p>This requirement is verified through test.</p> <p>The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ul style="list-style-type: none"> a. Software Problem Reports b. Documentation c. Metadata (copies of inventories) d. Browse data e. Archived data f. Accounting information <p>The listed items will be sent to users via FTP and electronic mail. These problem reports must be documented with metadata containing descriptions of the data types found within the problem reports and accounting information about the problem reports.</p>
EOSD5040#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the combination of services from ECS and other data providers in arbitrary, i.e. non-predefined, ways as needed by users to conduct EOS science.</p> <p>The WKBCH CI must provide the user the capability to identify data and services provided by ECS. In testing this requirement a user selects the services from the CLIENT subsystem he wishes to use, integrates the service, and uses the service in any order the user wishes.</p>

ESN-0370#A	<p>This requirement is verified through test.</p> <p>The ESN shall provide interactive virtual terminal services.</p> <p>The CSS Virtual Terminal must be based on industry standard and accepted protocol. The interactive virtual terminal must also provide guest access to non-registered users.</p>
IMS-0440#A	<p>This requirement is verified through test.</p> <p>The IMS shall maintain information that describes spacecraft housekeeping and ancillary data parameters stored in the archives.</p> <p>The DDSRV CI must receive information that describes spacecraft housekeeping and ancillary data parameters stored in the Science Data Server. The tester verifies that they are able to access the spacecraft housekeeping and ancillary data parameters through the GSFC DAAC inventory and directory data base.</p>
IMS-0450#A	<p>This requirement is verified through test.</p> <p>The IMS shall accept and validate new and updated metadata for all ECS archive data that has been ingested at the DADS.</p> <p>The SDSRV CI must provide the capability to validate metadata and updated metadata before insertion into the inventory. The tester verifies that the new and/or updated metadata is recorded in the log and stored in the GSFC DAAC inventory and directory data base.</p>
IMS-1720#A	<p>This requirement is verified through test.</p> <p>The IMS shall provide the capability to produce reports that relate data sets to:</p> <ul style="list-style-type: none"> a. Processing algorithms used for data generating at the PGS b. Software used for data generation at the PGS c. Parameters used for data generation at the PGS d. Data recipients <p>The DDIST CI must provide the capability to generate reports on the distribution activity for a period specified by the operations staff and must provide the operations staff with the capability to display the Distribution Activity Log. The tester verifies and reviews the system generated reports relating data sets to, for example, software used for data generating at the PGS.</p>
PGS-0600#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide an algorithm and calibration test and validation environment that is fully compatible with but isolated from the operational production environment.</p> <p>The user must have the capability to run binary executables without impacting other ongoing DAAC activities.</p>

PGS-0602#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to accept POSIX-compliant science algorithms and compile algorithm source code written in a standard programming language (e.g., FORTRAN, C, Ada).</p> <p>The operations staff will ensure the POSIX.2 compliant platform in the SPRHW CI and AITHW CI have a development environment installed that support C, C++, FORTRAN, etc.</p>
PGS-0610#A	<p>This requirement is verified through test.</p> <p>The PGS shall accept from the SCFs new or modified calibration coefficients to be validated in the test environment. Calibration coefficients shall contain the following information, at a minimum:</p> <ol style="list-style-type: none"> a. Identification of coefficient data set b. Calibration coefficient values c. Author and version number d. Identification or related processing algorithm e. Start and stop date/time of applicability f. Date and time g. SCF identification h. Reasons for update. <p>The system log is updated to reflect that all of the information listed above in a Science Software Delivery is received and accounted for.</p>
PGS-0630#A	<p>This requirement is verified through test.</p> <p>The PGS shall send the DADS new or modified calibration coefficients which shall contain the following information at a minimum:</p> <ol style="list-style-type: none"> a. Identification of coefficient data set b. Calibration coefficients values c. Author and version number d. Identification of related processing science software e. Start and stop date/time of applicability f. Documentation. <p>The system log is updated to reflect that all of the information listed above is received from the Science Data Server.</p>

PGS-0640#A	<p>This requirement is verified through test.</p> <p>The PGS shall accept from the SCF new or modified Standard Product algorithms to be tested at the processing facility. This software shall be received into the test environment and shall contain the following information at a minimum:</p> <ol style="list-style-type: none"> a. Algorithm identification b. Algorithm source code c. List or required inputs d. Processing dependencies e. Test data and procedures f. Algorithm documentation <p>The system log is updated to reflect that all of the information listed above is received and accounted for.</p>
PGS-0650#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to validate the required operational algorithm characteristics prior to scheduling algorithm test time. These characteristics shall include at a minimum:</p> <ol style="list-style-type: none"> a. Language b. Operational impacts (i.e., algorithm software size, required resources) c. Algorithm documentation d. Data handling standards, as appropriate e. Units and models used f. Operational compatibility g. Required metadata outputs. <p>The system log is updated to reflect that all of the information listed has been validated. The Science Software documentation must be stored in any of the following formats: PostScript, ASCII, Hypertext Markup Language (HTML), Microsoft Word, WordPerfect, Adobe Acrobat Portable Document Format (PDF).</p>
PGS-0860#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to schedule and coordinate algorithm and calibration coefficients test time in the test environment with the appropriate SCF.</p> <p>The PLANG CI must have the capability to plan algorithm and calibration coefficient test time in the test environment. Only manual scheduling of test time will be in Release A, therefore the operations staff will phone the SCF to schedule test time.</p>
PGS-0870#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to schedule algorithm test resources that do not interfere with the operational production environment.</p> <p>The SPRHW CI and the PLANG CI must be capable of supporting science software testing and scheduling of algorithm test Data Processing Requests without interfering with normal operations.</p>

PGS-0900#A	<p>This requirement is verified through test.</p> <p>The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum:</p> <ol style="list-style-type: none"> a. Science software identification b. Test time(s) c. Processor identification d. Test results. <p>The DDIST CI must provide the capability to place data in publicly available disks for users to pull the data, via ftp, at their discretion. Files containing the items listed above must be transferred between the PGS and the SCF for analysis.</p>
PGS-0910#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to support analysis of algorithm test results.</p> <p>Test results must be able to be displayed and/or written to files.</p>
PGS-0915#A	<p>This requirement is verified through test.</p> <p>The PGS shall support remote science software integration and test activities at the DAACs including:</p> <ol style="list-style-type: none"> a. Executing code checkers, compiling, linking, debugging code, file comparison and science software resource profiling from the SCF. b. Interactive remote access to a job scheduling tool for defining and executing jobs.
PGS-0920#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to validate, through testing, that SCF processing algorithms will execute properly in the operational environment. Validation shall include final compilation and linkage of the source code and testing to verify proper software execution in the operational environment based on indicated data and test results provided by the SCF and the investigator, but shall not include scientific validation of products.</p> <p>The tester will ensure the SCF processing algorithms execute properly in the operational environment.</p>
PGS-0925#A	<p>This requirement is verified through test.</p> <p>The PGS shall validate algorithms used for conversions, calibrations and transformations of EOS engineering data.</p> <p>The tester reviews the log to verify that the results of the validation checks are recorded.</p>

PGS-0930#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to transfer validated algorithm software and calibration coefficients from the test environment to the operational environment to be used in the production of Standard Products.</p> <p>The AITTL CI must provide to the operations staff, via a GUI, the capability to display a list of PGE Database Entries.</p>
PGS-0940#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide storage for all candidate algorithms' software executables and calibration coefficients.</p> <p>The tester verifies that the software executables and calibration coefficients are stored, the history log updated, and a storage notice is sent to the provider of the ingested data.</p>
PGS-0950#A	<p>This requirement is verified through test.</p> <p>The PGS shall interface to maintain configuration control of all algorithms and calibration coefficients used in operational Standard Product production. Controlled information shall contain at a minimum:</p> <ul style="list-style-type: none"> a. Source code including version number and author b. Benchmark test procedures, test data, and results c. Date and time of operational installation e. d. Compiler identification and version f. Final science software documentation. <p>MSS configuration management application service must track:</p> <ul style="list-style-type: none"> a. ECS subsystems, networks, and devices such as workstations, servers, and routers b. ECS releases and site baselines c. ECS hardware and software resources designated as configuration items d. Specifications associated with configuration items e. technical documentation and test materials f. scientific algorithms
PGS-0960#A	<p>This requirement is verified through test.</p> <p>The PGS shall send the DADS new or modified algorithms. This delivery shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Source code including version number and author b. Benchmark test procedures, test data and results c. Date and time of operational installation d. Final algorithm documentation e. Calibration coefficient values <p>The AITTL CI must provide to the operations staff to retrieve a copy of a specific Science Software Archive Package and to store a Science Software Archive Package to the Data Server.</p>

PGS-1010#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide mass storage allocation subroutines that provide algorithms with a means for dynamic allocation of storage for temporary files.</p> <p>Algorithms must be stored at the PGS.</p>
PGS-1250#A	<p>This requirement is verified through test.</p> <p>The PGS shall send the DADS the calibrated ancillary data.</p> <p>The PRONG CI must destage ECS Data Products to the SDSRV CI.</p>
SCF-0010#A	<p>There is no verification method for this requirement.</p> <p>The SCF interface shall consist of an ESDIS approved computing platform that shall have a C compiler. To access FORTRAN routines in the ECS Toolkits, the platform shall also have a FORTRAN compiler.</p> <p>External only requirement: Information only. No action is required by ECS.</p>
SCF-0020#A	<p>There is no verification method for this requirement.</p> <p>The SCF interface platform shall supply the DCE client and have an I/O communication port and the ability to run TCP/IP software for communication to the ECS.</p> <p>External only requirement: Information only. No action is required by ECS.</p>
SCF-0025#A	<p>There is no verification method for this requirement.</p> <p>The SCF interface platform shall provide one of the following levels of security for interoperation with ECS:</p> <ol style="list-style-type: none"> a. Kerberized authentication for bi-directional file transfers. b. User of Distributed Computing Environment (DCE) for authentication of users, authorization of users for access to services such as remote file access, and provision for integrity of data being transferred. <p>External only requirement: Information only. No action is required by ECS.</p>
SCF-0030#A	<p>There is no verification method for this requirement.</p> <p>The SCF interface platform shall have adequate computing resources for the storage, compilation, linking, and execution of ECS supplied software resident on the platform.</p> <p>External only requirement: Information only. No action is required by ECS.</p>

SCF-0040#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to send to the SCFs the Data Production Software Specification Requirements describing what is required for completing the Initial Data Production Software Specifications.</p> <p>The system log is reviewed to ensure the specification requirements were received.</p>
SCF-0070#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.</p> <p>This requirement must be followed by both the SCF and ECS for the data production software to be integrated into the production environment.</p>
SCF-0080#A	<p>This requirement is verified through demonstration.</p> <p>The ECS shall have the capability to provide an Interactive Session Dialog with the SCF. This dialog, to aid integration and test of the data production software into the ECS production environment, shall support, at a minimum, general communications between the ECS and the SCF that include logins, mail messages, status reports, test coordination, test execution scripts, and solutions to minor problems.</p> <p>This dialog occurs using various email and voice messages exchanged between the science software integration and test personnel and the SCF investigator team during the science software integration and test process and must support the integration and test process of data production software.</p>
SCF-0090#A	<p>This requirement is verified through test.</p> <p>The SCF shall have the capability to provide ECS with the Data Production Software Delivery Package with "Required Items For Delivery" as specified by the Science User's Guide and Operations Procedure Handbook for the ECS Project.</p> <p>The ECS user must verify the Software Delivery Package was received and it is specified correctly.</p>
SCF-0100#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.</p> <p>These products must be sent to the SCF on tape, electronic mail, FTP, etc.</p>

SCF-0110#A	<p>This requirement is verified through demonstration. Note: This verification method was changed from test to demonstration.</p> <p>The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.</p> <p>This requirement is verified once an email message between the DAAC and SCF has been sent and received.</p>
SCF-0120#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.</p> <p>Data Production Software updates must be sent to the ECS.</p>
SDPS0025#A	<p>This requirement is verified through test.</p> <p>The SDPS shall accept scientific and non-scientific investigator supplied dataset specific data transformations.</p> <p>The SDSRV CI must be capable of receiving Science Software Archive Packages.</p>
SDPS0032#A	<p>This requirement is verified through test.</p> <p>The SDPS shall provide the Principal Investigators (PI's) and the other science users with the updated metadata for the assessment of data product quality.</p> <p>The SDSRV CI must supply QA statistics and metadata associated with QA statistics to the DDIST CI.</p>
SDPS0090#A	<p>This requirement is verified through inspection.</p> <p>The SDPS shall interface with the PIs and the other science users to support the development and testing of data product algorithms and QA of produced data products.</p> <p>The ECS staff must be able to communicate with the SCFs electronically via the network, via email, by teleconferences, etc.</p>

SDPS0140#A	<p>This requirement is verified through inspection.</p> <p>The SDPS shall support element, system, and subsystem test activities throughout the development phase.</p> <p>The SPRHW CI must be capable of supporting science software test without impact to normal operations and test activities throughout the development phase. The completion of this test will satisfy this requirement. This test procedure only covers “system” test activities. This test procedure does not cover “element” or “subsystem” test activities.</p>
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Test Inputs: Pull test data table is still being updated.

Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures

This test uses PUSH and PULL functionality to accomplish verification of the AI&T process. The planning, scheduling, archiving, and reporting activities used to conduct this test are PUSH related functions that have been moved here to ease the validation process. The MODIS SCF initiates communications with the GSFC DAAC and coordinates the planning and scheduling activities required to conduct the AI&T testing. Once the AI&T has been scheduled, the GSFC DAAC prepares the data requiring QA and makes it available for retrieval by the MODIS SCF. The SCF pulls the data from the GSFC DAAC and conducts the PRODUCT QA using the toolkits developed for this activity. The SCF then notifies the DAAC that the testing of the AI&T has been completed. The DAAC then conducts their site specific testing and generates the test reports as required. The DAAC makes the reports available to the SCF.

Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	PUSH section receives the daily schedule from the planning and scheduling section and begins to coordinate with the MODIS SCF about scheduling and testing the AITO software without affecting the day-to-day operations of the DAAC and the SCF.	
20	GSFC DAAC: ECS sends an email DAN to the SCF to announce that the I&T Requirements have been staged for pull by the SCF via kftp (For Release A, the MODIS SCF electronically accesses the Software Developer's Guide to Preparation, Delivery, Integration and Test with ECS (DID 205, Part 4) document from EDHS on the WWW.).	
30	Expected Results: The MODIS SCF follows the instructions within the DAN and accomplishes the kftp.	
40	Expected Results: The MODIS SCF receives the I&T requirements and test specifications from the SSITT at the GSFC DAAC.	
50	GSFC DAAC: ECS Software Package Subscription Acknowledgment (in the form of an email message) is sent to the MODIS SCF via the SCF Campus Network.	
60	Expected Results: GSFC receives the DAN acknowledgment.	
70	GSFC DAAC: ECS Software Package Announcement is made to the SCF via email and is available for pickup from the ECS Data Handling System (EDHS) using password-protected ftp.	
80	Expected Results: The SCF "pull's" the package from the ECS.	
90	MODIS SCF: MODIS SCF begins an Interactive Session Dialog with the ECS.	
100	Expected Results: E-Mail and voice communications between the DAAC and the SCF begin in order to coordinate the SSI&T schedule to ensure that adequate staff and system resources are available to support the delivery of the science software to the GSFC DAAC.	

110	Expected Results: Date to deliver science software is established after schedules have been established, resources ensured, and staff scheduled.	
120	Tester: The SDP Software is placed under SSI&T software configuration management control at the GSFC DAAC using the ClearCase configuration management tool.	
130	Expected Results: The software is maintained under CM.	
140	Tester: The SDP Software must be compiled and linked with the GSFC DAAC version of the SDP Toolkit. The GSFC DAAC version of the SDP toolkit contains actual links with the ECS processing software which were only “stubs” in the toolkit version available to the MODIS SCF.	
150	Expected Results: The SDP Software is compiled and linked with the GSFC DAAC version of the SDP Toolkit.	
160	Tester: Standalone test cases are run employing the suite of test data provided by the MODIS SCF.	
170	Expected Results: The output of the science software at the GSFC DAAC is the same as that obtained from the MODIS SCF. Resource usage is measured during these tests.	
180	Tester: The SDP Software information is entered into the Planning Data Base. This information includes Product Generation Executive (PGE) identifier and version number, input and ancillary data dependencies, activation rules, and the resource profile.	
190	Expected Results: The Planning Data Base is updated with the SDP Software.	
200	Tester: Operational testing is performed. Prior to launch, simulated data supplied by the IT is used. For post-launch deliveries of SDP Software upgrades, a period of testing in parallel with the current production version is performed.	
210	Expected Results: Problem reports, if any, are generated and entered in the DDTs and copies of the problem reports are made available to the SCF.	
220	GSFC DAAC: Sends DAN's for the Test Products after completion of the SI&T to the SCF's.	
230	Expected Results: SCF acknowledges receipt of the DAN and Pull's the QA and problem reports from the DAAC.	
240	GSFC DAAC: Sends Test Products to the SCF's for special processing.	
250	Expected Results: The Test Products must be received at the SCF.	
260	MODIS SCF: Sends Test Product Reviews to the ECS's after processing.	
270	Expected Results: The Test Product Reviews are received at the GSFC ECS.	
	ADD NEW SCIENCE ALGORITHM	
280	DAAC Configuration Management (CM) Administrator: In response to an approved CCR, an SSI&T work area in the software library for the algorithm.	

290	Expected Results: The SSI&T work area is set up in the software library.	
300	DAAC Configuration Management Administrator: Initialize ClearCase and use the “admin” menu, providing the name of the algorithm and an estimate of its size and specifying the location for the work area.	
310	Expected Results: ClearCase configures an SSI&T storage area for the specified algorithm and sets max and reclaim size parameters needed for periodic database scrubbing.	
320	DAAC Science Software I&T Support Engineer: Along with the SDPS/W developer, notifies the DAAC’s Science Data Specialist and CM Administrator via e-mail that a set of files comprising the algorithm has arrived at the DAAC and is ready for loading into the SSI&T work area of the library. The name of the algorithm, the name(s) and structure of the files to be loaded into ClearCase, and the format of the files (i.e., MVFS, archive, UNIX, etc.) are included in the message.	
330	Expected Results: E-mail facility delivers and displays the message.	
340	DAAC CM Administrator: Use ClearCase file conversion scripts to load the algorithm files to be stored.	
350	Expected Results: ClearCase creates sub-directories, files, and branches in the work area for the new algorithm; loads the algorithm files; attaches ClearCase metadata, assigning default values; sets default access privileges; and logs all library change events.	
360	DAAC Science Software I&T Support Engineer: Begins the stand-alone portion of SSI&T with the SDPS/W developers. They use ClearCase’s “Building” menu to “make” executables with the SCF version and the DAAC version of the SDP Toolkit according to DAAC-IT agreements and SSI&T procedures. For each build, the engineer specifies the makefile to use, the target(s) to build, and any clearmake options desired in response to ClearCase prompts.	
370	Expected Results: ClearCase controls the builds, tracking derived objects and creating build records which ClearCase saves for re-creating the builds. Library change events are logged.	
380	DAAC Science Software I&T Support Engineer: Along with the SDPS/W developers, list the contents of the build to confirm the build ran as intended. They use ClearCase’s “Building” menu, selects “Display config rec” then “Recursive (long)”. They enter the name of the newly built target when prompted by ClearCase.	
390	Expected Results: ClearCase generates the requested list.	
400	DAAC Science Software I&T Support Engineer: Reviews the logs generated by ClearCase. It is discovered from stand-alone testing that minor software changes are needed. SDPS/W developers use DDTS to compose and save a bug report.	

410	Expected Results: DDTS stores the bug report and notifies designated personnel.	
420	DAAC Science Software I&T Support Engineer: Along with the SDPS/W developers, use ClearCase's "view" menu and/or view-tag browser to locate the latest file versions, then use the file browser to select the files to modify. Use the checkout tool on the toolbar to obtain copies. Supply the bug number and a checkout comment when prompted by ClearCase.	
430	Expected Results: ClearCase lists available views, then creates a private work area for the view selected. After checking with DDTS to verify the bug report exists, ClearCase makes the named file version(s) available for modification and sets the checkoutStatus flg to preclude unintended concurrent changes.	
440	DAAC Science Software I&T Support Engineer: After ensuring the SDPS/W developers have used available software maintenance tools to modify, compile, and verify checked out files, use the "checkin" tool on ClearCase's toolbar to save the changes in the library by entering the bug number and a checkin comment when prompted.	
450	Expected Results: ClearCase interacts with DDTS to verify that the bug report exists and has been approved for implementation. ClearCase then checks in the changes on a "maintenance" branch in the library, records the bug number and comments, and sets the promotion Level attribute of changed files to "maintenance". Library change events are logged.	
460	DAAC Science Software I&T Support Engineer: Initiate new builds along with SDPS/W developers to complete stand-alone testing.	
470	Expected Results: ClearCase controls the builds, tracking derived objects and creating build records.	
480	DAAC Science Software I&T Support Engineer: After stand-alone testing, run the "software ready" script along with the SDPS/W developers to mark the versions of files that are ready for integrating with the production system for DAAC testing.	
490	Expected Results: ClearCase assigns version labels to the files and sets the state attributes to "ready for integration testing". Library change events are logged.	
500	DAAC Science Data Specialist: Use DDTS to compose and submit a CCR requesting that the algorithm be uploaded to the SDPS Data Server and the Planning databases be populated.	
510	Expected Results: DDTS stores the CCR and notifies designated personnel.	

520	DAAC CM Administrator: After the delivery have inspected by the DAAC and upon CCB approval, the CM administrator brings the file versions under DAAC control by executing the ClearCase “impound software” script and then defines a view for the “as received” files.	
530	Expected Results: ClearCase sets the promotionLevel attribute to “received by DAAC” for each file version marked as ready for integration testing after first checking that the user ID is authorized to promote the software to this lifecycle stage. ClearCase registers the specifications for the new view.	
540	DAAC CM Administrator: Initiate builds of the PGEs and associated scripts that are needed by the Data Server by using the algorithm makefiles.	
550	Expected Results: ClearCase again controls the builds, tracking derived objects and creating build records which it saves for re-creating the builds.	
560	DAAC CM Administrator: Assigns a name and DAAC (vice SCF) version number to the files associated with each PGE using ClearCase’s “Metadata” menu.	
570	Expected Results: ClearCase attaches the specified PGE version label on all the file versions used in building a PGE. Library change events are logged.	
580	DAAC CM Administrator: Notify the DAAC Science Data Specialist, SSI&T members, and Production Planner via e-mail that the algorithm is ready to be loaded in SDPS for acceptance testing.	
590	Expected Results: E-mail facility sends and displays the message.	
600	DAAC Science Data Specialist: Upload the algorithm files to the Data Server according to the install procedures.	
610	Expected Results: ClearCase makes files available for copying. E-mail facility sends and displays message.	
620	DAAC Production Planner: Populate the Planning databases according to the install procedures. Notify CM administrator via e-mail when done.	
630	Expected Results: ClearCase makes files available for copying. E-mail facility sends and displays message.	
640	DAAC CM Administrator: Execute DDTS to close the CCR.	
650	Expected Results: DDTS records the change in CCR status and notifies designated personnel.	
660	DAAC Science Software I&T Support Engineer: Run the “software ready” script to mark versions of files as integration testing is completed.	
670	Expected Results: ClearCase sets state attributes to “ ready for acceptance”.	
680	DAAC CM Administrator: Run the “impound script” to impound them from SSI&T members pending acceptance review.	

690	Expected Results: The “impound script” has ClearCase set the state attributes to “impounded for acceptance” and promotionLevel attributes to “delivered from SSI&T” after first checking that the user is authorized to promote the software to this lifecycle stage.	
700	DAAC CM Administrator: Execute DDTS to submit a CCR to baseline the accepted files and delete the SSI&T’s library work area upon acceptance of the algorithm by the DAAC.	
710	Expected Results: DDTS stores the CCR and notifies designated personnel.	
720	DAAC CM Administrator: Upon CCR approval, invoke the “impound software” script to freeze the algorithm files in an area of the library reserved for production software.	
730	Expected Results: The files are locked and labeled. ClearCase places the versions on their respective production branches in the library and sets their state attributes to “in commissioning” and promotionLevel attributes to “production”.	
740	DAAC CM Administrator: Use ClearCase’s “view” menu to create a production view for the delivered algorithm files.	
750	Expected Results: ClearCase registers the specifications for the new view.	
760	DAAC Science Software I&T Support Engineer: Along with the SDPS/W developers, copy the algorithm files and forward them to the SCF to maintain.	
770	Expected Results: The Algorithm files must be received at the SCF.	
780	Tester: Check the algorithm files to ensure proper format and contents as specified in the CCR.	
790	Expected Results: Algorithm files are analyzed for proper contents and format.	
800	DAAC CM Administrator: Use ClearCase’s “admin” menu to delete the algorithm’s SSI&T work area.	
810	Expected Results: ClearCase removes the SSI&T storage pool from the library.	
820	DAAC CM Administrator: Use XRP II to create and relate resource and document identity profiles for the baseline algorithm. Select specific product information menus to enter the CCR# and data such as algorithm, PGE, document names, version identifiers, and data associated with the baseline change.	
830	Expected Results: XRP II creates new resource and document records in the baseline management database.	
840	DAAC CM Administrator: Use DDTS to close the CCR.	
850	Expected Results: DDTS updates the CCR status and informs designated personnel that the status has changed.	
860	DAAC CM Administrator: Update the algorithm status in ClearCase and XRP II after completion of algorithm commissioning.	

870	Expected Results: ClearCase changes the state attribute of the algorithm files to “full production”. XRP II updates the status of algorithm resource and document records to “full production”.	
Data Reduction and Analysis Steps:		
<p>A. The following materials should be secured for analysis at the close of the procedure:</p> <ol style="list-style-type: none"> 1. System Event Log Printout 2. Ingest History Log Printout 3. Algorithm files sent to SCF to check for proper format and contents. 		
Signature:		Date:

10.2.1.2 Product QA at the GSFC DAAC

TEST Procedure No.: A100230.020\$G	Date Executed:	Test Conductor:
Title: Product QA at the GSFC DAAC		
<p>Objective: The Product QA test verifies that members of the GSFC DAAC PGS staff can view a list of products requiring QA by the SCF's and can assist the SCF's in conducting QA on those products. This test verifies that the products and there associated metadata are provided to the SCF's when requested. Also verified by this test is the GSFC DAACs ability to interface (via E-mail and telephone) with the SCF's QA personnel for product support, use EOSView to help QA products, receive QA reports from the SCF's that contain, at a minimum, product identification, DAAC QA results, storage and processing information, and be able to append these reports to the associated archived data products.</p>		
Requirements		Acceptance Criteria
EOSD5040#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the combination of services from ECS and other data providers in arbitrary, i.e. non-predefined, ways as needed by users to conduct EOS science.</p> <p>In testing this requirement a user selects the services from the CLIENT subsystem he wishes to use, integrates the service, and uses the service in any order the user wishes.</p>	
ESN-0370#A	<p>This requirement is verified through test.</p> <p>The ESN shall provide interactive virtual terminal services.</p> <p>These services must be based on industry standard and accepted protocols. The interactive virtual terminal must also provide guest access to non-registered users.</p>	

PGS-0520#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to generate data products from any single data input or combination of data inputs according to the algorithms provided by the scientists.</p> <p>This requirement is satisfied when the PGS generates data products based on the algorithms supplied by the instrument science teams.</p>
PGS-1050#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide the capability to perform both automatic and manual QA of products.</p> <p>Automatic QA is schedule to be performed by the software at the PGE based on inputs from the Instrument Teams. Manual QA is demonstrated in the step-by-step procedures of this test and will be verified upon completion of this test.</p>
PGS-1060#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to perform automatic QA of generated products utilizing algorithms provided by the scientists.</p> <p>Automatic QA is schedule to be performed by the software at the PGE based on inputs from the Instrument Teams.</p>
PGS-1130#A	<p>This requirement is verified through test.</p> <p>The PGS shall receive Product QA results from the SCF which describes the results of the scientist's product quality review at an SCF. Product QA shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Identification of product b. QA results c. Product storage and processing instructions. <p>Upon completion of the Product QA, the SCF will send to the PGS the results of the Product QA.</p>
PGS-1140#A	<p>This requirement is verified through test.</p> <p>The PGS shall have the capability to provide the data product quality staff with the Product QA data from the SCF.</p> <p>Upon completion of the Product QA, the SCF will send to the PGS the results of the Product QA.</p>

SCF-0200#A	<p>This requirement is verified through demonstration. Note: This verification method was changed from test to demonstration.</p> <p>The ECS shall have the capability to receive from the SCF a QA Notification Specification. This specification, submitted by the scientist at the SCF, describes the conditions under which data should be forwarded to the SCF for QA.</p> <p>This tester will verify this requirement by sending a QA Notification Specification to the DAAC. Further verification will occur when the QA Notification Specification triggers a QA event and the QA process begins.</p>
SCF-0220#A	<p>This requirement is verified through demonstration. Note: This verification method was changed from test to demonstration.</p> <p>The ECS shall have the capability to receive from the SCF a Request for Data to QA. This request may be a standing request specified in the QA Notification Specification and may include the data product specified in the Data Quality Request Notification, or other data required by the scientist to QA the data product.</p> <p>The tester will request data from the ECS and the data must be received.</p>
SCF-0230#A	<p>This requirement is verified through demonstration. Note: This verification method was changed from test to demonstration.</p> <p>The ECS shall have the capability to send Data Delivered for QA to the SCF. This data includes the data requested by the scientist needed for the QA of data products.</p> <p>Data needed for the QA of data products must be sent to and received by the SCF.</p>
SCF-0240#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to receive an On Time QA from the SCF. This shall consist of the science QA codes describing the results of product QA and any further instructions to the ECS. The ECS shall accept the On Time QA when it is received within the time-out period specified in the Data Quality Request Notification. ECS accepts post-time-out QA updates as Metadata Updates as specified by Requirement SCF-0250.</p> <p>The SCF must send results of product QA to the GSFC ECS DAAC.</p>

SCF-0250#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to receive Metadata Updates from the SCF. These shall include the science QA codes and optionally a report describing the results of product QA and any further instructions to the ECS. The ECS only accepts Metadata Updates when they are received after the time allotment specified in the Data Quality Request Notification.</p> <p>The SCF must be able to send metadata updates to the GSFC ECS DAAC..</p>			
SDPS0032#A	<p>This requirement is verified through test.</p> <p>The SDPS shall provide the Principal Investigators (PI's) and the other science users with the updated metadata for the assessment of data product quality.</p> <p>The SDSRV CI must supply QA statistics and metadata associated with QA statistics to the DDIST CI.</p>			
SDPS0090#A	<p>This requirement is verified through inspection.</p> <p>The SDPS shall interface with the PIs and the other science users to support the development and testing of data product algorithms and QA of produced data products.</p> <p>The SDSRV CI must supply QA statistics and metadata associated with QA statistics to the DDIST CI.</p>			
SDPS0091#A	<p>This requirement is verified through test.</p> <p>The SDPS shall receive a quality report that is generated and transmitted by the PIs or the other science users, and appended to the data products being archived by the SDPS.</p> <p>Results of science data quality assessments and other documents relevant to the quality assessment of EOS data must be accessible to the SCF.</p>			
<p>Test Pull test data table is still being updated.</p>				
<p>Inputs:</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Registers a "QA Notification Subscription" to the GSFC DAAC via email message. (This QA notification underlines the conditions when to notify the SCF that a specified set of events has occurred.)	
20	Expected Results: The GSFC DAAC receives the "QA Notification Subscription" from the SCF.	
30	DAAC Production Monitor: The DAAC Production Monitor spot checks the incoming data stream by examining displays created by the data stream and investigates and responds to anomalies within the stream.	
40	Expected Results: The DAAC Production Monitor logs anomalies within the data stream to the QA Log and notifies the SCF about the anomalies within a timely manner for further action.	
50	DAAC Production Monitor: Sends the SCF a "Request for QA" message stating that the triggering conditions within the QA notification subscription have been met.	
60	Expected Results: Tester acknowledges receipt of the "Request for QA" message.	
70	Tester: Decides to conduct manual QA (may be either manual or automatic) on the science data product that triggered the subscription.	
80	Expected Results: Tester notifies GSFC DAAC that QA is necessary on the data meeting the subscription criteria via an e-mail message.	
90	DAAC Production Monitor: Tags the science data product that triggered the subscription as invalidated and stores the data product in the Data Archive. (This allows the data to be stored immediately and made available for distribution per existing subscriptions and subsequent requests. Additional subscribers of the data can specify whether or not they want to wait for the product validation (QA) to be completed.).	
100	Expected Results: GSFC DAAC data archive is updated with the invalidated data.	
110	Tester: Using the Universal Reference (UR), contained within the QA Request message, the SCF uses ftp-get to acquire the Product Output from the DAAC along with any accompanying metadata and output QA reports.	
120	Expected Results: SCF receives the data specified within the QA Request and begins the QA process.	
130	Tester: SCF Production Team conducts QA of the data product. This QA consists of validation of instrument performance, retrieval path indicators, physical, algorithmic, and other constraints (such as climatological) as warranted.	
140	Expected Results: SCF Production Team sends notification to the GSFC DAAC that the QA has been completed.	

150	Tester: Upon completion of the QA, quality assurance flags are generated and sent to the DAAC. In some cases the metadata will need to be updated. If this is necessary, the SCF updates the metadata and sends the updates to the DAAC for storage into the archive.	
160	Expected Results: GSFC DAAC data archive is updated with the validated data.	
Data Reduction and Analysis Steps:		
A. The following materials should be secured for analysis at the close of the procedure: <ol style="list-style-type: none"> 1. System Event Log Printout 2. Ingest History Log Printout 		
Signature:		Date:

10.2.1.3 Search, Browse, Request and Receive Data at the GSFC DAAC

TEST Procedure No.: A100230.030\$G	Date Executed:	Test Conductor:
Title:	Data Search, Browse, Request and Receive Data at the GSFC DAAC	
Objective:	The Data Search, Browse, Request and Receive test verifies the ability of a user at the MODIS SCF to search the ECS for special L1-L4 products and use the Browse service to view these products. A user at the MODIS SCF requests and receives special L1-L4 products, browse data, documents, accounting information, unstructured text, binary unstructured data, binary sequential data and sequential text. Users at the MODIS SCF must interface with ECS personnel for support in generating new search services (this is provided by the use of E-mail and phone contacts to ECS personnel) that dynamically browse the data and metadata.	
Requirements	Acceptance Criteria	
DADS2315#A	<p>This requirement is verified through demonstration.</p> <p>Each DADS shall be capable of providing access to data to support the instrument science team(s) in:</p> <ol style="list-style-type: none"> a. Pre-launch checkout of their instruments b. Pre-launch science checkout c. Development of initial calibration information. <p>The SDSRV CI must interface with the STMGT CI to provide storage of instrument calibration data. Items 'a' and 'b' are not covered in this test.</p>	

DADS2380#A	<p>This requirement is verified through demonstration.</p> <p>Each DADS shall send to the SCF, at a minimum, the following:</p> <ol style="list-style-type: none"> a. L0-L4 b. Expedited data d. Metadata e. Ancillary data f. Calibration data g. Correlative data h. Documents i. Algorithms <p>The tester verifies that the history logs at the MODIS SCF are updated to reflect the ingested data has been received from the GSFC DAAC.</p>
EOSD1760#A	<p>This requirement is verified through test.</p> <p>The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ol style="list-style-type: none"> a. Software Problem Reports b. Documentation c. Metadata (copies of inventories) d. Browse data e. Archived data f. Accounting information <p>The problem reports must be documented with metadata containing descriptions of the data types found within the problem reports and accounting information about the problem reports.</p>
EOSD5040#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the combination of services from ECS and other data providers in arbitrary, i.e. non-predefined, ways as needed by users to conduct EOS science.</p> <p>In testing this requirement a user selects the services from the CLIENT subsystem he wishes to use, integrates the service, and uses the service in any order the user wishes.</p>
ESN-0370#A	<p>This requirement is verified through test.</p> <p>The ESN shall provide interactive virtual terminal services.</p> <p>These services must be based on industry standard and accepted protocols. The interactive virtual terminal must also provide guest access to non-registered users.</p>
SCF-0260#A	<p>This requirement is verified through demonstration.</p> <p>The ECS shall have the capability to make a Reprocessing Request Template available to the SCF. This template will be used by the scientist at the SCF to prepare a Reprocessing Request.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>

SCF-0270#A	<p>This requirement is verified through demonstration.</p> <p>The ECS shall have the capability to receive a Reprocessing Request from the SCF. This request, at a minimum, contains the following: a list of all the products to be generated, the version numbers of the science software and calibration coefficients, a list of all ancillary data, and data start and stop times.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>
SCF-0280#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to supply a Reprocessing Status to the SCF. This status that includes the reprocessing schedule informs the scientist at the SCF the status of his reprocessing request and provides notification upon completion of the reprocessing by the ECS.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>
SCF-0310#A	<p>This requirement is verified through demonstration.</p> <p>The ECS shall have the capability to receive Calibration Coefficient Requests from the SCF. The current or past calibration coefficients used in processing of instrument data may be requested by the scientist from the ECS.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>
SCF-0320#A	<p>This requirement is verified through demonstration.</p> <p>The ECS is capable of sending to the SCF Calibration Coefficients. These shall include the calibration coefficients requested by the scientist at the SCF in the Calibration Coefficient Request.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>
SCF-0330#A	<p>This requirement is verified through demonstration and test.</p> <p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>

SCF-0340#A	<p>This requirement is verified through test.</p> <p>The SCF shall have the capability to send a Request for Processing Status to the ECS for the status of SCF-requested data processing.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>			
SCF-0350#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to provide SCF with the Processing Status of SCF-requested data processing.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>			
SCF-0380#A	<p>This requirement is verified through demonstration.</p> <p>The SCF shall have the capability to send a Request for Product History (including the algorithms used) to the ECS for the history of data products that the SCF specifies.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>			
SCF-0390#A	<p>This requirement is verified through demonstration.</p> <p>The ECS shall have the capability to provide SCF with the Product History of data products that the SCF specifies.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>			
<p>Test Pull test data table is still being updated. Inputs:</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: From the MODIS SCF, establish a client session via the DSS System Management Login Dialog screen to a Data Server at the GSFC DAAC and create a working collection of data.	
20	Expected Results: The Data Server assigns a session ID and logs (via MSS Logging Services) the initiation of the session.	
30	Tester: MODIS SCF Investigator formulates a search for a cross-DAAC search for cloud and precipitation data over the Andes and submits it.	
40	Expected Results: The Data Server logs and queues the search request sent by the tester to create a working collection and searches the Metadata Database in accordance with the tester's indicated search attributes. Identified granules are returned to the tester's working collection.	
50	Tester: Refines the contents of the working collection to specific granules of high interest and invokes an acquire (via ftp pull) service to obtain the high interest granules (cloud and precipitation data over the Andes).	
60	Expected Results: The Data Server logs (via MSS Logging Services) and queues subsequent search requests to identify high interest granules and searches the Metadata Database in accordance with the search attributes. Distribution Management logs (via MSS Logging Services) the Acquire via ftp Pull Request and sends a Data Retrieval Request to Storage Management listing the granules of high interest to be retrieved and placed on the Pull Volume.	
70	Tester: Track progress of the request and review any errors recorded by using either the Other Screens option and select Logs & Reports (MSS) from DSS System Management main menu or view actual request status's via the Distribution Management component's Requests screen.	
80	Expected Results: The progress, status, and errors must be displayed and recorded.	
90	Tester: View Pull Area Utilization data via the Storage Management component's Pull Area Utilization screen.	
100	Expected Results: Distribution Management extracts the file names and path names associated with the high interest granules. A Retrieval Complete Notification is created which includes files and path names. This notification is sent to the requesting user's client or via email to the user if no client is active.	
110	Tester: Retrieves the requested data from the GSFC DAAC's pull volume.	

120	Expected Results: CSS subsystem detects and logs (via MSS Logging Services) that an authorized user has accessed specific files on the pull volume. CSS provides a Pull Volume Access Notification to Storage Management which enumerates the path names and files retrieved by an associated user ID.	
130	Tester: Verify request completion via the Other Screens option and select Logs & Reports (MSS) from DSS System Management main menu, the Storage Management Component's Logs & Reports (MSS) submenu available on the Other Screens pull down menu, or the Distribution Management Component's Request screen.	
140	Expected Results: Storage Management receives and logs (via MSS Logging Services) the Pull Volume Access Notification. Storage Management parses the notification and determines which files were retrieved by the user. The reference count for those files is decremented.	
150	Tester: MODIS SCF Investigator reviews results of the query and requests Integrated Browse images via EOSView on the ECS Desktop.	
160	Expected Results: The browse images are retrieved and returned to the investigator.	
170	Tester: MODIS SCF Investigator creates and submits a product request for data from GSFC DAAC. Delivery by media is requested.	
180	Expected Results: Order is received by GSFC DAAC data server, order confirmation sent, and order statistics updated.	
190	Tester: Initialize the ECS Desktop and bring up the Advertising Service.	
	Expected Results: The ECS Desktop and Advertising Service is initialized.	
200	Tester: MODIS SCF Investigator searches advertisements for entries ISCCP.	
210	Expected Results: GSFC DAAC's advertisements are searched and results returned.	
220	Tester: MODIS SCF Investigator establishes a session with the Document Data Server.	
230	Tester: MODIS SCF Investigator requests documentation referenced in the advertisement.	
240	Expected Results: Document retrieved from Document Data Server.	
250	Tester: MODIS SCF Investigator terminates session.	
Data Reduction and Analysis Steps:		
A. The following materials should be secured for analysis at the close of the procedure: 1. System Event Log Printout 2. Ingest History Log Printout		
Signature:		Date:

10.2.1.4 Data Management Services at the GSFC DAAC

TEST Procedure No.: A100230.040\$G	Date Executed:	Test Conductor:
Title: Data Management Services at the GSFC DAAC		
Objective: The Data Management Services test verifies that a user at the MODIS SCF uses the Virtual IMS Information Management Software to import the local SCF data base using an ECS supported DBMS (provided by the SCF) into the ECS.		
Requirements	Acceptance Criteria	
EOSD5000#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the addition of other data providers, e.g. DAACs, SCFs, ADCs, ODCs, which may:</p> <ul style="list-style-type: none"> - provide heterogeneous services, i.e. services in support of EOS which may be less than or different than ECS services. - be connected with varying topologies - have variable levels of reliability or operational availability. <p>The CSS services must be extensible in its design to provide the capability for growth and enhancement.</p>	
EOSD5040#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the combination of services from ECS and other data providers in arbitrary, i.e. non-predefined, ways as needed by users to conduct EOS science.</p> <p>In testing this requirement a user selects the services from the CLIENT subsystem he wishes to use, integrates the service, and uses the service in any order the user wishes.</p>	
ESN-0370#A	<p>This requirement is verified through test.</p> <p>The ESN shall provide interactive virtual terminal services.</p> <p>These services must be based on industry standard and accepted protocols. The interactive virtual terminal must also provide guest access to non-registered users.</p>	
SCF-0001#A	<p>This requirement is verified through NASA direction.</p> <p>The SCF interface platform shall adhere to requirements specified in the Data Production Software and SCF Standards and Guidelines, GSFC 423-16-01. This standards document includes SCF requirements for operating system, computer communications, e-mail protocol, and windowing protocol.</p> <p>The tester will ensure the SCF standards and Guidelines documents exist at the SCF.</p>	

SCF-0360#A	<p>This requirement is verified through test.</p> <p>The SCF shall have the capability to send a Request for Resource Usage to the ECS for information about ECS resource usage during SCF-requested data processing.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>			
SCF-0370#A	<p>This requirement is verified through test.</p> <p>The ECS shall have the capability to provide SCF with information about ECS Resource Usage during SCF-requested data processing.</p> <p>The tester must have the capability to transfer data back and forth between the SCF and ECS.</p>			
<p>Test Inputs: Pull test data table is still being updated.</p>				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	GSFC DAAC: ECS sends an e-mail DAN to the SCF to announce that the DAAC via kftp (For Release A, the MODIS SCF electronically accesses the Software Developer's Guide to Preparation, Delivery, Integration and Test with ECS (DID 205, Part 4) document from EDHS on the WWW.).	
20	Expected Results: The SCF follows the instructions within the DAN and accomplishes the kftp.	
Data Reduction and Analysis Steps:		
A. The following materials should be secured for analysis at the close of the procedure: 1. System Event Log Printout 2. Ingest History Log Printout		
Signature:		Date:

10.2.1.5 Toolkit Testing at the GSFC DAAC

TEST Procedure No.: A100230.050\$G	Date Executed:	Test Conductor:
Title: Toolkit Testing at the GSFC DAAC		
Objective: The Toolkit Testing at the GSFC DAAC test verifies the ability of a user at the GSFC DAAC to send and receive updates to the DAAC Toolkit software to the MODIS SCF for use in developing and testing algorithms by the MODIS SCF.		
Requirements	Acceptance Criteria	
EOSD0502#A	This requirement is verified through demonstration. ECS shall provide an integrated set of toolkits consisting of software tools for each ECS element. The CSS client services software must be made available in the form of a CSS toolkit to the developers.	
IMS-1490#A	This requirement is verified through test. The IMS toolkit software shall provide users, including those working from ICCs and ISTs, with the capability to locally construct the requests for IMS services, forward the requests to the IMS server, and obtain request results. The WKBCH CI must provide the registered user the capability to obtain ECS data and services.	

IMS-1500#A	<p>This requirement is verified through test.</p> <p>The IMS toolkit software shall provide the tools to support user preparation or automated generation of metadata, for example, directory, inventory, and guide (documentation/reference material) entries.</p> <p>The WKBCH CI must provide users the capability to create and submit Advertisements.</p>
IMS-1510#A	<p>This requirement is verified through test.</p> <p>The IMS data visualization toolkit capabilities shall be portable and execute on ECS supported workstations and appropriate ECS facility computers.</p> <p>The DESK CI and the WKBCH CI executables must run on the following hosts:</p> <ol style="list-style-type: none"> a. SGI IRIX 5.3 b. HP UX 9.05 c. SUN Solaris 2.4 d. IBM RS/6000 AIX 3.2.5
IMS-1520#A	<p>This requirement is verified through test.</p> <p>The IMS toolkit software shall provide data visualization tools to assist the investigators to perform the following functions, at a minimum:</p> <ol style="list-style-type: none"> a. QA/Validation of products generated by the PGS b. Algorithm development c. Calibration functions, parameter verification, and anomaly detection d. View subsetted, subsampled, and summarized data whenever associated inventory information is displayed <p>The WKBCH CI must produce visualizations of images needed for QA, validation, Algorithm development, calibration functions, parameter verification and anomaly detection.</p>
IMS-1530#A	<p>This requirement is verified through demonstration.</p> <p>The IMS data visualization toolkit shall provide the capability to visualize data in raster and vector formats and to visualize animated products.</p> <p>The WKBCH CI must provide users the capability of displaying 8-bit and 24-bit raster images and a series of Latitude/Longitude pairs.</p>

IMS-1540#A	<p>This requirement is verified through demonstration.</p> <p>The IMS toolkit software shall provide the capability to generate, at a minimum:</p> <ul style="list-style-type: none"> a. Two-dimensional plots (x-y plots, scatter plots, profiles, histograms) b. Three-dimensional plots c. Contour plots d. Three-dimensional surface diagrams <p>The WKBCH CI must provide the capabilities of displaying ECS supported visualization data as a two-dimensional color scatter plot and displaying two-dimensional data arrays as pseudocolor images.</p> <p>Only items “a” and “c” are tested in this procedure. Items “b” and “d” are not tested in this procedure.</p>
IMS-1550#A	<p>This requirement is verified through demonstration.</p> <p>The IMS toolkit data visualization tools shall provide capabilities for image manipulation (e.g., pan, zoom, color, contrast).</p> <p>The WKBCH CI must provide the capabilities of selecting different color palettes and of zooming and panning pseudocolor visualizations of data.</p>
PGS-0970#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide file access subroutines that enforce compliance with the adopted standard ECS formats.</p> <p>The PRONG CI must create a Process Control File to provide information to the SDP Toolkit CI about the input data required to execute a PGE.</p>
PGS-0980#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide job control routines that provide all required task parameters to the Standard Product software.</p> <p>The PRONG CI must create a Process Control File to provide information to the SDP Toolkit CI about input and output required to execute a PGE.</p>
PGS-0990#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide error logging subroutines for use by Standard Product software in notifying the system operators of conditions requiring their attention.</p> <p>Status messages must be output to the Status Message File to be used by the SDP Toolkit CI to collect Toolkit status and error information.</p>

PGS-1015#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide ancillary data access subroutines that provide Standard Product software access to ephemeris data (e.g., solar, lunar, and satellite ephemeris), Earth rotation data, and time and position measurement data. These subroutines must perform operations such as:</p> <ol style="list-style-type: none"> a. Interpolation b. Extrapolation c. Coordinate system conversion. <p>The PRONG CI must provide to the SDP Toolkit, at a minimum, the following metadata with the ephemeris data files for TRMM processing:</p> <ol style="list-style-type: none"> a. Time range b. Orbit number range c. Platform
PGS-1020#A	<p>This requirement is verified through inspection.</p> <p>This verification method was changed from test to inspection.</p> <p>The PGS shall provide mathematical libraries including:</p> <ol style="list-style-type: none"> a. Linear algebra and analysis (e.g., LINPAC, IMSL) b. Statistical calculations (e.g., SAS, SPSS). <p>Mathematical libraries must be accessible by users at the SCF.</p>
PGS-1025#A	<p>This requirement is verified through inspection.</p> <p>The PGS shall provide a Science Processing Library containing routines such as:</p> <ol style="list-style-type: none"> a. Image processing routines b. Data visualization routines c. Graphics routines <p>A Science Processing Library containing the routines specified in items a-c must be accessible by users at the SCF.</p>
PGS-1030#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide a toolkit to the SCF containing versions of the routines specified in requirements PGS-0970 to PGS-1020.</p> <p>The SCF tester will request a toolkit containing versions of routines specified in requirements PGS-0970 to PGS-1020 from the PGS.</p>
SCF-0060#A	<p>This requirement is verified through demonstration.</p> <p>Note: This verification method was changed from test to demonstration.</p> <p>The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.</p> <p>The SCF tester must be able to retrieve the Toolkit Delivery and Update Package from ECS.</p>

SCF-0070#A	<p>This requirement is verified through demonstration. Note: This verification method was changed from test to demonstration.</p> <p>The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.</p> <p>This requirement must be followed by both the SCF and ECS for the data production software to be successfully integrated into the production environment.</p>			
Test Inputs:	<p>Toolkit tests that were used during IR-1. These tests and the test results for these tests are under ClearCase control and located in the following files: Toolkit Test Drivers: /ecs/sdps/sdps_test/pgstk/src Toolkit Test Results: /ecs/systest/ir1/results.</p>			
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Logon to ClearCase.	
20	Expected Results: The ClearCase GUI is opened.	
30	Tester: Open a ClearCase VOB.	
40	Expected Results: The ClearCase VOB that you opened is available for use.	
50	Tester: Change the working directory to: /ecs/sdps/sdps_test/pgstk/src.	
60	Tester: Execute the Toolkit tests from IR-1 and verify the results with the results found in the Toolkit output files.	
70	Expected Results: The Toolkit regression test that were executed in IR-1 executed correctly and in accordance with pre-determined results found in the Toolkit output files.	
80	Tester: Load and Execute Toolkit tests added for Release A.	
Data Reduction and Analysis Steps:		
Verify that the Toolkit Test Results are the same as the Toolkit Test Results found in the results file located in ClearCase. The Toolkit Test Results are located in file: /ecs/systest/ir1/results.		
Signature:		Date:

10.2.2 LaRC SCF/ECS Sequence

This sequence is not applicable to this volume.

11. Flight Operations Scenario Group

The Flight Operations Scenario Group is not applicable to the GSFC Volume. Refer to “Release A System Acceptance Test Procedures for the ECS Project, Volume 3: Earth Observing System (EOS) Operations Center (EOC)” for FOS procedures.

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12. End-to-End Scenario Group

The End-to-End Scenario Group verifies the ECS capabilities to support "all-up" multi-site operations and typical "day-in-the-mission-life" scientist activities. This group of scenarios and associated tests verifies that the ECS can support broad, multi-site interactive operations in support of mission planning, scheduling and science data access, and distribution. These scenarios verify the capabilities of ECS to enable the users and operators to perform multi-step processes, including multiple data set searches and transfers, correlative data set analysis, etc.

In addition, early selected AM-1 mission interfaces needed in Release B, some of which are still being implemented, are tested and/or simulated. The overall objective of the end-to-end scenario group is to demonstrate that the ECS, as a 'whole', operates properly and can provide the full range of required functional capabilities for the TRMM Release.

This scenario group concentrates on extending the functional verification performed in executing the scenarios described in Sections 8 through 11, but occasional replication of single entity functional testing is unavoidable. Where possible, actual interfaces and existing, real data are used. In many cases, however, simulated data streams and/or interfaces are used due to the immaturity of the ECS, the missions and/or the interfacing external facilities. The ECS EDF is used to simulate some tests, but testing at the actual DAAC sites predominates. Performance tests and performance analyses complement the multi-site and mission support tests to ensure that the ECS meets current and projected system performance requirements.

This scenario group verifies the ECS capabilities to support inter-site communications and operations among the three TRMM Release A DAAC sites, the EOC, the SMC and with the external EDOS, EBnet, FDF, NCC systems; scientist data handling, processing and distribution support for the TRMM mission; early AM-1 mission interface testing; system management and inter-site coordination; and system and end-to-end performance requirements.

12.1 Multi-Site Intercommunications and Interoperations Scenario

This scenario carries the ECS site operations staff through the process of handling complex data product orders that requires supporting data from multiple sites. This scenario confirms the capability of the system to allow users and operators to perform message broadcasting, multi-site system management and inter-site network communications. This scenario confirms inter-site interfaces, with each site accepting and interpreting data messages from other sites to ensure readiness to support interactive message traffic among the three DAACs and the SMC, and with the EDOS and the DAO, using EBnet or NOLAN. Message traffic to/from the EOC and the GSFC DAAC and the SMC is also verified. In addition, the capability of the SMC to support system wide schedule generation, coordination and adjudication is also confirmed.

12.1.1 Inter-Site Message Sequence

This sequence of tests verifies the capability of the users/operators at each DAAC as well as the SMC to receive and handle broadcast messages. Users/operators at each DAAC broadcast messages to the other DAACs and the SMC and receive message receipt acknowledgments. Message traffic to/from the EOC and the GSFC DAAC and the SMC is also verified.

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The following external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

LaRC ECS DAAC

EDC ECS DAAC

SMC

EOC

Operator Position(s): The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

DAAC Resource Manager

DAAC Computer Operator

DAAC Ingest-Distribution Technician

Operational Scenario(s): There are no operations scenarios taken from the Operations Scenarios for the ECS Project: Release-A (605/OP1), used during this sequence of tests.

Test Dependencies: The following table identifies the test procedure(s) in a sequence of tests that should be run prior to or concurrently with a sequence or test procedure.

Test Procedure No.	Site/Procedure No.	Comments
A120110.020\$G	A120110.020\$L A120110.020\$E A120110.020\$\$	Concurrent.

12.1.1.1 Inter-DAAC and DAAC-SMC Communications

TEST Procedure No.: A120110.020\$G	Date Executed:	Test Conductor:
Title: Inter-DAAC and DAAC-SMC Communications		
Objective : This procedure tests the capability of the GSFC DAAC to sequentially send messages to the other Release A DAACs and to the SMC. The GSFC DAAC also		

sends messages to the EOC. The capability of the GSFC DAAC to receive and process acknowledgments of message receipt is also verified. In addition, the EOC and the SMC send messages to the GSFC DAAC and receive acknowledgments of message receipt in return.

Requirements	Acceptance Criteria
EOSD0730#A	<p>This requirement is verified through test.</p> <p>Each ECS element shall be capable of verifying the fidelity of the ECS element interface to:</p> <ul style="list-style-type: none"> a. Other ECS elements at any time during the lifetime of the ECS b. Entities external to ECS at any time during the lifetime of the ECS <p>During the test, the tester accesses the email and FTP clients and sends an email message and planning, scheduling, and directive data files to the other Release A DAACs, the SMC, and the EOC. Acknowledgments of message receipt are then received and processed. The GSFC DAAC also receives email and planning, scheduling and directive data files from the SMC and EOC and responds with acknowledgments of message receipt.</p> <p>Item b is not verified in this test. Item b is verified at the GSFC ECS DAAC in test procedure A080180.050\$G.</p>

Test Inputs:

Data Set Name	Data Set ID	File Name	Description	Version
PLANNING_001				1
SCHEDULE_001				1
DIRECTIVE_001				1
EMAIL_001				1

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	DAAC Resource Manager: Coordinate email transfer with LaRC DAAC, EDC DAAC, SMC, and EOC.	
20	DAAC Ingest-Distribution Technician: Access Communications Server and invoke email client.	
30	DAAC Ingest-Distribution Technician: Specify email address at LaRC DAAC to which message is to be sent. Specify subject and body of message to be sent. Send email message to LaRC DAAC.	
40	Expected Results: LaRC DAAC receives the email message.	
50	DAAC Ingest-Distribution Technician: Specify email address at EDC DAAC to which message is to be sent. Specify subject and body of message to be sent. Send email message to EDC DAAC.	
60	Expected Results: EDC DAAC receives the email message.	
70	DAAC Ingest-Distribution Technician: Specify email address at SMC to which message is to be sent. Specify subject and body of message to be sent. Send email message to SMC.	
80	Expected Results: SMC receives the email message.	
90	DAAC Ingest-Distribution Technician: Specify email address at EOC to which message is to be sent. Specify subject and body of message to be sent. Send email message to EOC.	
100	Expected Results: EOC receives the email message.	
110	DAAC Computer Operator: Verify that the email logs reflect the transmission of email message to LaRC DAAC and receipt of message acknowledgment.	
120	Expected Results: email logs must verify message transmission and receipt of acknowledgment.	
130	DAAC Computer Operator: Verify that the email logs reflect the transmission of email message to EDC DAAC and receipt of message acknowledgment.	

140	Expected Results: email logs must verify message transmission and receipt of acknowledgment.	
150	DAAC Computer Operator: Verify that the email logs reflect the transmission of email message to the SMC and receipt of message acknowledgment.	
160	Expected Results: email logs must verify message transmission and receipt of acknowledgment.	
170	DAAC Computer Operator: Verify that the email logs reflect the transmission of email message to the EOC and receipt of message acknowledgment.	
180	Expected Results: email logs must verify message transmission and receipt of acknowledgment.	
190	DAAC Resource Manager: Coordinate FTP transfer with LaRC DAAC, EDC DAAC, SMC, and EOC.	
200	DAAC Ingest-Distribution Technician: Access Communications Server and invoke FTP client.	
210	DAAC Ingest-Distribution Technician: Establish FTP connectivity with the LaRC DAAC.	
220	DAAC Ingest-Distribution Technician: Specify FTP destination at LaRC DAAC to which Planning, Scheduling, and Directive data files are to be sent.	
230	DAAC Ingest-Distribution Technician: FTP Planning and Scheduling data files to LaRC DAAC.	
240	DAAC Ingest-Distribution Technician: FTP Directive data file to LaRC DAAC.	
250	Expected Results: Message stating the transfer of the Planning, Scheduling, and Directive data files to the LaRC DAAC.	
260	DAAC Ingest-Distribution Technician: Establish FTP connectivity with the EDC DAAC.	
270	DAAC Ingest-Distribution Technician: Specify FTP destination at EDC DAAC to which Planning, Scheduling, and Directive data files are sent.	
280	DAAC Ingest-Distribution Technician: FTP Planning and Scheduling data files to EDC DAAC.	

290	DAAC Ingest-Distribution Technician: FTP Directive data file to EDC DAAC.	
300	Expected Results: Message stating the transfer of the Planning, Scheduling, and Directive data files to the EDC DAAC.	
310	DAAC Ingest-Distribution Technician: Establish FTP connectivity with the SMC.	
320	DAAC Ingest-Distribution Technician: Specify FTP destination at the SMC to which Planning, Scheduling, and Directive data files are sent.	
330	DAAC Ingest-Distribution Technician: FTP Planning and Scheduling data files to the SMC.	
340	DAAC Ingest-Distribution Technician: FTP Directive data file to the SMC.	
350	Expected Results: Message stating the transfer of the Planning, Scheduling, and Directive data files to the SMC.	
360	DAAC Ingest-Distribution Technician: Establish FTP connectivity with the EOC.	
370	DAAC Ingest-Distribution Technician: Specify FTP destination at the EOC to which Planning, Scheduling and Directive data files are sent.	
380	DAAC Ingest-Distribution Technician: FTP Planning and Scheduling data files to the EOC.	
390	DAAC Ingest-Distribution Technician: FTP Directive data file to the EOC.	
400	Expected Results: Message stating the transfer of the Planning, Scheduling, and Directive data files to the EOC.	
410	DAAC Resource Manager: Coordinate email transfer with the SMC.	
420	DAAC Ingest-Distribution Technician: Receive email message from the SMC.	
430	Expected Results: email logs must verify receipt of email message from the SMC and transmission of message receipt acknowledgment to the SMC.	
440	DAAC Resource Manager: Coordinate FTP transfer with the SMC.	

450	DAAC Ingest-Distribution Technician: Access Communications Server and invoke FTP client.	
460	DAAC Ingest-Distribution Technician: Establish FTP connectivity with the SMC.	
470	Expected Results: Receipt of Planning, Scheduling, and Directive data files from the SMC.	
480	DAAC Computer Operator: Verify that the FTP logs reflect the receipt of the Planning, Scheduling, and Directive data files from the SMC and the transmission of the message receipt acknowledgment to the SMC.	
490	DAAC Resource Manager: Coordinate email transfer with the EOC.	
500	DAAC Ingest-Distribution Technician: Receive email message from the EOC.	
510	Expected Results: email logs must verify receipt of email message from the EOC and transmission of message receipt acknowledgment to the EOC.	
520	DAAC Resource Manager: Coordinate FTP transfer with the EOC.	
530	DAAC Ingest-Distribution Technician: Access Communications Server and invoke FTP client.	
540	DAAC Ingest-Distribution Technician: Establish FTP connectivity with the EOC.	
550	Expected Results: Receipt of Planning, Scheduling, and Directive data files from the EOC.	
560	DAAC Computer Operator: Verify that the FTP logs reflect the receipt of the Planning, Scheduling, and Directive data files from the EOC and the transmission of the message receipt acknowledgment to the EOC. Compare records of messages sent to LaRC DAAC, EDC DAAC, SMC and EOC with the logs that contain the message receipt acknowledgments.	
570	Tester: Coordinate a printout of messages received at all of the sites for later analysis.	

Data Reduction and Analysis Steps:

A. The following materials must be secured for analysis at the end of the procedure:

- 1. email Log Printout
- 2. Administrator Log Printout of FTP Activities.

B. Analysis of the email Log Printout must verify that all email activities are completed to required specifications.

C. Compare messages received to messages sent. Email transmissions must verify that the integrity of the messages is consistent before and after transmission.

D. Analysis of FTP Log Printout must verify that the files are transferred to the required directory without corruption.

Signature:	Date :
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12.1.2 Multi-Site System Management Sequence

This sequence of tests verifies the capabilities of the GSFC DAAC to support multi-site scheduling of activities related to TRMM instrument data ingest, retrieval and distribution and to support AM-1 interfaces. This sequence also verifies the capability to interface and exchange schedule related messages and data with the other DAACs, SMC, EDOS, TSDIS and NOAA ADC.

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The following external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

Simulated Science User

SMC

TSDIS Simulator

Operator Position(s): The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

DAAC Resource Manager

DAAC Archive Manager

DAAC Resource Planner

DAAC Production Planner

Operational Scenario(s): The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605/OP1), that were used to develop tests in this sequence of tests are listed:

Resource Planning Scenario (Section 3.7.1)

Test Dependencies: The following table identifies the test procedure(s) in a sequence of tests that should be run prior to or concurrently with a sequence or test procedure.

Test Procedure No.	Site/Procedure No.	Comments
A120110.020\$G		prior

12.1.2.1 Schedule Generation, Coordination and Adjudication Support

TEST Procedure No.: A120120.010\$G	Date Executed:	Test Conductor: O. A. Lindsay
Title: Schedule Generation, Coordination and Adjudication Support		
Objective : This Procedure tests the capabilities of the ECS to exchange relevant schedule and resource data among ECS elements and external entities. It tests the ability to generate schedule related inputs and coordinate an overall EOSDIS schedule among the responsible parties. This procedure also tests the capability of the ECS to negotiate schedule conflicts, and develop an adjudicated schedule for the resolution of these conflicts.		
Requirements	Acceptance Criteria	
PGS-0140#A	<p>This requirement is verified through test.</p> <p>The PGS shall provide tools to help the PGS staff create and modify SDPS plans, schedules, and lists.</p> <p>This requirement verifies the Production Planner creates a new production plan and modifies an existing plan or schedule; and when the planning subsystem creates and maintain a record of updates made</p>	
PGS-0170#A	<p>This requirement is verified through test.</p> <p>The PGS shall receive priority assignments, schedule conflict resolutions, and other operational directives.</p> <p>This requirement verifies that the system capability to schedule conflict resolution locally at the GSFC DAAC</p>	
Test Inputs:	Simulated Schedules from TSDIS and SDPF	

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
	Assumption: Resource Planner has received ground events that need to be scheduled.	
10	DAAC Production Planner: Receives Data Availability Schedules from TSDIS. Develops and sends the Resource Planner production resource requirements/schedules.	
20	Expected Result: Resource Planner receives resource request from Production Planner.	
30	DAAC Resource Planner: Invokes the resource planning system.	
40	Expected Result: Planning system menu is displayed with two selection options: 'Create NEW plan' and 'Modify existing plan'.	
50	DAAC Resource Planner: Selects a plan.	
60	DAAC Resource Planner: Enters the following types of request data into menu displayed: ground event, description, start time, and duration.	
70	DAAC Resource Planner: After entering the required inputs, sends the requests to the resource planning system.	
80	Expected Results: System receives the requests and notifies the Resource Planner of the receipt. The ground event requests are processed and production resources are allocated for implementation automatically. The system builds the resource plan and sends it to the Resource Planner.	
90	DAAC Resource Planner: Receives the resource plan. Sends the Resource Schedule to the Production Planner.	
100	Expected Results: Production Planner receives Resource Plan.	
110	DAAC Production Planner: Invokes the Planning Subsystem.	
120	Expected Results: Planning Subsystem displays a menu for schedule generation and evaluation.	

130	DAAC Production Planner: Generates, reviews, approves, and activates the plan. Sends the plan to the SMC and to other DAACs.	
140	Expected Results: Production Planner receives Schedule Directive from the SMC.	
150	DAAC Production Planner: Reviews the Schedule Directive and makes any necessary modifications to Production Plan.	
Data Reduction and Analysis Steps:		
Signature:		Date :

12.1.2.2 TRMM and AM-1 Resource Scheduling Support

TEST Procedure No.: A120120.020\$G	Date Executed:	Test Conductor:
Title: TRMM and AM-1 Resource Scheduling Support		
Objective : This procedure tests the capabilities of the ECS to support the coordination of resource scheduling and allocation among the DAACs, EDOS, TSDIS and across EBnet. Also, this procedure tests the capability of the GSFC DAAC to receive delivery schedules and delayed products status information from TSDIS.		
Requirements	Acceptance Criteria	
TRMM4070#A	<p>This requirement is verified through demonstration.</p> <p>TSDIS shall electronically provide a schedule of TRMM product delivery to the ECS systems at the GSFC DAAC.</p> <p>The ECS must be able to electronically receive a schedule of TRMM product delivery from TSDIS</p>	
TRMM4080#A	<p>This requirement is verified through demonstration.</p> <p>TSDIS shall electronically provide status information to the ECS systems at the GSFC DAAC about delayed products.</p> <p>The ECS must be able to electronically receive status information from TSDIS about delayed products.</p>	
Test Inputs:	NOTE: Schedules and Delayed Product Status are sent via telephone, fax, hard copy, or email.	

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
	Assumption: DAAC Resource Planner receives ground events that need to be scheduled.	
10	DAAC Resource Planner: Invoke the resource planner to generate a production schedule.	
20	Expected Results: The Planning Menu is displayed.	
30	DAAC Resource Planner: Create a new Production Plan. Enter required inputs and submit the request to the system.	
40	EXPECTED RESULTS: The system acknowledges the receipt of the request. The system processes the request(s) and automatically allocates resources. The system builds the resource plan and sends it to the Resource Planner	
50	DAAC Resource Planner: Receives the resource plan and Emails a copy to the Archive Manager.	
60	DAAC Archive Manager: Allocates the resources according to the plan and notifies the Resource Planner.	
70	EXPECTED RESULTS: Resource Planner receives notification of the resource allocation from the Archive Manager.	
	PAUSE	
	Receipt of a Delayed Product Status	
80	DAAC Production Planner: Receives a Delayed Product Status from TSDIS via phone, fax, hard copy, or email. Starts the planning workbench.	
90	EXPECTED RESULTS: AutoSys TimeScape GUI is displayed.	
100	DAAC Production Planner: Opens the current weekly plan being used for activation/schedule seeding operation. Select 'Update Plan' from the Option menu.	
110	EXPECTED RESULTS: Production Planning Workbench GUI is displayed.	

120	DAAC Production Planner: Makes the necessary adjustments in the schedule. Once all the adjustments are made, selects 'Activate Plan' from the Option menu in the AutoSys TimeScape GUI.	
130	EXPECTED RESULTS: Production Plan Activation GUI is displayed.	
140	DAAC Production Planner: Enters the time range of the scheduling period (current time to end of shift) and enters any comments regarding the schedule. Selects 'Activate' button.	
150	EXPECTED RESULTS: The system creates an ordered list of the activities which are currently active and integrates this list with other activities that may be scheduled within the scheduling window or time period.	
Data Reduction and Analysis Steps:		
Signature:		Date :

12.1.2.3 SMC Support to Integration Test & Simulation Activities

This test is not performed at the GSFC DAAC.

12.2 TRMM Mission Support Scenario

The Tropical Rainfall Measurement Mission (TRMM) scenario covers the entire range of ECS activities involved in ingesting, archiving and distributing TRMM data products. This scenario verifies the capability of the ECS to support end-to-end TRMM mission operations and exercises the capabilities needed to perform multi-step TRMM data searches and analyses, together with associated data support functions. This scenario also proves the ECS capabilities to receive, store and access Visible Infrared Scanner (VIRS), Precipitation Radar (PR), TRMM Microwave Imager (TMI), and Ground Validation (GV) data (e.g. L1A-L3B data and metadata, browse data, algorithms and documentation) received by the GSFC DAAC via the TSDIS.

12.2.1 SDPF Data Handling and Processing Sequence

This sequence of tests is not performed at the GSFC DAAC.

12.2.2 TSDIS Data Handling Sequence

This sequence verifies the ECS capability to ingest and store at the GSFC DAAC VIRS, PR, TMI, and GV data from TSDIS, and to archive higher level/standard products for later distribution to requesting users. In addition, the capability of ECS operations personnel to ingest TRMM products from TSDIS is also verified.

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

TSDIS Simulator

SMC

Operator Position(s): The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

DAAC Production Planner

DAAC Resource Manager

DAAC Archive Manager

DAAC Ingest-Distribution Technician

Operational Scenario(s): The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605/OP1), that were used to develop tests in this sequence of tests are listed:

Resource Planning Scenario (Section 3.7.1)

TRMM Level 0 Data Ingest Scenario (Section 3.9.1)

TRMM Ancillary Data Ingest Scenario (Section 3.9.3)

Data Insertion Scenario (Nominal) (Section 3.10.2)

Test Dependencies: There are no test dependencies needed for this sequence of tests.

12.2.2.1 VIRS, PR, TMI, and GV Data Ingest and Store

TEST Procedure No.: A120220.010\$G	Date Executed:	Test Conductor:
Title: VIRS, PR, TMI, and GV Data Ingest and Store		
Objective : The VIRS, PR, TMI, and GV Data Ingest and Store Test verifies that VIRS, PR, TMI, and GV level 1A through level 3B data, metadata, and browse data can be ingested and archived by ECS operators at the GSFC DAAC.		
Requirements	Acceptance Criteria	
DADS0475#A	<p>This requirement is verified through test.</p> <p>The DADS shall provide storage for the following TRMM data:</p> <ul style="list-style-type: none"> a. L1A-L4 equivalent data products b. Associated correlative data sets c. Associated ancillary data sets d. Associated calibration data sets e. Associated metadata f. Documents 	

	<p>g. Algorithms.</p> <p>During the test, the production planner allocates the required resources for the data to be ingested and ensures that the storage needed for this data is available.</p> <p>Items f and g are not verified in this test.</p>
DADS1805#A	<p>This requirement is verified through demonstration.</p> <p>The DADS shall provide an inventory system capable, at a minimum, of the following:</p> <ul style="list-style-type: none"> a. Accepting the number of new inventory entries, one per granule, for the number of granules per day as specified in Appendix C b. Uniquely identifying each data granule c. Tracking the physical location of each data granule. <p>During the test, the tester sets up the TSDIS simulator for transfer of VIRS, PR, TMI, and GV data to be ingested, monitors ingest activities, and verifies that the inventory uniquely identifies each granule and the physical location of the ingested data.</p>
TRMM3010#A	<p>This requirement is verified through test.</p> <p>The ECS systems at the MSFC DAAC shall ingest TRMM standard products (Level 1A - 3B) for PR and TMI from TSDIS.</p> <p>During the test, the tester sets up the TSDIS simulator for transfer of (Level 1A-3B) PR and TMI products to be ingested, ingest activities proceed, and upon completion of ingest activities, the Ingest Status is recorded in the Ingest History Log.</p> <p>**NOTE** This requirement is verified at the GSFC DAAC.</p>
TRMM3030#A	<p>This requirement is verified through test.</p> <p>The ECS MSFC DAAC shall ingest TRMM browse products for PR and TMI from TSDIS.</p> <p>During the test, the tester sets up the TSDIS simulator for transfer of PR and TMI browse products to be ingested, ingest activities proceed, and upon completion of ingest activities, the Ingest Status is recorded in the Ingest History Log.</p> <p>**NOTE** This requirement is verified at the GSFC DAAC.</p>
TRMM3050#A	<p>This requirement is verified through test.</p> <p>The ECS systems at the MSFC DAAC shall ingest TRMM Ground Validation (GV) data products and associated metadata from TSDIS.</p> <p>During the test, the tester sets up the TSDIS simulator for transfer of GV Level 1A - 3B products to be ingested, ingest activities proceed, and upon completion of ingest activities, the Ingest Status is recorded in the Ingest History Log.</p>

	<p>**NOTE** This requirement is verified at the GSFC DAAC.</p>
TRMM3060#A	<p>This requirement is verified through test.</p> <p>The PR, TMI, and GV data ingested from TSDIS by ECS shall be archived in the ECS systems at the MSFC DAAC.</p> <p>Upon completion of ingest activities, the tester queries the data server to ensure that the PR, TMI, and GV data ingested is archived.</p> <p>**NOTE** This requirement is verified at the GSFC DAAC.</p>
TRMM3070#A	<p>This requirement is verified through demonstration.</p> <p>The ECS systems at the MSFC DAAC shall ingest TRMM data files and data products, including metadata, daily.</p> <p>During the test, the tester sets up the TSDIS simulator for transfer of TRMM data files and products (including metadata) to be ingested, ingest activities proceed, and upon completion of ingest activities, the Ingest Status is recorded in the Ingest History Log.</p> <p>**NOTE** This requirement is verified at the GSFC DAAC.</p>
TRMM4010#A	<p>This requirement is verified through test.</p> <p>The ECS systems at the GSFC DAAC shall ingest TRMM standard products (Level 1A - 3B) for VIRS from TSDIS.</p> <p>During the test, the tester sets up the TSDIS simulator for transfer of VIRS Level 1A - 3B products to be ingested, ingest activities proceed, and upon completion of ingest activities, the Ingest Status is recorded in the Ingest History Log.</p>
TRMM4030#A	<p>This requirement is verified through test.</p> <p>The ECS systems at the GSFC DAAC shall ingest TRMM browse products for VIRS from TSDIS.</p> <p>During the test, the tester sets up the TSDIS simulator for transfer of VIRS browse products to be ingested, ingest activities proceed, and upon completion of ingest activities, the Ingest Status is recorded in the Ingest History Log.</p>
TRMM4050#A	<p>This requirement is verified through test.</p> <p>The VIRS data ingested from TSDIS by ECS shall be archived at the ECS systems at the GSFC DAAC.</p> <p>Upon completion of ingest activities, the tester queries the data server to ensure that the VIRS data ingested is archived.</p>
TRMM4060#A	<p>This requirement is verified through test.</p> <p>The ECS systems at the GSFC DAAC shall ingest TRMM data files and data products, including metadata, daily.</p> <p>During the test, the tester sets up the TSDIS simulator for transfer of VIRS, PR, TMI, and GV data files and products (including metadata) to</p>

	be ingested, ingest activities proceed, and upon completion of ingest activities, the Ingest Status is recorded in the Ingest History Log.
TRMM5010#A	<p>This requirement is verified through test.</p> <p>ECS shall ingest TRMM metadata, and browse from TSDIS along with the TRMM standard products in the ECS format.</p> <p>During the test, the tester sets up the TSDIS simulator for transfer of VIRS, PR, TMI, and GV metadata and browse data to be ingested, ingest activities proceed, and upon completion of ingest activities, the Ingest Status is recorded in the Ingest History Log.</p>

Test Inputs:

Data Set Name	Data Set ID	File Name	Description	Version
VIRS1A_001			One days worth of VIRS 1A data, 16 files +16 SFDU headers	1
TMI1A_001			One days worth of TMI 1A data, 16 files +16 SFDU headers	1
PR1A_001			One days worth of PR 1A data, 16 files +16 SFDU headers	1
VIRS1B_001			One days worth of VIRS 1B Radiance data, 16 files HDF/EOS format	1
VIRS1BBROWSE_001			One days worth of VIRS 1B browse data, 1 file HDF/EOS format	1
TMI1B_001			One days worth of TMI Brightness/Temperatures 1B data, 16 files HDF/EOS format	1
TMI1BBROWSE_001			One days worth of TMI 1B browse data, 1 file HDF/EOS format	1
PR1B_001			One days worth of PR 1B Power data, 16 files HDF/EOS format	1
PR1BBROWSE_001			One days worth of PR 1B browse data, 1 file HDF/EOS format	1
GV1B_001			One days worth of GV 1B Calibration data, 264 files	1

			HDF/EOS format	
PR1C_001			One days worth of PR 1C Reflectivities data, 16 files HDF/EOS format	1
PR1CBROWSE_001			One days worth of PR 1C browse data, 1 file HDF/EOS format	1
GV1C_001			One days worth of GV 1C QC Radar Reflectivity data, 264 files HDF/EOS format	1
GV1CBROWSE_001			One days worth of GV 1C browse data, 11 files HDF/EOS format	1
TMI2A_001			One days worth of TMI 2A Profiling data, 16 files HDF/EOS format	1
TMI2ABROWSE_001			One days worth of TMI 2A browse data, 1 file HDF/EOS format	1
PR2A_001			One days worth of PR 2A Surface Cross Section data, 16 files HDF/EOS format	1
PR2ABROWSE_001			One days worth of PR 2A Surface Cross Section browse data, 1 file HDF/EOS format	1
PR2A_002			One days worth of PR 2A Qualitative data, 16 files HDF/EOS format	1
PR2ABROWSE_002			One days worth of PR 2A Qualitative browse data, 1 file HDF/EOS format	1
PR2A_003			One days worth of PR 2A Profile data, 16 files HDF/EOS format	1
PR2ABROWSE_003			One days worth of PR 2A Profile browse data, 1 file HDF/EOS format	1
GV2A_001			One days worth of GV 2A Existence data, 11 files +11	1

			SFDU headers	
GV2A_002			One days worth of GV 2A Radar Site Rain Map data, 264 files HDF/EOS format	1
GV2ABROWSE_002			One days worth of GV 2A Radar Site Rain Map browse data, 11 files HDF/EOS format	1
GV2A_003			One days worth of GV 2A Radar Site Conv./Stratiform Map data, 264 files HDF/EOS format	1
GV2ABROWSE_003			One days worth of GV 2A Radar Site Conv./Stratiform Map browse data, 11 files HDF/EOS format	1
GV2A_004			One days worth of GV 2A Radar Site 3-D Reflectivities data, 264 files HDF/EOS format	1
GV2ABROWSE_004			One days worth of GV 2A Radar Site 3-D Reflectivities browse data, 11 files HDF/EOS format	1
TMI3A_001			One months worth of TMI3A Emission data, 1 file HDF/EOS format	1
TMI3ABROWSE_001			One months worth of TMI3A Emission browse data, 1 file HDF/EOS format	1
PR3A_001			One months worth of PR3A Rainfall data, 1 file HDF/EOS format	1
PR3ABROWSE_001			One months worth of PR3A Rainfall browse data, 1 file HDF/EOS format	1
PR3A_002			One months worth of PR3A Surface Rain data, 1 file HDF/EOS format	1
PR3ABROWSE_002			One months worth of PR3A Surface Rain	1

			browse data, 1 file HDF/EOS format	
GV3A_001			Five days worth of GV3A 5-day Site Rain Map data, 11 files HDF/EOS format	1
GV3ABROWSE_0 01			Five days worth of GV3A 5-day Site Rain Map browse data, 11 files HDF/EOS format	1
GV3A_002			One months worth of GV3A 30-day Site Rain Map data, 11 files HDF/EOS format	1
GV3ABROWSE_0 02			One months worth of GV3A 30-day Site Rain Map browse data, 11 files HDF/EOS format	1
GV3A_003			One months worth of GV3A Monthly 3D- Structure data, 11 files HDF/EOS format	1
GV3ABROWSE_0 03			One months worth of GV3A Monthly 3D- Structure browse data, 11 files HDF/EOS format	1
TRMM2B_001			One days worth of TRMM 2B Combined data, 16 files HDF/EOS format	1
TRMM2BBROWS E_001			One days worth of TRMM 2B Combined data, 1 file HDF/EOS format	1
TRMM3B_001			One months worth of TRMM 3B Rainfall Combined data, 1 file HDF/EOS format	1
TRMM3BBROWS E_001			One months worth of TRMM 3B Rainfall Combined Browse data, 1 file HDF/EOS format	1
TRMM3B_002			Five days worth of TRMM 3B GPI Calibration data, 1 file HDF/EOS format	1
TRMM3BBROWS			Five days worth of	1

E_002			TRMM 3B GPI Calibration Browse data, 1 file HDF/EOS format	
TRMM3B_003			Five days worth of TRMM 3B Data Sources data, 1 file HDF/EOS format	1
TRMM3BBROWS E_003			Five days worth of TRMM 3B Data Sources Browse data, 1 file HDF/EOS format	1
TRMM3A_001			One Months worth of TRMM 3A SSM/I Monthly Gridded Rainfall data, 1 file HDF/EOS format	1
TRMMEPHEM_00 1			One days worth of TRMM Platform Ephemeris, 1 file in binary EPHEM format	1

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Query data server for existence of the files that are to be ingested during this procedure. Files must not exist.	
20	DAAC Production Planner: Invoke the resource planning system.	
30	Expected Results: System: Planning Menu is displayed.	
40	DAAC Production Planner: Select "Create New Plan".	
50	DAAC Production Planner: For each ingest ground event for this procedure enter: ground event, description, start time, duration.	
60	DAAC Production Planner: Send the completed requests to the planning subsystem.	
70	Expected Results: System: Acknowledges receipt of the requests.	
80	Expected Results: System: Processes requests and automatically allocates resources, resource plan is sent to Production Planner.	
90	DAAC Production Planner: Review plan and email a copy to the Archive Manager.	
100	DAAC Archive Manager: Allocate resources according to plan, send notification to the Resource Manager.	
110	DAAC Resource Manager: Review configuration and resolve discrepancies.	
120	DAAC Ingest/distribution Technician: perform steps 1000-1140 with VIRS1A_001 data files.	
130	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TMI1A_001 data files.	
140	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR1A_001 data files.	
150	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with VIRS1B_001 data files.	
160	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with VIRS1BBROWSE_001 data files.	
170	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TMI1B_001 data files.	
180	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TMI1BBROWSE_001 data files.	

190	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR1B_001 data files.	
200	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR1BBROWSE_001 data files.	
210	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV1B_001 data files.	
220	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR1C_001 data files.	
230	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR1CBROWSE_001 data files.	
240	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV1C_001 data files.	
250	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV1CBROWSE_001 data files.	
260	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TMI2A_001 data files.	
270	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TMI2ABROWSE_001 data files.	
280	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR2A_001 data files.	
290	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR2ABROWSE_001 data files.	
300	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR2A_002 data files.	
310	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR2ABROWSE_002 data files.	
320	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR2A_003 data files.	
330	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR2ABROWSE_003 data files.	
340	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV2A_001 data files.	
350	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV2A_002 data files.	
360	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV2ABROWSE_001 data files.	
370	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV2ABROWSE_002 data files.	
380	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV2A_003 data files.	
390	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV2ABROWSE_003 data files.	

400	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV2A_004 data files.	
410	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV2ABROWSE_004 data files.	
420	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TMI3A_001 data files.	
430	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TMI3ABROWSE_001 data files.	
440	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR3A_001 data files.	
450	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR3ABROWSE_001 data files.	
460	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR3A_002 data files.	
470	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with PR3ABROWSE_002 data files.	
480	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV3A_001 data files.	
490	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV3ABROWSE_001 data files.	
500	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV3A_002 data files.	
510	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV3ABROWSE_002 data files.	
520	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV3A_003 data files.	
530	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with GV3ABROWSE_003 data files.	
540	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM2B_001 data files.	
550	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM2BBROWSE_001 data files.	
560	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM3B_001 data files.	
570	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM3BBROWSE_001 data files.	
580	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM3B_002 data files.	
590	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM3BBROWSE_002 data files.	
600	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM3B_003 data files.	

610	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM3BBROWSE_003 data files.	
620	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMM3A_001 data files.	
630	DAAC Ingest/distribution Technician: Perform steps 1000-1140 with TRMMEPHEM_001 data files.	
640	Go to Wrap-up sequence	
	TSDIS INGEST STEPS	
1000	Tester: Set up TSDIS simulator for transfer of specified data files equivalent to the required amount of data (i.e. one days worth, five days worth, one months worth).	
1010	TSDIS Simulator: Send a DAN to ECS Ingest.	
1020	Expected Results: System: DAN receipt is logged and process is assigned an ID for status logging.	
1030	Expected Results: System Ingest: generates an ingest request and stores the request on a prioritized list. A DAN summary (data source, number of files, location of data) is placed in the event log.	
1040	DAAC Ingest-Distribution Technician: Monitor the status display; note DAN receipt.	
1050	Expected Results: System Ingest: Sends a DAA to TSDIS and logs a copy of the DAA.	
1060	Tester: Verify receipt of DAA by TSDIS simulator.	
1070	Expected Results: System Ingest: Schedules and performs data transfer; allocates required devices, logs status to event log.	
1080	Expected Results: System Ingest: Extracts and validates metadata; reports metadata validation status to event log.	
1090	DAAC Ingest-Distribution Technician: Check event log; metadata must be reported as valid.	
1100	Expected Results: System Ingest: Prepares and generates a data server insert request.	
1110	Expected Results: System Ingest: Sends DDN to TSDIS simulator.	
1120	TSDIS Simulator: Receives DDN, sends a DDA.	
1130	Expected Results: System Ingest: DDA is received and logged; Ingest status recorded in Ingest History Log. Status of this ingest ID is removed from Ingest Status Display.	

1140	DAAC Ingest-Distribution Technician: Review Ingest History Log and Status Display.	
	WRAP-UP SEQUENCE	
650	Tester: Query data server for existence of the files that were ingested during this procedure. Files must exist.	
660	Tester: Secure the following materials : 1. System Event Log Printout 2. Ingest History Log Printout 3. Results of data server query for existing data files prior to procedure. 4. Results of data server query for existing data files after procedure.	
<p>Data Reduction and Analysis Steps:</p> <p>A. The following materials must be secured for analysis at the close of the procedure:</p> <ol style="list-style-type: none"> 1. System Event Log Printout 2. Ingest History Log Printout 3. Results of data server query for existing data files prior to procedure 4. Results of data server query for existing data files after procedure <p>B. Compare the Ingest History Logs, the data server query results, and the test data set descriptions for this procedure. Confirm that all data scheduled for ingest was logged and stored on the data server. Confirm that all metadata extracted and generated is accurate and complete.</p>		
Signature:		Date :

12.2.3 TRMM Data Product Distribution

The TRMM Data Product Distribution Sequence tests the capability of the GSFC DAAC to distribute the TSDIS higher level TRMM data and products to TRMM Science Users (TSUs).

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

TRMM Science Users

Operator Position(s): The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

DAAC Ingest/Distribution Technician

Operational Scenario(s): The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605/OP1), that were used to develop tests in this sequence of tests are listed:

Network Data Distribution (Pull) Scenario (nominal) (Section 3.11.1)

Test Dependencies: There are no test dependencies needed for this sequence of tests.

12.2.3.1 TRMM Data Product Distribution

TEST Procedure No.: A120230.010\$G	Date Executed:	Test Conductor:
Title: TRMM Data Product Distribution		
Objective : The TRMM Data Product Distribution Test verifies the capability of the GSFC DAAC operators to distribute the TSDIS higher level TRMM data and products to TRMM Science Users (TSUs).		
Requirements	Acceptance Criteria	
DADS2380#A	<p>This requirement is verified through demonstration.</p> <p>Each DADS shall send to the SCF, at a minimum, the following:</p> <ul style="list-style-type: none"> a. L0-L4 b. Expedited data d. Metadata e. Ancillary data f. Calibration data g. Correlative data h. Documents i. Algorithms <p>During the test, the tester utilizes the V0 Client and the TSUs to search for VIRS and GV data products and request a PULL transfer of the products. The request is received at the GSFC DAAC, processed, and the products are distributed to the TSUs.</p> <p>Items h and i are not verified in this test.</p>	
DADS2410#A	<p>This requirement is verified through demonstration.</p> <p>Each DADS shall distribute data from the archive in response to receipt of a product order from the IMS.</p> <p>During the test, the tester utilizes the IMS to search for and order VIRS data products. The data server receives the product order, places the data on a staging disk and distributes the product to the user.</p>	
SMC-6335#A	<p>This requirement is verified through demonstration.</p> <p>The LSM shall, as needed, maintain and update a data tracking system that, at a minimum:</p> <ul style="list-style-type: none"> a. Tracks data transport from element input to element output b. Allows the status of all product-production activities to be determined <p>The MSS accountability management service must properly track the status of a data order from order submission to completion.</p>	

TRMM5040#A	<p>This requirement is verified through test.</p> <p>ECS shall have the capability to archive and distribute standard TRMM data files and products (including VIRS, PR and TMI data, metadata, GV data, algorithms and documentation) as provided and produced by TSDIS and the TRMM Science Team.</p> <p>During the test, the tester utilizes the V0 Client and the TSUs to search for VIRS and GV data products and request a PULL transfer of the products. The request is received at the GSFC DAAC, processed, and the products are distributed to the TSUs.</p> <p>Archive capability is not verified by this test. Archive capability is verified in test procedure A120220.010\$G. Algorithms and Documentation are not distributed in this procedure.</p>
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Test Inputs:

Data Set Name	Data Set ID	File Name	Description	Version
VIRS1A_001			One days worth of VIRS 1A data, 16 files +16 SFDU headers	1
GV1B_001			One days worth of GV Calibration data, 264 files.	1
NMC FNL_001			One days worth of NMC FNL data, 4 files, GRIB format.	1
TRMM EPHEM_001			One days worth of TRMM Platform Ephemeris, 1 file in binary EPHEM format	1

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	DAAC Ingest/Distribution Technician: Perform steps 200-320 for VIRS 1A data.	
20	DAAC Ingest/Distribution Technician: Perform steps 200-320 for GV 1B data.	
30	DAAC Ingest/Distribution Technician: Perform steps 200-320 for NMCNFL Metadata.	
40	DAAC Ingest/Distribution Technician: Perform steps 200-320 for TRMMEPHEM data.	
50	Go to Wrap-up Sequence	
200	Tester: Establish a client session to the data server and create a working collection of data. (Using the V0 Client, search for the specified data set).	
210	Expected Results: The Data Server assigns a session ID and logs(via MSS Logging Services) the initiation of the session. The Data Server logs and queues the search request sent by the user to create a working collection and searches the Metadata Database in accordance with the user's indicated search attributes. Identified granules are returned to the user's working collection.	
220	Tester: Refines the contents of the working collection to specific granules of high interest and invokes an acquire(via ftp pull) service to obtain the high interest granules.	
230	DAAC Ingest/Distribution Technician: Track the progress of the request and review any errors recorded by using either the <i>other screens</i> option and selecting <i>Logs & Reports (MSS)</i> from DSS System Management main menu or can view actual request status's via the Distribution Management Component's <i>Requests</i> screen.	

240	Expected Results: The Data Server logs (via MSS Logging Services) and queues subsequent search requests to identify high interest granules and searches the Metadata Database in accordance with the user's refined search attributes when the request is reached in the request queue. The user's working collection is updated with the results of each subsequent search. Distribution Management logs (via MSS Logging Services) the Acquire Via ftp Pull Request and sends a Data Retrieval Request to Storage Management listing the granules of high interest to be retrieved and placed on the Pull Volume.	
250	DAAC Ingest/Distribution Technician: Review the progress of the request via either the <i>other screens</i> option and selecting <i>Logs & Reports (MSS)</i> from DSS System Management main menu or via Storage Management Component's <i>Logs & Reports (MSS)</i> submenu available on the <i>Other Screens</i> pull down menu.	
260	Expected Results: Storage Management logs (via MSS Logging Services) and queues the Data Retrieval Request. When the request is reached in the request queue, Storage Management requests the appropriate granules be retrieved from the archive via the Archive Management OTS Product. The granules are placed on the Working Storage and transferred to the Pull Volume, the reference count for each file in those granules is incremented and a Data Retrieval Request completed message is logged and sent to Distribution Management.	
270	DAAC Ingest/Distribution Technician: View Pull Area Utilization data via the Storage Management Component's <i>Pull Area Utilization</i> screen.	
280	Expected Results: Distribution Management extracts the file names and path names associated with the high interest granules. A Retrieval Complete Notification is created which includes file and path names. This notification is sent to the requesting user's client or via email if no client is active.	
290	Tester: Retrieves the requested data from the DAACs Pull Volume.	
300	Expected Results: CSS Subsystem detects and logs (via MSS Logging Services) that an authorized user has accessed specific files on the Pull Volume. CSS provides a Pull Volume Access Notification to Storage Management which enumerates the path names and files retrieved by an associated user ID.	

310	DAAC Ingest/Distribution Technician: Verify request completion via either the <i>Other Screens</i> option and selecting <i>Logs and Reports (MSS)</i> from DSS System Management main menu, the Storage Management Component's <i>Logs and Reports (MSS)</i> submenu available on the <i>Other Screens</i> pull down menu, or the Distribution Management Component's <i>Request Screen</i> .	
320	Expected Results: Storage Management receives and logs (via MSS Logging Services) the Pull Volume Access Notification. Storage Management parses the notification and determines which files were retrieved by the user. The reference count for those files is decremented.	
	WRAP-UP SEQUENCE	
330	Tester: Secure the following materials: 1. Logs and Reports printout 2. Pull Area Utilization printout. 3. Dumps of data retrieved.	
<p>Data Reduction and Analysis Steps:</p> <p>A. Confirm that the Logs and Reports printout and the Pull Area Utilization printout are complete for all search, acquire, and distribution actions taken during the procedure.</p> <p>B. Confirm that data pulled was data requested and that data was uncorrupted by the transfer.</p>		
Signature:		Date :

12.2.4 Data Accounting Sequence

The Data Accounting Sequence demonstrates the ECS capability to perform data accounting of L1A-L3B, ancillary data, metadata, browse data, algorithms and documentation. This includes accounting for new data received, as well as data updates (the result of reprocessing) and data deletions.

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: There are no external interfaces needed for this sequence.

Operator Position(s): The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

DAAC Resource Planner

Operational Scenario(s): There are no operations scenarios taken from the Operations Scenarios for the ECS Project: Release-A, (605/OP1) used during this sequence of tests.

Test Dependencies: A table identifies the test procedure(s) in a sequence of tests that should be run prior to or concurrently with a sequence or test procedure.

Test Procedure No.	Site/Procedure No.	Comments
A120240.020\$G	A120230.010\$G	Prior

12.2.4.1 Data Product/Data Receipt Accounting

TEST Procedure No.: A120240.020\$G	Date Executed:	Test Conductor:		
Title: Data Product/Data Receipt Accounting				
Objective : The Data Product/Data Receipt Accounting Test verifies the ECS's ability to perform data accounting for the level 1A through level 3B, ancillary data, metadata, browse data, algorithms and documentation. Data accounting includes new data, data updates due to reprocessed data as well as data deletion; unless the ECS is directed by the appropriate authority not to delete data.				
Requirements		Acceptance Criteria		
DADS0880#A		<p>This requirement is verified through test.</p> <p>For data which it has distributed, each DADS, via the LSM, shall generate required accounting information.</p> <p>During the test, distribution reports are generated and analyzed to confirm that accurate accounting information is generated for the data that was distributed in test procedure A120230.010\$G.</p>		
Test Inputs:				
Data Set Name	Data Set ID	File Name	Description	Version
None.				

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	DAAC Resource Planner: Access the DDIST and generate the following reports: Distribution Profile, Media Distribution, Electronic Distribution, Push Utilization, and Distribution Error.	
20	Expected results: These reports must be available and contain the distribution information for test procedure A120230.010\$G.	
<p>Data Reduction and Analysis Steps:</p> <p>A. The following materials must be secured for analysis at the end of the procedure:</p> <ol style="list-style-type: none"> 1. Distribution Profile Report 2. Media Distribution Report 3. Electronic Distribution Report 4. Push Utilization Report 5. Distribution Error Report <p>B. Confirm that the aforementioned reports contain accounting information for all VIRS, PR, TMI, and GV data distributed in test procedure A120230.010\$G.</p>		
Signature:		Date :

12.3 AM-1 End-to-End Scenario

This scenario does not apply to the GSFC DAAC.

12.4 Science Data Access and Interoperability Scenario

This scenario demonstrates that an EOS investigator can access, receive, exchange, and store assorted data sets and information among ECS DAAC sites, the Version 0 System and the Larry Server. The scenario confirms that a scientist can perform multi-site data search and retrieval; retrieve science algorithms and produce science data products; and store the data products and associated metadata in formats compatible with these systems. The scenario describes the sequential process of searching for and accessing input data sets, including any required ancillary data; manipulating and analyzing these data sets; using corresponding algorithms to develop data products; generating and/or updating metadata descriptions of these products; and storing these products and the new metadata in standard formats within the ECS. This scenario also confirms catalog Interoperability between the ECS DAACs, the V0 DAACs and the Larry Server.

12.4.1 Science Data Search and Retrieval Sequence

This sequence of tests verifies that a science user can perform a sequential, multi-site search for selected data sets required to perform a desired science analysis. The scientist searches on-line catalogs and directories among data stored within the ECS DAACs, the V0 DAACs and the Larry Server to find the data relevant to the science analysis to be performed. The scenario confirms the scientist's ability to request and receive these data using specified data set search characteristics, and to temporarily store these data for subsequent analysis and for higher level data product generation.

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

LaRC ECS DAAC

EDC ECS DAAC

GSFC V0 DAAC

Larry Server

Operator Position(s): The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support this sequence are listed:

DAAC Ingest/Distribution Technician

Operational Scenario(s): The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release A document (605/OP1), that were used to develop tests in this sequence of tests are listed:

Network Data Distribution (Pull) Scenario (Section 3.11.1)

Test Dependencies: There are no test dependencies needed for this sequence of tests.

12.4.1.1 Multi-Site Data Search and Access

TEST Procedure No.: A120510.010\$G	Date Executed:	Test Conductor:		
Title: Multi-Site Data Search and Access				
Objective: This procedure tests the capability of ECS to allow the user to perform data search and data access among all sites.				
Requirements		Acceptance Criteria		
DADS0570#A	This requirement is verified through test. Each DADS shall verify product orders from the IMS. This requirement verifies that the system insures that each Data Request and Service Request contains the necessary parameters to handle the request; verifies that all reported error and warning conditions are logged.			
DADS1085#A	This requirement is verified through test. Each DADS shall maintain a data access log. This requirement verifies that the system provides the capability for the operation staff to view, sort by time frame, sort by source of access, and sort by data type the Data Access Log.			
IMS-0600#A	This requirement is verified through demonstration. The IMS shall provide the capability to search a directory of information that describes EOSDIS, non-EOSDIS, and ADC earth sciences data. The WKBCH CI shall provide the user the capability to locate non-ECS data and services interoperable with ECS, and the registered user the capability to obtain ECS data and services.			
IMS-0610#A	This requirement is verified through demonstration. The IMS shall provide the capability to search the data inventory which describes each granule of EOSDIS data. This requirement is verified when the WKBCH CI provide the user the capability to transparently search across any combination of Data Servers for stored EOSDIS Data Granules; the SDSRV CI accepts and processes Search Requests to search the Inventory; and the SDSVR CI support Inventory searches based on the Core Inventory Metadata.			
Test Inputs:				
Data Set Name	Data Set ID	File Name	Description	Version

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Logs into ECS desktop; brings up ECS version of the V0 Client (Release A Search and Order Tool).	
20	Expected Results: The "Welcome" screen appears after all of the necessary information is entered.	
	Directory Search	
30	Tester: Selects Search Screen button.	
40	Expected Results: System displays the Search Screen.	
50	Tester: Selects Go To Directory. Selects "Global Change Master Directory" to review dataset holdings of various agencies and institutions. Click on "Yes" in the "You are entering the GCMD" dialog box.	
60	Expected Results: Instructions to initiate a GCMD session is displayed.	
70	Tester: Press the Return key to continue the message on the GCMD Welcome screen.	
80	Expected Results: System displays the information from the GCMD screen.	
90	Tester: Reviews the descriptions of the displayed datasets and note where they are located. Types "quit" to exit GCMD.	
100	Expected Results: The Welcome screen is displayed.	
110	Tester: Select the Search Screen button.	
120	Expected Results: The Search screen is displayed.	
130	Tester: Clicks on Source/Platform List button.	
140	Expected Results: The Valid list for Source/Platform is displayed.	
150	Tester: Selects DMSP-F8 and select the Guide Info button. Selects "dmosp f8.html" or similar document title.	
160	Expected Results: The document is displayed.	
170	Tester: Select "1." Document Information.	
180	Expected Results: The document information is displayed.	
190	Tester: Select Close to close the document.	

200	Expected Results: Document is closed and system returns to the Valid for Source/Platform window.	
210	Tester: Select Cancel.	
220	Expected Results: Valid for Source/Platform window closes.	
230	Tester: Selects Directory type search. Selects Dataset ID List button. Selects "SSM/I" as the search criteria to query the directory for SSM/I gridded brightness temperature data. Click on the OK button. Initialize the search by clicking on the Execute Search button.	
240	Expected Results: The Communications Status screen is displayed with the status of the search and network activity. Observe the search until complete.	
250	Tester: Select the bolded Data button in the View column.	
260	Expected Results: The Directory results screen will be displayed	
270	Tester: Click on the count button for the "SSM/I gridded brightness temperature data" and observe that everything pertaining to the dataset is highlighted. Order the data and have it sent via ftp.	
280	Expected Results: The data is ordered and received as requested.	
290	Tester: Observe the Directory Results screen, the Communications Status screen, and the Search screen.	
300	Expected Results: The system allows multiple windows to be displayed simultaneous.	
310	Tester: Observe the buttons and pull down menus on each displayed screen.	
320	Expected Results: Each screen buttons and pull menus are functional and the user can randomly move through each field.	
330	Tester: Observe the use of non-standard keys (i.e., metacharacters such as Ctrl key, etc.).	
340	Expected Results: The user has minimal and consistent use of the keys on each screen.	
350	Tester: Perform a multi-site data search by specifying a search for both VIRS and CERES data.	
355	Expected Results: Communication Status screen appears listing the data centers that have the search attributes specified.	
360	Tester: Make some invalid selections in some of the fields on one of displayed screens.	
370	Expected Results: Self explanatory and meaningful error messages are displayed.	
380	Tester: Select the Help pull down menu on one of the displayed screens and observe the context-sensitive help menu.	
390	Expected Results: Help items are displayed and messages indicating direction are output for selections.	
400	Tester: Select Exit IMS.	
410	Expected Results: The V0 Client is disabled and user is returned to the Desktop.	
420	Tester: Initialize the Advertising Service to enables searches using the WWW.	

430	Expected Results: The Advertising Service is initialized.	
440	Tester: Initialize a search using the datasets: "AVHRR Pathfinder Land 10 Day Mosaics", "CHANGE SSM/I DERIVED RAIN INDICES", and "SRB_MONTHLY" as the search criteria.	
450	Expected Results: Mosaics or Netscape initialize a search for the datasets and displays the findings.	
460	Tester: Read the retrieved information on the datasets.	
	Inventory Search	
470	Tester: Select the Search Screen button.	
480	Expected Results: The Search Screen is displayed.	
490	Tester: Select the search type - Inventory. Click on the Parameters List button.	
510	Expected Results: The Valid list for Parameters is displayed.	
520	Tester: Select "ANTENNA TEMPERATURE", "OZONE", and "RADIANCE" parameters and then select the OK button.	
530	Expected Results: The Valid list for Parameters is closed.	
540	Tester: Select the Number of Granules returned per Dataset. Reduce the number of granules to 30 (from the default of 100). Select the Geographic Information area and select the None button.	
560	Expected Results: A menu is displayed.	
570	Tester: Select Point on the menu and enter "53" in the Latitude field and "170" in the Longitude" field. Initialize the execution of the search.	
590	Expected Results: The Communications Status screen is displayed. The search message is going out to all of the data centers that hold relevant data or that were specified in the search. Monitor until complete.	
600	Tester: Select the Data button in the GSFC row.	
610	Expected Results: The Inventory Results screen is displayed.	
620	Tester: Select "AVHRR-LAC" with Latitude = 80.57, Longitude = 166.82 and any start date and time by clicking on the granule. Mark the granule for Detail Info and select the selection list button.	
640	Expected Results: Observe the granule selected	
650	Tester: Select the Inventory Results button, Goto Detailed Information For Granules.	
660	Expected Results: The Detailed Inventory Results screen is displayed. Observe the detailed granule information for the selected granule.	
670	Tester: Select Close	
680	Expected Results: The Detailed Inventory Results screen closes and the Inventory result screen is displayed	
690	Tester: View the geographic coverage of a granule by selecting Coverage Map	
700	Expected Results: A two-dimensional graphical representation of the geographic coverage of the selected granule(s) is displayed	

710	Tester: Select some of the plot options on the Coverage Map to manipulate the geographic area	
720	Expected Results: The Map is adjusted according to user selections	
730	Tester: Return to the Search Screen. Initialize an inventory search using "SSM/I" as keyword for the search criteria and enter "rectangle" as the geographic information. The SSM/I gridded brightness temperatures is entered to span a 5 year period, 1987-1991 (North of 30 degrees N.)	
750	Expected Results: The search is initialized and information on the dataset is displayed.	
760	Tester: Select the Coverage Map to view some of the granules geographic coverage.	
770	Expected Results: A two-dimensional graphical representation of the geographic coverage of the selected granule(s) is displayed	
780	Tester: Plot a lat/lon grid on the map and select some political boundaries and rivers to overlay on the map	
790	Expected Results: The Coverage Map is enhanced with an overlay of the specified political boundaries and rivers on the original Map	
	Data Access	
800	Tester: Establish a client session to the data server and create a working collection of data. (Using the Release A Search and Order Tool, search for the specified data set).	
810	Expected Results: The Data Server assigns a session ID and logs(via MSS Logging Services) the initiation of the session. The Data Server logs and queues the search request sent by the user to create a working collection and searches the Metadata Database in accordance with the user's indicated search attributes. Identified granules are returned to the user's working collection.	
820	Tester: Refines the contents of the working collection to specific granules of high interest and invokes an acquire(via ftp pull) service to obtain the high interest granules.	
830	DAAC Ingest/Distribution Technician: Track the progress of the request and review any errors recorded by using either the <i>other screens</i> option and selecting <i>Logs & Reports (MSS)</i> from DSS System Management main menu or can view actual request status's via the Distribution Management Component's <i>Requests</i> screen.	

840	Expected Results: The Data Server logs (via MSS Logging Services) and queues subsequent search requests to identify high interest granules and searches the Metadata Database in accordance with the user's refined search attributes when the request is reached in the request queue. The user's working collection is updated with the results of each subsequent search. Distribution Management logs (via MSS Logging Services) the Acquire Via ftp Pull Request and sends a Data Retrieval Request to Storage Management listing the granules of high interest to be retrieved and placed on the Pull Volume.	
850	DAAC Ingest/Distribution Technician: Review the progress of the request via either the <i>other screens</i> option and selecting <i>Logs & Reports (MSS)</i> from DSS System Management main menu or via Storage Management Component's <i>Logs & Reports (MSS)</i> submenu available on the <i>Other Screens</i> pull down menu.	
860	Expected Results: Storage Management logs (via MSS Logging Services) and queues the Data Retrieval Request. When the request is reached in the request queue, Storage Management requests the appropriate granules be retrieved from the archive via the Archive Management OTS Product. The granules are placed on the Working Storage and transferred to the Pull Volume, the reference count for each file in those granules is incremented and a Data Retrieval Request completed message is logged and sent to Distribution Management.	
870	DAAC Ingest/Distribution Technician: View Pull Area Utilization data via the Storage Management Component's <i>Pull Area Utilization</i> screen.	
880	Expected Results: Distribution Management extracts the file names and path names associated with the high interest granules. A Retrieval Complete Notification is created which includes file and path names. This notification is sent to the requesting user's client or via email if no client is active.	
890	Tester: Retrieves the requested data from the DAACs Pull Volume.	
900	Expected Results: CSS Subsystem detects and logs (via MSS Logging Services) that an authorized user has accessed specific files on the Pull Volume. CSS provides a Pull Volume Access Notification to Storage Management which enumerates the path names and files retrieved by an associated user ID.	

910	<p>DAAC Ingest/Distribution Technician: Verify request completion via either the <i>Other Screens</i> option and selecting <i>Logs and Reports (MSS)</i> from DSS System Management main menu, the Storage Management Component's <i>Logs and Reports (MSS)</i> submenu available on the <i>Other Screens</i> pull down menu, or the Distribution Management Component's <i>Request Screen</i>.</p>	
920	<p>Expected Results: Storage Management receives and logs (via MSS Logging Services) the Pull Volume Access Notification. Storage Management parses the notification and determines which files were retrieved by the user. The reference count for those files is decremented.</p>	

Data Reduction and Analysis Steps:	
Signature:	Date:

12.4.1.2 Data Receipt and Storage

This test is consolidated with A090310.040\$L, A090310.050\$L, A120540.010\$G, A100110.010\$G and A100110.020\$G.

12.4.1.3 Science Ancillary Data Access

This test is consolidated with A120540.020\$G, A090270.030\$G, A100140.020\$G, A120540.020\$G, A080490.010\$G, A100140.010\$G, A100140.040\$G, A120540.020\$G, A090270.010\$G, and A090130.020\$G.

12.4.2.1 Science algorithm Retrieval and Compatibility

This test is consolidated with A120530.020\$G, A120640.030\$G, and A100230.010\$G.

12.4.3.1 Metadata Production and Updating

This test is consolidated with A090310.050\$L, A090310.050\$L, A090240.010\$G, A090270.010\$G, A090430.010\$G, A120220.010\$G, A090430.010\$G and A120640.030\$G.

12.4.3.2 Metadata Retrieval

This test is consolidated with A100110.060\$G, A100110.070\$G, A100110.080\$G, A120610.010\$G, A100110.110\$G, and A120640.030\$G.

12.4.4 ECS Data Set Interoperability Sequence

This sequence confirms the ECS user's capability to exchange data and information among the ECS DAACs, the V0 DAAC and the Larry Server via data and catalog interoperability. Exchange information includes: advertising information (directory-level information about data sets); data holdings of ECS and the DAACs and the Larry Server; data search/search results; inventory, guide and browse information; user authentication; and product requests. Only HDF standard data formatted data is used in this sequence.

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for this sequence (both real and simulated) are listed:

Larry Server

GSFC V0 DAAC

Simulated Science user

Operator Position(s): The are no operator positions needed for this sequence.

Operational Scenario(s): The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605/OP1), that were used to develop tests in this sequence of tests are listed:

Resource Planning Scenario (Section 3.7.1)

TRMM Ancillary Data Ingest Scenario (Section 3.9.3)

Version 0 (V0) Data Ingest Scenario (Section 3.9.5)

Data Insertion Scenario (nominal) (Section 3.10.2)

Network Data Distribution (Pull) Scenario (Nominal) (Section 3.11.1)

Test Dependencies: There is no test dependencies needed for this sequence of tests.

12.4.4.1 ECS DAAC and V0 DAAC Interoperability

TEST Procedure No.: A120540.010\$G	Date Executed:	Test Conductor:
Title: ECS DAAC and V0 DAAC Interoperability		
Objective: This procedure tests the capability of ECS DAAC to V0 DAAC interface to support advertising information, user authentication, data search (inventory, guide, and browse), and data request.		
Requirements	Acceptance Criteria	
DADS2450#A	This requirement is verified through demonstration. Each DADS shall distribute data to elements of EOSDIS and approved non-EOSDIS data destinations. Note: This procedure verifies the distribution of data to elements of EOSDIS. This requirement is verified when the Data Distribution CI distributes any data, or appropriate subset, listed in the Inventory.	
EOSD1695#A	This requirement is verified through test. The ECS shall provide 2-way interoperability with the V0 system. This requirement is verified when the ECS and the ESDIS V0 IMS systems enable the user of each system to search, browse, and order data products made available by the other system.	
IMS-0600#A	This requirement is verified through demonstration. The IMS shall provide the capability to search a directory of information that describes whole EOSDIS, non-EOSDIS, and ADC earth science data sets. This requirement is verified when the tester is able to search a directory of information via the Workbench CI.	
IMS-0625#A	This requirement is verified through demonstration. The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs. This requirement is verified when the GateWay CI receives Inventory	

	Search Requests, Browse Requests, and Product Requests from, and sends Inventory Search Results to the Version 0 IMS using Version 0 system protocols.
IMS-0915#A	This requirement is verified through test. The IMS shall provide an interface to the V0 system for ordering data products to be delivered directly to the ECS user. This requirement is verified when the GSFC ECS DAAC sends the product directly to the authorized user either on physical media or on-line. The ECS user requests a product from the V0 archives. The request then passes from ECS to the ESDIS V0 Server via V0 protocols.
V0-0010#A	This requirement is verified through test. The ECS system shall provide 2-way interoperability with ESDIS V0. This requirement is verified when the ECS and V0 Systems interact with information servers of the other system by exchanging standard search protocols. The ECS uses current V0 standards and protocols for other interfaces system.
V0-0020#A	This requirement is verified through test. The ECS system shall be able to receive ECS User Authentication Requests from the ESDIS V0 IMS. This requirement is verified when the V0 IMS user sends and ECS receives ECS User Authentication Requests.
V0-0030#A	This requirement is verified through test. The ECS shall be able to send the ESDIS V0 IMS ECS User Authentication Information. This requirement is verified when the V0 IMS receives ECS User Authentication Information.
V0-0040#A	This requirement is verified through test. The ECS shall be able to send the ESDIS V0 server V0 User Authentication Requests. This requirement is verified when the ECS user sends and V0 server receives V0 User Authentication Requests.
V0-0050#A	This requirement is verified through test. The ECS shall be able to receive V0 User Authentication Information from the ESDIS V0 IMS server. This requirement is verified when the ECS receives V0 User Authentication Information from the ESDIS V0 server.
V0-0060#A	This requirement is verified through test. The ECS system shall be able to send V0 server Inventory Requests via V0 protocols. This requirement is verified when the V0 server receives Inventory Requests from ECS.
V0-0070#A	This requirement is verified through test. The ECS system shall be able to receive Inventory Search Results from V0 server via V0 protocols. This requirement is verified when the ECS receive Inventory Search Results from the V0 server.
V0-0080#A	This requirement is verified through test. The ECS shall be able to send Guide Search Request to the V0 server via V0 protocols. This requirement is verified when the V0 IMS receives Guide Search Request via V0 protocols.

V0-0090#A	<p>This requirement is verified through test. The ECS shall be able to receive the results of the Guide Search Request from the V0 server via V0 protocols. This requirement is verified when the ECS receives Guide Search Results from the V0 server via V0 protocols.</p>
V0-0100#A	<p>This requirement is verified through test. The ECS shall be able to send the V0 server Browse Request via V0 protocols. This requirement is verified when the V0 server receives Browse Requests from ECS via V0 protocols.</p>
V0-0110#A	<p>This requirement is verified through test. The ECS shall be able to receive the results of the Browse Request from the V0 server via V0 protocol. This requirement is verified when the ECS receives Browse Results from the V0 server via V0 protocols.</p>
V0-0120#A	<p>This requirement is verified through test. The ECS shall be able to send Product Requests to the V0 server via V0 protocols. This requirement is verified when the V0 server receives Product Requests from ECS via V0 protocols.</p>
V0-0150#A	<p>This requirement is verified through test. The ECS shall be able to receive Inventory Search Request from the V0 IMS via V0 protocols. This requirement is verified when the ECS receives Inventory Search Request from the V0 IMS via V0 protocols.</p>
V0-0160#A	<p>This requirement is verified through test. The ECS shall be able to send the results of the Inventory Search Request to the V0 IMS via V0 protocol. This requirement is verified when the ECS sends the Inventory Search Results to the V0 IMS without incurring transmission errors.</p>
V0-0170#A	<p>This requirement is verified through test. The ECS shall be able to receive Guide Search Request from the V0 IMS via V0 protocol. This requirement is verified when the ECS receive Guide Search Request from the V0 IMS via V0 protocol.</p>
V0-0180#A	<p>This requirement is verified through test. The ECS shall be able to send the results of the Guide Search Request to the V0 IMS via V0 protocol. This requirement is verified when the ECS sends the Guide Search Results to the V0 IMS without incurring transmission errors.</p>
V0-0190#A	<p>This requirement is verified through test. The ECS shall be able to receive Browse Request from the V0 IMS via V0 protocol. This requirement is verified when the ECS receives a Browse Request from the V0 IMS.</p>
V0-0200#A	<p>This requirement is verified through test. The ECS shall be able to send the results of the Browse Request to the V0 IMS via V0 protocol. This requirement is verified when the ECS sends Browse Results to the V0 IMS without incurring transmission errors.</p>
V0-0230#A	<p>This requirement is verified through test.</p>

	<p>The ECS shall be able to receive Product Requests from V0 IMS via V0 protocols. This requirement is verified when the ECS receives Product Requests V0 IMS.</p>
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Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
	NOTE: This procedure is in two parts. The first part tests ECS capability to establish communication with the V0 server and to send requests to and receive results from the V0 server. The second part tests ECS capability to receive requests from and send results to the V0 server after the V0 server has established communication with ECS.	
	PART I	
10	Tester: Log into the ECS desktop; bring up ECS Release A Search and Order Tool.	
20	Expected Result: The "Welcome" screen must appear after all the necessary information entered.	
30	Tester: Clicks the Search Screen button (from the previous screen) and enter the search criteria.	
40	Expected Result: The System must display a window with various selection.	
50	Tester: Selects Search Type for the Search Type name as Directory.	
	Directory Search Request/Results	
	The Directory search provides information on the location of metadata or dataset catalogues.	
60	Tester: Submits a directory query for V0 DAAC.	
70	Expected Result: The search is executed and the system must respond with a Communications Results Status window.	
80	Tester: Clicks on the "Data" button to view the data at V0 DAAC.	
100	Expected Result: The system displays data at the V0 DAAC.	
	Browse Request/Results	
	The Browse Request allows the user to retrieve/view low resolution images.	

110	Tester: Enters an Inventory Search for browse products at the V0 DAAC.	
120	Expected Result: The system displays the message, "Browse Available", which indicates a browse product exists for the given granule.	
	NOTE: Execute Steps 130 through 160 to view browse data via FTP Browse. Execute Steps 170 through 200 to view browse data via Integrated Browse.	
	FTP Browse Steps	
130	Tester: Uses a FTP Browse method to see a browse product for any granule.	
140	Expected Result: The V0 IMS Server transmits the ftp Browse Results to the ECS Release A Search and Order Tool and copies the browse products onto the DAAC ftp site. The Tester is notified, via email, that the browse product is ready to ftp. The notification provides the ftp account, ip address of the ftp account, and the directory and file name of the browse products.	
150	Tester: Copies the browse products to local system by using the ftp get (single file transfer) or mget (multiple file transfer) command. Displays the browse product(s).	
160	Expected Result: The system allows the user to display the browse image product on his/her workstation.	
	Integrated Browse Steps	
170	Tester: Uses the Integrated Browse method to see a browse product for any granule.	
180	Expected Result: System : The granule(s) are transferred to the machine. Once all images are physically on the IMS machine, the status screen bolds the Image button.	
190	Tester: View images from the Integrated Browse Product Display Screen.	
200	Expected Results: Browse products images are displayed.	
	Inventory Search Request/Results	
	The Inventory Search Request allows the user to locate specific granules within a dataset.	

210	Tester: Selects the Inventory "Search Type" from the Inventory Search screen and enters an Inventory Search on the V0 DAAC or (Access Inventory Information from the directory results).	
220	Expected Result: The Search and Order Tool retrieves granule information associated with all selected data sets. The system performs an automatic inventory search. After the execution of the search, the system responds with a Communications Results Status window which informs the searching and networking activity.	
230	Tester: Clicks the "Data" button to view the data.	
240	Expected Result: The completed search generates Inventory Results. The Inventory Results include dataset level and granule information.	
	Guide Search Request/Results	
	The Guide search provides detailed descriptions about data sets, platforms and sensors.	
250	Tester: Selects the "Guide" Search Type on the screen.	
260	Expected Result: The system displays the Guide Display Screen and allows Guide Search in one of the following three methods: Guide Type, Guide Info, and item.	
270	Tester: Perform a Free Text search by selecting the "Guide" Search Type and enters the word "DMSP".	
280	Expected Result: The system returns a list of all guide documents with the word DMSP in them.	
290	Tester: Clicks on the document name to view that document.	
300	Expected Result: The system brings up a guide document.	
310	Tester: Searches for word(s) in the current document by clicking the "Find" from the screen.	
320	Expected Result: The system finds the first occurrence of the word in the guide document.	
	Product Request/Results	
	The Product Request/Results provides placement of orders for full data sets.	

330	Tester: Clicks on the Order button from the GoTo Screen Functions window and Selects Product Request from the Go To menu.	
340	Expected Result: The system displays the orderable data products and establishes a dialog through the interface with GSFC DAAC to make a product request.	
350	Tester: Clicks on the granule.	
360	Expected Result: The system displays the Package Selection Options screen.	
370	Tester: Selects item, processing option and media option (TEST) from the previous screen.	
380	Expected Result: The screen must return the Product Request Screen.	
390	Tester: Selects the submit Request button from the Screen Functions menu.	
400	Expected Result: The Product Request Search screen appears. The system displays a Communications Status screen and makes the Contact Information available.	
410	Tester: Clicks on the Contact Information to view the information.	
415	Expected Result: Contact Information screen is displayed.	
420	Tester: Go to the GoTo menu and select Exit IMS.	
430	Expected Result: The system must prompt for confirmation.	
440	Tester: Clicks on the OK button	
450	Expected Result: The session with the V0 DAAC ends.	
	PART II	
460	Tester: Repeat Step 10 through 450 from the V0 Client.	
Data Reduction and Analysis Steps:		
Signature:		Date:

12.4.4.2 NOAA Data Centers/ECS DAAC Interoperability

TEST Procedure No.: A120540.020\$G	Date Executed:	Test Conductor:
Title: NOAA Data Centers/ECS DAAC Interoperability		
Objective: This procedure tests the capability of ECS DAAC to obtain information from the NOAA Data Centers.		
Requirements	Acceptance Criteria	
EOSD1710#A	<p>This requirement is verified through demonstration. ECS elements shall exchange with ADCs/ODCs, such as NOAA and other data processing and archiving facilities, information including the following:</p> <ul style="list-style-type: none"> a. Directories b. Product Orders c. Order Status d. Science Data e. Management Data <p>This requirement is verified upon the receipt of Directories, Product Orders, Order Status, Science Data, and Management Data information from the Larry Server.</p>	
IMS-0380#A	<p>This requirement is verified through demonstration. The IMS shall provide the capability to support one-way exchange of directory data with the Larry Servers. This requirement is verified every time the tester select a Data Center from the IMS Advertising Menu.</p>	
IMS-0600#A	<p>This requirement is verified through demonstration. The IMS shall provide the capability to search a directory of information that describes ADC's earth science data sets. This requirement is verified every time the tester select a Data Center from the IMS Advertising Menu and the directory-level information for the selected NOAA Data Center is displayed.</p>	
IMS-0620#A	<p>This requirement is verified through demonstration. The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs. This requirement is verified when the user is able to obtain data products from the NOAA SAA, via the WKBCH CI.</p>	
IMS-0780#A	<p>This requirement is verified through test. The IMS shall accept and validate from the ECS users, IPs, ADCs, and ODCs requests for ECS archival data products. This requirement is verified when the WKBCH CI verifies user's access privilege to data and confirms or rejects the user's request. Note: There are no IPs or ODCs in Release A.</p>	
IMS-0870#A	<p>This requirement is verified through test. The IMS shall provide access in accordance with MOUs to ADC and ODC data that</p> <ul style="list-style-type: none"> b. Is stored by ADC and ODC archives and requested by EOSDIS users c. Is required as ancillary data for production processing. <p>This requirement is verified when ECS is able to translate V0 protocols into ECS protocols.</p>	
NOAA0800#A	<p>This requirement is verified through demonstration.</p>	

	<p>The NOAA Data Centers must have the capability to send and the ECS must have the capability to receive advertising information. This requirement is verified when the user is able to view the NOAA advertising information while using the Release A Search and Order Tool.</p>
SDPS0100#A	<p>This requirement is verified through test.</p> <p>The SDPS shall be responsible for delivery of EOS data and data products to the ADCs, and the other science users via EOSDIS networks and on a variety of physical media.</p> <p>This requirement is verified when the user is able to order a data product from ECS through a NOAA interface.</p>

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
100	Tester: Activate the Advertising Services from the Desktop.	
20	Expected Results: The Advertising Service Menu is displayed.	
30	Tester: Select the National Oceanographic Data Center (NODC) from the Advertising Service Menu.	
40	Expected Results: The directory-level information for the NODC is displayed.	
50	Tester: Select the National Geophysical Data Center (NGDC) from the Advertising Service Menu.	
60	Expected Results: The directory-level information for the NGDC is displayed.	
70	Tester: Select National Climatic Data Center (NCDC) from the Advertising Service Menu.	
80	Expected Results: The directory-level information for the NCDC is displayed.	
90	Tester: FTP a data file from the selected NOAA Data Center.	
100	Expected Results: The data file is received at the ECS DAAC from the selected NOAA Data Center.	
Data Reduction and Analysis Steps:		
Signature:		Date:

12.5 System Performance Scenario

The system performance scenario demonstrates overall ECS performance capabilities as well as the ability of ECS to expand and evolve without changes to design. The focus is on performance measures which are distributed among several elements and cannot be confirmed by single element testing. Other performance measures are the ability to handling triple the average daily rate of science data, handling transactions within prescribed response time envelopes, confirming archiving capacity of DAACs, and archiving triple the average daily rate of science data and distributing data within the required times.

The performance requirements, as specified in ECS documentation, are verified under specified operational conditions. The emphasis is on testing in a simulated or near real operational environment, typifying moderately loaded and busy system conditions. Response time, archiving capacity and expansion capability performance measures are emphasized.

The scenario verifies the ECS capability to generate and gather statistics and measure performance pertaining to DAAC operations and end-to-end message traffic. Measurement and analysis of the message traffic, resource utilization and operational statistics are used to confirm ECS system performance.

12.5.1 Data Ingest, Data Server and Data Distribution Performance Sequence

This sequence verifies the capability of the ECS to ingest, archive, and retrieve the full range of data products appropriate to this DAAC including L0 to L3 science data and ancillary data. The tests will verify system performance at both nominal and maximum data handling loads with the system configured and operating in a normal in "day-in-the-life" operational mode.

Performance goals are listed in the following table:

Table 12-1. Ingest Products

PRODUCT	FILES/DAY	AVG. SIZE	TOTAL VOL.
VIRS 1A (1A01)	16		
TMI 1A (1A11)	16		
PR 1A (1A21)	16		
VIRS 1B (1B01)	16		
VIRS 1B BROWSE (1B01BR)	1		
TMI 1B (1B11)	16		
TMI 1B BROWSE (1B11BR)	1		
PR 1B (1B21)	16		
PR 1B BROWSE (1B21BR)	1		
GV 1B (1B51)	264		
PR 1C (1C21)	16		

PRODUCT	FILES/DAY	AVG. SIZE	TOTAL VOL.
PR 1C BROWSE (1C21BR)	1		
GV 1C (1C51)	264		
GV 1C BROWSE (1C51BR)	11		
TMI 2A (2A12)	16		
TMI 2A BROWSE (2A12BR)	1		
PR 2A (2A21)	16		
PR 2A BROWSE (2A21BR)	1		
PR 2A (2A23)	16		
PR 2A BROWSE (2A23BR)	1		
PR 2A (2A25)	16		
PR 2A BROWSE (2A25BR)	1		
GV 2A (2A52)	11		
GV 2A (2A53)	264		
GV 2A BROWSE (2A53BR)	11		
GV2A (2A54)	264		
GV 2A BROWSE (2A54BR)	11		
GV 2A (2A55)	264		
GV 2A BROWSE (2A55BR)	11		
GV 2A (2A56)	11/30		
GV 2A (2A57)	11/30		
TMI 3A (3A11)	1/30		
TMI 3A BROWSE (3A11BR)	1/30		
PR 3A (3A25)	1/30		
PR 3A BROWSE (3A25BR)	1/30		
PR 3A (3A26)	1/30		
PR 3A BROWSE (3A26BR)	1/30		
GV 3A (3A53)	11/5		
GV3ABROWSE (3A53BR)	11/5		
GV 3A (3A54)	11/30		
GV 3A BROWSE (3A54BR)	11/30		
GV 3A (3A55)	11/30		
GV 3A BROWSE (3A55BR)	11/30		
TRMM 2B (2B31)	16		

PRODUCT	FILES/DAY	AVG. SIZE	TOTAL VOL.
TRMM 2B BROWSE (2B31BR)	1		
TRMM 3B (3B31)	1/30		
TRMM 3B BROWSE (3B31BR)	1/30		
TRMM 3B (3B42)	1/5		
TRMM 3B (3B42BR)	1/5		
TRMM 3B (3B43)	1/5		
TRMM 3B BROWSE (3B43BR)	1/5		
TRMM 3A (3A46)	1/30		
TRMM EPHEM			
NCEP FNL (NCEP01)	4	1MB	4MB
NCEP MRF (NCEP02)	20	.5MB	10MB
NCEP ETA (NCEP06)	8	.69MB	5.5MB

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for a sequence (both real and simulated) are listed:

TSDIS - Simulated

EDOS - Simulated

DAS Data Link Server

GSFC V0 DAAC

SMC

Simulated science users

Operator Positions: The operator positions from the ECS Maintenance and Operations Position Descriptions document (607-CD-001-002) needed to support a sequence are listed:

DAAC Production Planner

DAAC Resource Manager

DAAC Archive Manager

DAAC Ingest-Distribution Technician

Operational Scenario: The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605-CD-001-003), that were used to develop tests in this sequence of tests are listed:

TRMM Ancillary Data Ingest Scenario (Section 3.9.3)

Test Dependencies: The following table identifies the test procedure(s) for this sequence of tests that should be run prior to or concurrently with this test procedure.

* Note: This sequence will be run concurrent with the analogous end-to-end sequence at the other DAACs. Procedure numbers will be entered when available.

Test Procedure No.	Site/Procedure No.	Comments
A120610.010\$G	A120620.010\$G A120620.020\$G	Concurrent
A120610.020\$G	A120620.010\$G A120620.020\$G A120610.030\$G	Concurrent
A120610.030\$G	A120610.020\$G	Concurrent

12.5.1.1 High Data Rate Ingest, Archiving and Retrieval

TEST Procedure No.: A120610.010\$G	Date Executed:	Test Conductor:
Title: High Data Rate Ingest, Archiving and Retrieval		
Objective This procedure tests the capabilities of the ECS GSFC DAAC to meet the daily nominal performance requirements for operations and data processing in a normal operational configuration. The performance requirements for processing speed and capacity are derived from the SDPS Requirements baseline. Table 12-1 summarizes these performance requirements. This procedure simulates a normal day's operations for the GSFC DAAC.		
Requirements	Acceptance Criteria	
DADS1640#A	<p>This requirement is verified through test. The DADS shall support the number of files derivable from Appendix C, with the ability to expand to match growth.</p> <p>The system must be able to ingest and archive the number of files specified as the normal processing load. Number of files for Release A archives are derived from the capability to accommodate the Release A supported missions until the operational turnover of Release B (Through 3 quarter of 98). The number of files at GSFC is sized to support the TSDIS data (along with required ancillary) and V0 migration data. Total accumulated number of files for Release A, derived from the August, 1995 Technical Baseline (Release A procurement baseline) and TSDIS</p>	

	<p>ICD, is 815K @ GSFC.</p> <p>The ability to handle growth is not verified in this procedure. Also weekly and monthly produced TRMM products are not ingested in this procedure.</p>
DADS1805#A	<p>This requirement is verified through test.</p> <p>The DADS shall provide an inventory system capable, at a minimum, of the following:</p> <ol style="list-style-type: none"> a. Accepting the number of new inventory entries, one per granule, for the number of granules per day as specified in Appendix C b. Uniquely identifying each data granule c. Tracking the physical location of each data granule. <p>Number of granules for Release A archives are derived from the capability to accommodate the Release A supported missions until the operational turnover of Release B (Through 3 quarter of 98). The number of granules at GSFC is sized to support the TSDIS data (along with required ancillary) and V0 migration data. Total accumulated number of granules for Release A, derived from the August, 1995 Technical Baseline (Release A procurement baseline) and TSDIS ICD, is 815K @ GSFC. For Release A, the peak number of granules archived per day @ GSFC is 1870.</p> <p>An inventory log must be created for all products ingested and archived during the execution of the procedure. The log must uniquely identify each granule and track the physical location in the archive. The log must be accessible through the normal operational interface. The number of granules to be ingested and archived at this site is specified in Table 12-1.</p>
DADS2780#A	<p>This requirement is verified through test.</p> <p>Each DADS shall be capable of ingesting data at the maximum output bandwidth of the EDOS.</p> <p>The Ingest CI must be able to accept data from the EDOS simulator at the maximum output rate 22Mbps. The Ingest CI must be able to temporarily store TBR GB of data. The size of individual transfers is TBR. The EDOS data ingest must proceed without error.</p>
DADS2900#A	<p>This requirement is verified through analysis.</p> <p>Each DADS shall provide archival capacity for current volume requirements plus one year. Volume requirements are specified in Appendix C.</p> <p>Release A archives are sized with the capacity to accommodate the Release A supported missions until the operational turnover of Release B (Through 3 quarter of 98). The archive at GSFC is sized to support the TSDIS data (along with required ancillary) and V0 migration data. Total accumulated Release A archive capacity, derived from the August, 1995 Technical Baseline (Release A procurement baseline), in TBytes is 13.3 @ GSFC.</p> <p>All components of the system must be able to handle the I/O requirements, archival capacity, and temporary storage capacity specified in the F&PRS, Appendix C. Analysis of the capacity consumption for the day and the sizing of the DPRHW CI archive capacity must indicate the capability to store 365 days worth of science data (including reprocessed data) and science data management overhead.</p>
EDOS-C.5.2#A	<p>This requirement is verified through test.</p> <p>The DPF-GSFC DAAC interface shall provide the capability to support</p>

	<p>the transfer of PDSs to the GSFC DAAC at a rate of up to 22 Mbps. The Ingest CI must be able to accept data from the EDOS simulator at the maximum output rate 22Mbps.</p>
EOSD0020#A	<p>This requirement is verified through test. ECS shall use and support the EDOS/Ecom interface to obtain the data capture, data archival, and data distribution services needed to achieve full end-to-end ECS functionality. The ECS must interact with a simulated EDOS interface. The interaction must follow the protocols for a polling ingest. All communications messages must be processed without error and recorded on the system log. No data archival or distribution of this data is in Release A.</p>
EOSD1010#A	<p>This requirement is verified through test. ECS shall support daily data volume, processing load, storage volume, instrument support, and data traffic as derivable from and specified in Appendix C and D.</p> <p>Refer to the Clarification text of the following requirements for Release A capacity requirements: Processing - PGS1300#A and PGS1310#A; Archiving Capacity - DADS1640#A, DADS1805#A, DADS2778#A, and DADS2900#A; and Archive Throughput - DADS2778#A and DADS3100#A.</p> <p>The system must be able to ingest and archive the number of files specified as the normal processing load as well as servicing the user requests. Concurrent handling of all traffic and support requirement is simulated and measured for response times and capacity consumption. Specific performance targets for this site are detailed in Table 12-1.</p>
ESN-1206#A	<p>This requirement is verified through test.</p> <p>The ESN capacity and performance shall be consistent with the specified capacity and performance requirements of the ECS functions.</p> <p>The ESN must be able to support the data rates and capacities required for the ingest of all data products and user support. Specific performance targets for this site are detailed in Table 12-1.</p>

Test Inputs:

Data Set Name	Data Set ID	File Name	Description	Version
VIRS1A_001			One days worth of VIRS 1A data, 16 files +16 SFDU headers	1
TMI1A_001			One days worth of TMI 1A data, 16 files +16 SFDU headers	1
PR1A_001			One days worth of PR 1A data, 16 files +16 SFDU headers	1
VIRS1B_001			One days worth of VIRS 1B Radiance	1

			data, 16 files HDF/EOS format	
VIRS1BBROWSE_001			One days worth of VIRS 1B browse data, 1 file HDF/EOS format	1
TMI1B_001			One days worth of TMI Brightness/Temperatures 1B data, 16 files HDF/EOS format	1
TMI1BBROWSE_001			One days worth of TMI 1B browse data, 1 file HDF/EOS format	1
PR1B_001			One days worth of PR 1B Power data, 16 files HDF/EOS format	1
PR1BBROWSE_001			One days worth of PR 1B browse data, 1 file HDF/EOS format	1
GV1B_001			One days worth of GV 1B Calibration data, 264 files HDF/EOS format	1
PR1C_001			One days worth of PR 1C Reflectivities data, 16 files HDF/EOS format	1
PR1CBROWSE_001			One days worth of PR 1C browse data, 1 file HDF/EOS format	1
GV1C_001			One days worth of GV 1C QC Radar Reflectivity data, 264 files HDF/EOS format	1
GV1CBROWSE_001			One days worth of GV 1C browse data, 11 files HDF/EOS format	1
TMI2A_001			One days worth of TMI 2A Profiling data, 16 files HDF/EOS format	1
TMI2ABROWSE_001			One days worth of TMI 2A browse data, 1 file HDF/EOS format	1
PR2A_001			One days worth of PR 2A Surface Cross Section data, 16 files HDF/EOS format	1

PR2ABROWSE_001			One days worth of PR 2A Surface Cross Section browse data, 1 file HDF/EOS format	1
PR2A_002			One days worth of PR 2A Qualitative data, 16 files HDF/EOS format	1
PR2ABROWSE_002			One days worth of PR 2A Qualitative browse data, 1 file HDF/EOS format	1
PR2A_003			One days worth of PR 2A Profile data, 16 files HDF/EOS format	1
PR2ABROWSE_003			One days worth of PR 2A Profile browse data, 1 file HDF/EOS format	1
GV2A_001			One days worth of GV 2A Existence data, 11 files +11 SFDU headers	1
GV2A_002			One days worth of GV 2A Radar Site Rain Map data, 264 files HDF/EOS format	1
GV2ABROWSE_002			One days worth of GV 2A Radar Site Rain Map browse data, 11 files HDF/EOS format	1
GV2A_003			One days worth of GV 2A Radar Site Conv./Stratiform Map data, 264 files HDF/EOS format	1
GV2ABROWSE_003			One days worth of GV 2A Radar Site Conv./Stratiform Map browse data, 11 files HDF/EOS format	1
GV2A_004			One days worth of GV 2A Radar Site 3-D Reflectivities data, 264 files HDF/EOS format	1
GV2ABROWSE_004			One days worth of GV 2A Radar Site 3-D Reflectivities browse data, 11 files HDF/EOS format	1
TRMMEPHEM_001			One days worth of TRMM Platform	1

			Ephemeris, 1 file in binary EPHEM format	
NCEPFNL_001			One days worth of NCEP FNL data, 4 files, GRID format	1
NCEPMRF_001			One days worth of NCEP MRF data, 20 files, GRIB format	1
NCEPETA_001			One days worth of NCEP ETA data, 8 files	1

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Query data server for existence of any of the files that are to be ingested during this procedure. Files should not exist.	
11	Computer Operator: Monitor resource utilization for all DMGHW, Data Server HWCIs, INCLHW, and all network devices. Configure MSS tools to plot CPU, cache, and disk utilization and network throughput capacity utilization.	
15	Expected Results: System is configured for monitoring.	
20	Production Planner: Invoke the resource planning system.	
30	Expected Results: System - Planning Menu is displayed.	
40	Production Planner: Select "Create New Plan".	
30	Expected Results: Plan entry screen is displayed.	
50	Production Planner: For each ingest event for this procedure enter: ground event, description, start time, duration.	
60	Production Planner: Send the completed requests to the planning subsystem.	
70	Expected Results: System - Acknowledges receipt of the requests. Processes requests and automatically allocates resources, resource plan is sent to Production Planner.	
80	Expected Results: System - Processes requests and automatically allocates resources, resource plan is sent to Production Planner.	
90	Production Planner: Review plan and EMail a copy to the Archive Manager.	
95	Expected Results: The Archive Manager receives the EMail.	
100	Archive Manager: Allocate resources according to plan, send notification to the Resource Manager.	
105	Expected Results: Resource Manager receives plan.	
110	Resource Manager: Review configuration and resolve discrepancies.	
115	Expected Results: System is configured for planned activity.	
120	Ingest/Distribution Tech: Monitor ingest activity.	
	Start Pull Background Load	
130	Tester: Start concurrent execution of test procedure A120620.010\$G.	

131	Tester: Start concurrent execution of test procedure A120620.020\$G.	
	Configure Polling for V0 and DAS Ancillary Data	
135	Ingest/Distribution Tech: Setup Ingest to “Poll with Delivery Record” the GSFC V0 server every 15 minutes.	
136	Expected Results: Ingest will poll the V0 server every 15 minutes. If a DR has been staged on the V0, TOMS Ozone ancillary data is transferred and steps 2000 through 2190 of this procedure are executed for the data staged.	
137	Ingest/Distribution Tech: Setup Ingest to “Poll with Delivery Record” the GSFC DAS data link server every 20 minutes.	
138	Expected Results: Ingest will poll the DAS data link server every 20 minutes. If a DR has been staged on the server, NCEP ancillary data is transferred and steps 2000 through 2190 of this procedure are executed for the data staged.	
	Start TSDIS Data Transfers	
	Note: Awaiting resolution of question of how many transfers by DAN will actually occur and how the files will be packaged by DAN.	
140	Tester: Set up TSDIS simulator for transfer of data set VIRS1A_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
150	Tester: Set up TSDIS simulator for transfer of data set VIRS1A_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
160	Tester: Set up TSDIS simulator for transfer of data set TMI1A_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
170	Tester: Set up TSDIS simulator for transfer of data set PR1A_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Stage NCEP Ancillary Data	
175	Tester: Stage DR for NCEP FNL data file transfer on DAS server.	
176	Expected Results: Test steps 2000 through 2190 will be executed when Ingest polling detects the DR.	
	End of NCEP Data Staging	
180	Tester: Set up TSDIS simulator for transfer of data sets VIRS1B_001 and VIRS1BBROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
181	Expected Results: System Data Server - Based on LaRC subscription, stages data and metadata, logs status to system log, sends a DAN to LaRC.	
182	LaRC DAAC: Sends a DAA to ECS, Transfers data file, sends a DDN to ECS.	

183	Expected Results: System Data Server - Receives and logs DAA; Receives and logs DDN; Deletes data files from staging	
184	Ingest/Distribution Tech: Monitor transfer processing; verify successful transfer.	
185	Tester: Perform a compare of the data file before it was sent from the remote and after it was received LaRC.	
186	Expected Results: The files compared should be identical.	
190	Tester: Set up TSDIS simulator for transfer data sets TMI1B_001 and TMI1BBROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
200	Tester: Set up TSDIS simulator for transfer of data sets PR1B_001 and PR1BBROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
210	Tester: Set up TSDIS simulator for transfer of data set GV1B_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
220	Tester: Set up TSDIS simulator for transfer of data sets PR1C_001 and PR1CBROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Stage NCEP Ancillary Data	
225	Tester: Stage DR for NCEP MRF data file transfer on DAS server.	
226	Expected Results: Test steps 2000 through 2190 will be executed when Ingest polling detects the DR.	
	End of NCEP Data Staging	
230	Tester: Set up TSDIS simulator for transfer of data sets GV1C_001 and GV1CBROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Execute EDOS Transfer	
240	Tester: Set up EDOS simulator for interface test at nominal data rates.	
250	Ingest/Distribution Tech: Configure system to poll EDOS for data availability.	
260	ETS: Start interface test, place DAN on simulator for ECS polling	
270	Expected Results: System Ingest - Transfers EDOS DAN to ECS; Logs DAN receipt; (TBD - further info on Release A EDOS interface capabilities required.)	
	End EDOS Transfer - Continue TSDIS Transfers	
300	Tester: Set up TSDIS simulator for transfer data sets TMI2A_001 and TMI2ABROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	

301	Expected Results: System Data Server - Based on LaRC subscription, stages data and metadata, logs status to system log, sends a DAN to LaRC.	
302	LaRC DAAC: Sends a DAA to ECS, Transfers data file, sends a DDN to ECS.	
303	Expected Results: System Data Server - Receives and logs DAA; Receives and logs DDN; Deletes data files from staging	
304	Ingest/Distribution Tech: Monitor transfer processing; verify successful transfer.	
305	Tester: Perform a compare of the data file before it was sent from the remote and after it was received LaRC.	
306	Expected Results: The files compared should be identical.	
310	Tester: Set up TSDIS simulator for transfer of data sets PR2A_001 and PR2AROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
320	Tester: Set up TSDIS simulator for transfer of data sets PR2A_002 and PR2AROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Stage NCEP Ancillary Data	
325	Tester: Stage DR for NCEP ETA data file transfer on DAS server.	
326	Expected Results: Test steps 2000 through 2190 will be executed when Ingest polling detects the DR.	
	End of NCEP Data Staging	
330	Tester: Set up TSDIS simulator for transfer of data sets PR2A_003 and PR2AROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
340	Tester: Set up TSDIS simulator for transfer of data set GV2A_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
350	Tester: Set up TSDIS simulator for transfer of data sets GV2A_002 and GV2ABROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Stage NCEP Ancillary Data	
355	Tester: Stage DR for TOMS OZONE data file transfer on V0 server.	
356	Expected Results: Test steps 2000 through 2190 will be executed when Ingest polling detects the DR.	
	End of NCEP Data Staging	
360	Tester: Set up TSDIS simulator for transfer of data sets GV2A_003 and GV2ABROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	

370	Tester: Set up TSDIS simulator for transfer of data sets GV2A_004 and GV2ABROWSE_004 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	End of TSDIS Transfers	
	TSDIS Data Ingest Steps	
	These steps are executed for each TRMM data ingest from TSDIS.	
1000	Tester: Set up TSDIS simulator for transfer of specified data files equivalent to the required amount of data.	
1010	TSDIS Simulator: Send a DAN to ECS Ingest.	
1020	Expected Results: System: DAN receipt is logged and process is assigned an ID for status logging.	
1030	Expected Results: System Ingest: generates an ingest request and stores the request on a prioritized list. A DAN summary (data source, number of files, location of data) is placed in the event log.	
1040	Ingest-Distribution Technician: Monitor the status display; note DAN receipt.	
1050	Expected Results: System Ingest: Sends a DAA to TSDIS and logs a copy of the DAA.	
1060	Tester: Verify receipt of DAA by TSDIS simulator.	
1070	Expected Results: System Ingest: Schedules and performs data transfer; allocates required devices, logs status to event log.	
1080	Expected Results: System Ingest: Extracts and validates metadata; reports metadata validation status to event log.	
1090	Ingest-Distribution Technician: Check event log; metadata must be reported as valid.	
1100	Expected Results: System Ingest: Prepares and generates a data server insert request.	
1110	Expected Results: System Ingest: Sends DDN to TSDIS simulator.	
1120	TSDIS Simulator: Receives DDN, sends a DDA.	
1130	Expected Results: System Ingest: DDA is received and logged; Ingest status recorded in Ingest History Log. Status of this ingest ID is removed from Ingest Status Display.	
1140	Ingest-Distribution Technician: Review Ingest History Log and Status Display.	

V0/DAS Ancillary Data Ingest Steps		
	These steps are executed each time Ingest detects a Delivery Record while polling the V0 or DAS data link servers.	
2000	Ingest/Distribution Tech: Invokes the Ingest Status Monitor tool (GUI display) from the main Ingest GUI screen.	
2010	Expected Results: The System identifies ongoing ingest requests (stored in Sybase tables) and displays them	
2020	Remote Server: Ancillary data provider application software automatically sets up to write ancillary data and Delivery Record to specified location.	
2030	Expected Results: The System automatically checks a predetermined network location for the presence of a Delivery Record file. Once a Delivery Record file is located, the System automatically coordinates the ancillary data transfer with the data provider using ftp services. After the ancillary data and Delivery Record file is received, the INGST CSCI automatically checkpoints request information extracted from the Delivery Record into a Sybase data base.	
2040	Ingest/Distribution Tech: Periodically reviews Ingest Status Monitor display. The Technician looks for ingest requests that have been queued for an unexpected period (in the TRMM Mission era, anything on the queue for more than a few minutes..	
2050	Expected Results: The System automatically extracts metadata from transferred ancillary data and checks the metadata (e.g., range checks). Format conversion (e.g., GRIB to HDF-EOS for NMC-ETA data) is automatically performed for all ancillary products previously identified as requiring conversion. It then inserts the data and metadata into the appropriate Data Server. Request state (active, file transferred, data insertion complete, etc.) is updated in the checkpointed request information	
2060	Ingest/Distribution Tech: Periodically reviews the MSS Event Log to visually determine anomalous conditions (e.g., a pattern of metadata check errors).	
2070	Expected Results: The System automatically logs events by means of the MSS Event Logging capability. "Events" include detection of out-of-range metadata values, incompletely-transferred data files, etc. Based on DAAC policy, selected events may be identified as "alerts", which trigger a visual change of state at the MSS Event Log display.	
2080	Ingest/Distribution Tech: Observes the removal of the completed ingest request from the Status Monitor display.	
2090	Expected Results: Upon completion (successful or unsuccessful) of data insertion into the Data Server, status is automatically returned to the data provider by means of electronic mail. Summary information is retained in the Sybase data base (as Ingest History Log data).	

2100	Expected Results: Upon completion (successful or unsuccessful) of data insertion into the Data Server, the SDSRV CI automatically determines the existence of subscriptions on the receipt of the TRMM ancillary data. A subscription notice is sent to TSDIS.	
2110	Ingest/Distribution Tech: Views summary information about completed ingest requests using the GUI Ingest History Log tool. The Data Ingest Technician generates a summary report on completed ingest requests. The report (in two parts) gives summary statistics (e.g., number of data granules ingested, data volume ingested) and error statistics (e.g., number of errors of a given type encountered) for a specified time range.	
2120	Expected Results: The System provides access to Sybase data base tables containing summary information on completed ingest requests, including completion status, data volume ingested, etc.	
	TSDIS Subscription Activated	
2130	Expected Results: System Data Server - Based on TSDIS subscription, stages data and metadata, logs status to system log, sends a DAN to TSDIS.	
2140	TSDIS Simulator: Sends a DAA to ECS, Transfers data file, sends a DDN to ECS.	
2150	Expected Results: System Data Server - Receives and logs DAA; Receives and logs DDN; Deletes data files from staging	
2160	Ingest/Distribution Tech: Monitor transfer processing; verify successful transfer.	
2180	Tester: Perform a compare of the ancillary data file before it was sent from the remote and after it was received by TSDIS simulator.	
2190	Expected Results: The files compared should be identical.	
	Procedure Wrapup	
3000	Ingest/Distribution Tech: Review Ingest History Log and status display	
3010	Tester: Query data server for existence of the files that were ingested during this procedure. Files should exist.	
3015	Tester: Print MSS logs and ingest history logs.	

3020	Tester: Secure the following materials : <ol style="list-style-type: none"> 1. MSS Log Printout 2. Ingest History Log Printout 3. Results of data server query for existing data files prior to procedure 4. Results of data server query for existing data files after procedure 5. Resource utilization reports 	
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Data Reduction and Analysis Steps:

A. The following materials are required for analysis:

1. System Event Log Printout
2. Ingest History Log Printout
3. Results of data server query for existing data files prior to procedure
4. Results of data server query for existing data files after procedure
5. Resource utilization plots from MSS tools

B. DADS1640#A - Examine the Ingest History Logs to confirm that all data was ingested and archived. Confirm through queries to the archive that the data and metadata was stored. Extract and examine data to ensure that it is not corrupted.

C. DADS1805#A - Compare the Ingest History Logs, the data server query results, and the test data set descriptions for this procedure. Confirm that all data scheduled for ingest was logged and stored on the data server. Confirm that all metadata extracted and generated is accurate and complete.

D. DADS2780#A, EOSD0020#A - Confirm the ingest data rate during the EDOS interface test by examining the HP Openview plots during the period of EDOS activity identified in the Ingest History Log. Confirm that the Ingest CIs were able to temporarily store the EDOS ingest files. Review the system event log for this period to confirm that all communication with EDOS proceeded according to the protocol outlined in the procedure.

E. DADS2900#A - From the Tivoli (or MSS tools) plots of the DRPHW capacity utilization, determine the capability of the DRPHW to handle 365 days worth of data based on the capacity consumption recorded during this procedure. Use data gathered to verify ECS performance models.

Signature:	Date :
Witness Signature:	Date :

12.5.1.2 Ingest and Archiving of Triple the Average Data Rates

TEST Procedure No.: A120610.020\$G	Date Executed:	Test Conductor:
Title: Ingest and Archiving of Triple the Average Data Rates		
Objective :	This procedure tests the capabilities of the ECS GSFC DAAC to ingest data at triple the average data rate while still meeting the daily performance requirements for operations and data processing in a normal operational configuration. The performance requirements for processing speed and capacity are derived from the SDPS Requirements Specification for the ECS. Table 12-1 summarizes these performance requirements. This procedure simulates a day's operations for the GSFC DAAC during which processing recovery requires three times the nominal data volume be ingested and an additional load of weekly and monthly TRMM data production is supported.	
Requirements	Acceptance Criteria	
DADS1472#A	This requirement is verified through test. Each DADS shall contain the appropriate capacity to respond to contingencies, scheduling problems, and peak loads. The Ingest client CIs must be able to process three times the nominal load of input science data. All other normal non-ingest functions must be able to proceed at nominal rates as this data is processed. The execution of this procedure must occur with all other performance requirements linked to this procedure being meet. Analysis of the system logs and verification of the successful archive of the data must show the capability to process the triple load and weekly and monthly TSDIS processing support.	
DADS1640#A	This requirement is verified through test. The DADS shall support the number of files derivable from Appendix C, with the ability to expand to match growth. Number of files for Release A archives are derived from the capability to accommodate the Release A supported missions until the operational turnover of Release B (Through 3 quarter of 98). The number of files at GSFC is sized to support the TSDIS data (along with required ancillary) and V0 migration data. Total accumulated number of files for Release A, derived from the August, 1995 Technical Baseline (Release A procurement baseline) and TSDIS ICD, is 815K @ GSFC. The number of files are specified in Table 12-1. The capability of the ECS to expand match growth is not verified in this procedure.	
DADS2778#A	This requirement is verified through test. Each DADS shall be capable of receiving and archiving three days' worth of data (see Appendix C) in any given day. Release A archives throughput are calculated based on the capacity to accommodate the Release A supported missions until the operational turnover of Release B (Through 3 quarter of 98). The archive at GSFC is sized to support the TSDIS data (along with required ancillary) and V0 migration data. Total throughput capacity for 3 days worth of data in 1 day, derived from the August, 1995 Technical Baseline (Release A procurement baseline), in GB/day is 82 @ GSFC. The SDPS must be able to archive three times the daily load of input	

	science data specified in Table 12-1. The execution of this procedure must occur with no errors and with all other performance requirements linked to this procedure being meet. Analysis of the system logs and verification of the successful archive of the data must show the capability to process the triple load.
DADS 2780#A	This requirement is verified through demonstration. Each DADS shall be capable of ingesting data at the maximum output bandwidth of the EDOS. The Ingest CI must be able to accept data at the maximum output rate of the EDOS of 22Mbps. The Ingest CI must be able to temporarily store 67 GB of data representing a normal maximum EDOS data transfer. The EDOS data ingest must proceed without error.
EOSD0020#A	This requirement is verified through test. ECS shall use and support the EDOS/Ecom interface to obtain the data capture, data archival, and data distribution services needed to achieve full end-to-end ECS functionality. The ECS must interact with a simulated EDOS interface. The interaction must follow the protocols for a polling ingest. All communications messages must be processed without error and recorded on the system log. No data archival or distribution of this data is in Release A.
EOSD1010#A	This requirement is verified through test. ECS shall support daily data volume, processing load, storage volume, instrument support, and data traffic as derivable from and specified in Appendix C and D. Refer to the Clarification text of the following requirements for Release A capacity requirements: Processing - PGS1300#A and PGS1310#A; Archiving Capacity - DADS1640#A, DADS1805#A, DADS2778#A, and DADS2900#A; and Archive Throughput - DADS2778#A and DADS3100#A. The system must be able to ingest and archive the number of files specified as the normal processing load as well as servicing the user requests. Concurrent handling of all traffic and support requirement is simulated and measured for response times and capacity consumption. Specific performance targets for this site are detailed in Table 12-1.

**Test
Inputs:**

Data Set Name	Data Set ID	File Name	Description	Version
VIRS1A_002			One days worth of VIRS 1A data, 16 files +16 SFDU headers	1
TMI1A_002			One days worth of TMI 1A data, 16 files +16 SFDU headers	1
PR1A_002			One days worth of PR 1A data, 16 files +16 SFDU headers	1
VIRS1B_002			One days worth of	1

			VIRS 1B Radiance data, 16 files HDF/EOS format	
VIRS1BBROWSE_002			One days worth of VIRS 1B browse data, 1 file HDF/EOS format	1
TMI1B_002			One days worth of TMI Brightness/Temperatures 1B data, 16 files HDF/EOS format	1
TMI1BBROWSE_002			One days worth of TMI 1B browse data, 1 file HDF/EOS format	1
PR1B_002			One days worth of PR 1B Power data, 16 files HDF/EOS format	1
PR1BBROWSE_002			One days worth of PR 1B browse data, 1 file HDF/EOS format	1
GV1B_002			One days worth of GV 1B Calibration data, 264 files HDF/EOS format	1
PR1C_002			One days worth of PR 1C Reflectivities data, 16 files HDF/EOS format	1
PR1CBROWSE_002			One days worth of PR 1C browse data, 1 file HDF/EOS format	1
GV1C_002			One days worth of GV 1C QC Radar Reflectivity data, 264 files HDF/EOS format	1
GV1CBROWSE_002			One days worth of GV 1C browse data, 11 files HDF/EOS format	1
TMI2A_002			One days worth of TMI 2A Profiling data, 16 files HDF/EOS format	1
TMI2ABROWSE_002			One days worth of TMI 2A browse data, 1 file HDF/EOS format	1
PR2A_004			One days worth of PR 2A Surface Cross Section data, 16 files	1

			HDF/EOS format	
PR2ABROWSE_004			One days worth of PR 2A Surface Cross Section browse data, 1 file HDF/EOS format	1
PR2A_005			One days worth of PR 2A Qualitative data, 16 files HDF/EOS format	1
PR2ABROWSE_005			One days worth of PR 2A Qualitative browse data, 1 file HDF/EOS format	1
PR2A_006			One days worth of PR 2A Profile data, 16 files HDF/EOS format	1
PR2ABROWSE_006			One days worth of PR 2A Profile browse data, 1 file HDF/EOS format	1
GV2A_005			One days worth of GV 2A Existance data, 11 files +11 SFDU headers	1
GV2A_006			One days worth of GV 2A Radar Site Rain Map data, 264 files HDF/EOS format	1
GV2ABROWSE_006			One days worth of GV 2A Radar Site Rain Map browse data, 11 files HDF/EOS format	1
GV2A_007			One days worth of GV 2A Radar Site Conv./Stratiform Map data, 264 files HDF/EOS format	1
GV2ABROWSE_007			One days worth of GV 2A Radar Site Conv./Stratiform Map browse data, 11 files HDF/EOS format	1
GV2A_008			One days worth of GV 2A Radar Site 3-D Reflectivities data, 264 files HDF/EOS format	1
GV2ABROWSE_008			One days worth of GV 2A Radar Site 3-D Reflectivities browse data, 11 files HDF/EOS format	1
TMI3A_001			One months worth of	1

			TMI3A Emission data, 1 file HDF/EOS format	
TMI3ABROWSE_001			One months worth of TMI3A Emission browse data, 1 file HDF/EOS format	1
PR3A_001			One months worth of PR3A Rainfall data, 1 file HDF/EOS format	1
PR3ABROWSE_001			One months worth of PR3A Rainfall browse data, 1 file HDF/EOS format	1
PR3A_002			One months worth of PR3A Surface Rain data, 1 file HDF/EOS format	1
PR3ABROWSE_002			One months worth of PR3A Surface Rain browse data, 1 file HDF/EOS format	1
GV3A_001			Five days worth of GV3A 5-day Site Rain Map data, 11 files HDF/EOS format	1
GV3ABROWSE_001			Five days worth of GV3A 5-day Site Rain Map browse data, 11 files HDF/EOS format	1
GV3A_002			One months worth of GV3A 30-day Site Rain Map data, 11 files HDF/EOS format	1
GV3ABROWSE_002			One months worth of GV3A 30-day Site Rain Map browse data, 11 files HDF/EOS format	1
GV3A_003			One months worth of GV3A Monthly 3D-Structure data, 11 files HDF/EOS format	1
GV3ABROWSE_003			One months worth of GV3A Monthly 3D-Structure browse data, 11 files HDF/EOS format	1
TRMM2B_001			One days worth of TRMM 2B Combined data, 16 files	1

			HDF/EOS format	
TRMM2BBROWS E_001			One days worth of TRMM 2B Combined data, 1 file HDF/EOS format	1
TRMM3B_001			One months worth of TRMM 3B Rainfall Combined data, 1 file HDF/EOS format	1
TRMM3BBROWS E_001			One months worth of TRMM 3B Rainfall Combined Browse data, 1 file HDF/EOS format	1
TRMM3B_002			Five days worth of TRMM 3B GPI Calibration data, 1 file HDF/EOS format	1
TRMM3BBROWS E_002			Five days worth of TRMM 3B GPI Calibration Browse data, 1 file HDF/EOS format	1
TRMM3B_003			Five days worth of TRMM 3B Data Sources data, 1 file HDF/EOS format	1
TRMM3BBROWS E_003			Five days worth of TRMM 3B Data Sources Browse data, 1 file HDF/EOS format	1
TRMM3A_001			One Months worth of TRMM 3A SSM/I Monthly Gridded Rainfall data, 1 file HDF/EOS format	1
TRMMEPHEM_00 2			One days worth of TRMM Platform Ephemeris, 1 file in binary EPHEM format	1
NCEPFNL_002			One days worth of NCEP FNL data, 4 files, GRID format	1
NCEPMRF_002			One days worth of NCEP MRF data, 20 files, GRIB format	1
NCEPETA_002			One days worth of NCEP ETA data, 8 files	1

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Tester: Query data server for existence of any of the files that are to be ingested during this procedure. Files should not exist.	
11	Computer Operator: Configure HP Openview to monitor resource utilization for all DMGHW, Data Server HWCIs, INCLHW, and all network devices. Configure to plot CPU, cache, and disk utilization and network throughput capacity utilization.	
20	Production Planner: Invoke the resource planning system	
30	Expected Results: System - Planning Menu is displayed	
40	Production Planner: Select "Create New Plan"	
50	Production Planner: For each ingest ground event for this procedure enter: ground event, description, start time, duration	
60	Production Planner: Send the completed requests to the planning subsystem	
70	Expected Results: System - Acknowledges receipt of the requests	
80	Expected Results: System - Processes requests and automatically allocates resources, resource plan is sent to Production Planner	
90	Production Planner: Review plan and EMail a copy to the Archive Manager	
100	Archive Manager: Allocate resources according to plan, send notification to the Resource Manager	
110	Resource Manager: Review configuration and resolve discrepancies	
120	Ingest/Distribution Tech: Monitor ingest activity	
	Start Pull Background Load	
130	Tester: Start concurrent execution of test procedure A120620.010\$G.	
131	Tester: Start concurrent execution of test procedure A120620.020\$G.	
	Configure Polling for V0 and DAS Ancillary Data	
135	Ingest/Distribution Tech: Setup Ingest to "Poll with Delivery Record" the GSFC V0 server every 15 minutes.	

136	Expected Results: Ingest will poll the V0 server every 15 minutes. If a DR has been staged on the V0, TOMS Ozone ancillary data is transferred and steps 2000 through 2190 of this procedure are executed for the data staged.	
137	Ingest/Distribution Tech: Setup Ingest to "Poll with Delivery Record" the GSFC DAS data link server every 20 minutes.	
138	Expected Results: Ingest will poll the DAS data link server every 20 minutes. If a DR has been staged on the server, NCEP ancillary data is transferred and steps 2000 through 2190 of this procedure are executed for the data staged.	
	Start TSDIS Data Transfers	
	Note: Awaiting resolution of question of how many transfers by DAN will actually occur and how the files will be packaged by DAN.	
140	Tester: Set up TSDIS simulator for transfer of data set VIRS1A_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Start TSDIS Reprocessing Support	
150	Tester: Begin concurrent execution of test procedure A120610.030\$G.	
160	Tester: Set up TSDIS simulator for transfer of data set TMI1A_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
170	Tester: Set up TSDIS simulator for transfer of data set PR1A_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Stage NCEP Ancillary Data	
175	Tester: Stage DR for NCEP FNL data file transfer on DAS server.	
176	Expected Results: Test steps 2000 through 2190 will be executed when Ingest polling detects the DR.	
	End of NCEP Data Staging	
180	Tester: Set up TSDIS simulator for transfer of data sets VIRS1B_0021 and VIRS1BBROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
190	Tester: Set up TSDIS simulator for transfer data sets TMI1B_001 and TMI1BBROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
200	Tester: Set up TSDIS simulator for transfer of data sets PR1B_002 and PR1BBROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
210	Tester: Set up TSDIS simulator for transfer of data set GV1B_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	

220	Tester: Set up TSDIS simulator for transfer of data sets PR1C_002 and PR1CBROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Stage NCEP Ancillary Data	
225	Tester: Stage DR for NCEP MRF data file transfer on DAS server.	
226	Expected Results: Test steps 2000 through 2190 will be executed when Ingest polling detects the DR.	
	End of NCEP Data Staging	
230	Tester: Set up TSDIS simulator for transfer of data sets GV1C_002 and GV1CBROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Execute EDOS Transfer	
240	Tester: Set up EDOS simulator for interface test at nominal data rates.	
250	Ingest/Distribution Tech: Configure system to poll EDOS for data availability.	
260	ETS: Start interface test, place DAN on simulator for ECS polling	
270	Expected Results: System Ingest - Transfers EDOS DAN to ECS; Logs DAN receipt; (TBD - further info on Release A EDOS interface capabilities required.)	
	End EDOS Transfer - Continue TSDIS Transfers	
300	Tester: Set up TSDIS simulator for transfer data sets TMI2A_002 and TMI2ABROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
310	Tester: Set up TSDIS simulator for transfer of data sets PR2A_004 and PR2AROWSE_004 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
320	Tester: Set up TSDIS simulator for transfer of data sets PR2A_005 and PR2AROWSE_005 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Stage NCEP Ancillary Data	
325	Tester: Stage DR for NCEP ETA data file transfer on DAS server.	
326	Expected Results: Test steps 2000 through 2190 will be executed when Ingest polling detects the DR.	
	End of NCEP Data Staging	
330	Tester: Set up TSDIS simulator for transfer of data sets PR2A_006 and PR2AROWSE_006 and execute TSDIS data transfer procedures, steps 1000 through 1140.	

340	Tester: Set up TSDIS simulator for transfer of data set GV2A_005 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
350	Tester: Set up TSDIS simulator for transfer of data sets GV2A_006 and GV2ABROWSE_006 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	Stage NCEP Ancillary Data	
355	Tester: Stage DR for TOMS OZONE data file transfer on V0 server.	
356	Expected Results: Test steps 2000 through 2190 will be executed when Ingest polling detects the DR.	
	End of NCEP Data Staging	
360	Tester: Set up TSDIS simulator for transfer of data sets GV2A_007 and GV2ABROWSE_007 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
370	Tester: Set up TSDIS simulator for transfer of data sets GV2A_008 and GV2ABROWSE_008 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
380	Tester: Set up TSDIS simulator for transfer of data sets TMI3A_001 and TMI3ABROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
390	Tester: Set up TSDIS simulator for transfer of data sets PR3A_001 and PR3ABROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
400	Tester: Set up TSDIS simulator for transfer of data sets PR3A_002 and PR3ABROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
410	Tester: Set up TSDIS simulator for transfer of data sets GV3A_001 and GV3ABROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
420	Tester: Set up TSDIS simulator for transfer of data sets GV3A_002 and GV3ABROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
430	Tester: Set up TSDIS simulator for transfer of data sets GV3A_003 and GV3ABROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
440	Tester: Set up TSDIS simulator for transfer of data sets TRMM2B_001 and TRMM2BBROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
450	Tester: Set up TSDIS simulator for transfer of data sets TRMM3B_001 and TRMM3BBROWSE_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
460	Tester: Set up TSDIS simulator for transfer of data sets TRMM3B_002 and TRMM3BBROWSE_002 and execute TSDIS data transfer procedures, steps 1000 through 1140.	

470	Tester: Set up TSDIS simulator for transfer of data sets TRMM3B_003 and TRMM3BBROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
480	Tester: Set up TSDIS simulator for transfer of data set TRMM3A_001 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	End of TSDIS Transfers	
	TSDIS Data Ingest Steps	
	These steps are executed for each TRMM data ingest from TSDIS.	
1000	Tester: Set up TSDIS simulator for transfer of specified data files equivalent to the required amount of data.	
1010	TSDIS Simulator: Send a DAN to ECS Ingest.	
1020	Expected Results: System: DAN receipt is logged and process is assigned an ID for status logging.	
1030	Expected Results: System Ingest: generates an ingest request and stores the request on a prioritized list. A DAN summary (data source, number of files, location of data) is placed in the event log.	
1040	Ingest-Distribution Technician: Monitor the status display; note DAN receipt.	
1050	Expected Results: System Ingest: Sends a DAA to TSDIS and logs a copy of the DAA.	
1060	Tester: Verify receipt of DAA by TSDIS simulator.	
1070	Expected Results: System Ingest: Schedules and performs data transfer; allocates required devices, logs status to event log.	
1080	Expected Results: System Ingest: Extracts and validates metadata; reports metadata validation status to event log.	
1090	Ingest-Distribution Technician: Check event log; metadata must be reported as valid.	
1100	Expected Results: System Ingest: Prepares and generates a data server insert request.	
1110	Expected Results: System Ingest: Sends DDN to TSDIS simulator.	
1120	TSDIS Simulator: Receives DDN, sends a DDA.	
1130	Expected Results: System Ingest: DDA is received and logged; Ingest status recorded in Ingest History Log. Status of this ingest ID is removed from Ingest Status Display.	
1140	Ingest-Distribution Technician: Review Ingest History Log and Status Display.	

	V0/DAS Ancillary Data Ingest Steps	
	These steps are executed each time Ingest detects a Delivery Record while polling the V0 or DAS data link servers.	
2000	Ingest/Distribution Tech: Invokes the Ingest Status Monitor tool (GUI display) from the main Ingest GUI screen.	
2010	Expected Results: The System identifies ongoing ingest requests (stored in Sybase tables) and displays them	
2020	Remote Server: Ancillary data provider application software automatically sets up to write ancillary data and Delivery Record to specified location.	
2030	Expected Results: The System automatically checks a predetermined network location for the presence of a Delivery Record file. Once a Delivery Record file is located, the System automatically coordinates the ancillary data transfer with the data provider using ftp services. After the ancillary data and Delivery Record file is received, the INGST CSCI automatically checkpoints request information extracted from the Delivery Record into a Sybase data base.	
2040	Ingest/Distribution Tech: Periodically reviews Ingest Status Monitor display. The Technician looks for ingest requests that have been queued for an unexpected period (in the TRMM Mission era, anything on the queue for more than a few minutes..	
2050	Expected Results: The System automatically extracts metadata from transferred ancillary data and checks the metadata (e.g., range checks). Format conversion (e.g., GRIB to HDF-EOS for NMC-ETA data) is automatically performed for all ancillary products previously identified as requiring conversion. It then inserts the data and metadata into the appropriate Data Server. Request state (active, file transferred, data insertion complete, etc.) is updated in the checkpointed request information	
2060	Ingest/Distribution Tech: Periodically reviews the MSS Event Log to visually determine anomalous conditions (e.g., a pattern of metadata check errors).	
2070	Expected Results: The System automatically logs events by means of the MSS Event Logging capability. "Events" include detection of out-of-range metadata values, incompletely-transferred data files, etc. Based on DAAC policy, selected events may be identified as "alerts", which trigger a visual change of state at the MSS Event Log display.	
2080	Ingest/Distribution Tech: Observes the removal of the completed ingest request from the Status Monitor display.	
2090	Expected Results: Upon completion (successful or unsuccessful) of data insertion into the Data Server, status is automatically returned to the data provider by means of electronic mail. Summary information is retained in the Sybase data base (as Ingest History Log data).	

2100	Expected Results: Upon completion (successful or unsuccessful) of data insertion into the Data Server, the SDSRV CI automatically determines the existence of subscriptions on the receipt of the TRMM ancillary data. A subscription notice is sent to TSDIS.	
2110	Ingest/Distribution Tech: Views summary information about completed ingest requests using the GUI Ingest History Log tool. The Data Ingest Technician generates a summary report on completed ingest requests. The report (in two parts) gives summary statistics (e.g., number of data granules ingested, data volume ingested) and error statistics (e.g., number of errors of a given type encountered) for a specified time range.	
2120	Expected Results: The System provides access to Sybase data base tables containing summary information on completed ingest requests, including completion status, data volume ingested, etc.	
TSDIS Subscription Activated		
2130	Expected Results: System Data Server - Based on TSDIS subscription, stages data and metadata, logs status to system log, sends a DAN to TSDIS.	
2140	TSDIS Simulator: Sends a DAA to ECS, Transfers data file, sends a DDN to ECS.	
2150	Expected Results: System Data Server - Receives and logs DAA; Receives and logs DDN; Deletes data files from staging	
2160	Ingest/Distribution Tech: Monitor transfer processing; verify successful transfer.	
2180	Tester: Perform a compare of the ancillary data file before it was sent from the remote and after it was received by TSDIS simulator.	
2190	Expected Results: The files compared should be identical.	
Procedure Wrapup		
3010	Ingest/Distribution Tech: Review Ingest History Log and status display	
3020	Tester: Query data server for existence of the files that were ingested during this procedure. Files should exist.	
3030	Tester: secure the following materials : <ol style="list-style-type: none"> 1. System Event Log Printout 2. Ingest History Log Printout 3. Results of data server query for existing data files prior to procedure 4. Results of data server query for existing data files after procedure 5. Resource utilization reports 	

Data Reduction and Analysis Steps:

- A. The following materials are required for analysis:
 1. System Event Log Printout
 2. Ingest History Log Printout
 3. Results of data server query for existing data files prior to procedure
 4. Results of data server query for existing data files after procedure
 5. Resource utilization reports from MSS tools.
- B. DADS1472#A, DADS1640#A - Compare the Ingest History Logs, the data server query results, and the test data set descriptions for this procedure. Confirm that all data scheduled for ingest was logged, received and stored on the data server. Confirm that all metadata extracted and generated is accurate complete. Retrieve the data from the archive and verify that it was archived without corruption.
- C. DADS2778#A - Compare the data server query results, and the test data set descriptions for this procedure. Confirm that all data scheduled for ingest was archived. Confirm that all metadata extracted and generated is accurate and complete.
- D. DADS2780#A, EOSD0020#A - Confirm the ingest data rate during the EDOS interface test by examining the HP Openview plots during the period of EDOS activity identified in the Ingest History Log. Confirm that the Ingest CIs were able to temporarily store the EDOS ingest files. Review the system event log for this period to confirm that all communication with EDOS proceeded according to the protocol outlined in the procedure.

Signature:	Date :
Witness Signature:	Date :

12.5.1.3 GSFC DAAC Data Reprocessing Support and Archiving

TEST Procedure No.: A120610.030\$G	Date Executed:	Test Conductor:
Title: GSFC DAAC Data Reprocessing Support and Archiving		
Objective :	This procedure tests the capabilities of the ECS to support TSDIS reprocessing of TRMM data. It verifies that ancillary data is sent to TSDIS by subscription and that TSDIS can order and receive archived TRMM data for reprocessing. It also verifies that ECS at the GSFC DAAC can ingest and archive the reprocessed data. This procedure is to be executed as a part of procedure A120610.020.	

Requirements	Acceptance Criteria			
DADS2450#A	<p>This requirement is verified through test.</p> <p>Each DADS shall distribute data to elements of EOSDIS and approved non-EOSDIS data destinations.</p> <p>The ECS at the GSFC DAAC must be able to distribute products to EOSDIS elements (TSDIS). The ECS must send the ancillary data to TSDIS upon receipt through a standing subscription and must send VIRS products for reprocessing upon receipt of the request from TSDIS. The ancillary product required by TSDIS is the NCEP FNL data. ECS receives four files a day, one every six hours. One file is transferred during this procedure.</p>			
TRMM3100#A	<p>This requirement is verified through demonstration.</p> <p>ECS shall make daily deliveries of an average of 2-days worth of archived TRMM PR, TMI, GV, and SSM/I ancillary data to TSDIS for the purpose of reprocessing by TSDIS. ECS also shall daily ingest an average of 2-days worth of reprocessed data from TSDIS.</p> <p>The GSFC ECS DAAC must fill a TSDIS product order for 2 days worth of TRMM data and must ingest and archive the resulting reprocessed data. (Need clarification on which levels of data would be requested and which would be redelivered)</p>			
TRMM4090#A	<p>This requirement is verified through test.</p> <p>ECS shall make daily deliveries of an average of 2-days worth of archived TRMM VIRS, GOES Precipitation Index (GPI), Global Precipitation Climatology Project (GPCP), and National Meteorological Center (NMC) ancillary data to TSDIS for the purpose of reprocessing by TSDIS. ECS shall also daily ingest an average of 2-days worth of reprocessed data from TSDIS.</p> <p>The GSFC ECS DAAC must be able to provide TSDIS with two days worth of NOAA ancillary data to support TRMM reprocessing. The DAAC must also be able to receive two days worth of reprocessed data from TSDIS.</p>			
TRMM5070#A	<p>This requirement will be verified through analysis.</p> <p>ECS will continue to archive original TRMM standard products (Level 1B-3) after reprocessing for 6 months, after which the products will become eligible for deletion.</p> <p>This function is not automated for release A. No Acceptance Test action required for this requirement.</p>			
Test Inputs:				
Data Set Name	Data Set ID	File Name	Description	Version
VIRS1A_003			Two days worth of VIRS 1A data, 32 files +32 SFDU headers	1
TMI1A_003			Two days worth of TMI 1A data, 32 files +32 SFDU headers	1
PR1A_003			Two days worth of PR 1A data, 32 files	1

			+ 32 SFDU headers	
VIRS1B_003			Two days worth of VIRS 1B Radiance data, 32 files HDF/EOS format	1
VIRS1BBROWSE_003			Two days worth of VIRS 1B browse data, 2 files HDF/EOS format	1
TMI1B_003			Two days worth of TMI Brightness/Temperatures 1B data, 32 files HDF/EOS format	1
TMI1BBROWSE_003			Two days worth of TMI 1B browse data, 2 files HDF/EOS format	1
PR1B_003			Two days worth of PR 1B Power data, 32 files HDF/EOS format	1
PR1BBROWSE_003			Two days worth of PR 1B browse data, 2 files HDF/EOS format	1
GV1B_003			Two days worth of GV 1B Calibration data, 528 files HDF/EOS format	1
PR1C_003			Two days worth of PR 1C Reflectivities data, 32 files HDF/EOS format	1
PR1CBROWSE_003			Two days worth of PR 1C browse data, 2 files HDF/EOS format	1
GV1C_003			Two days worth of GV 1C QC Radar Reflectivity data, 528 files HDF/EOS format	1
GV1CBROWSE_003			Two days worth of GV 1C browse data, 22 files HDF/EOS format	1
TMI2A_003			Two days worth of TMI 2A Profiling data, 32 files HDF/EOS format	1

TMI2ABROWSE_003			Two days worth of TMI 2A browse data, 2 files HDF/EOS format	1
PR2A_007			Two days worth of PR 2A Surface Cross Section data, 32 files HDF/EOS format	1
PR2ABROWSE_007			Two days worth of PR 2A Surface Cross Section browse data, 2 files HDF/EOS format	1
PR2A_008			Two days worth of PR 2A Qualitative data, 32 files HDF/EOS format	1
PR2ABROWSE_008			Two days worth of PR 2A Qualitative browse data, 2 files HDF/EOS format	1
PR2A_009			Two days worth of PR 2A Profile data, 32 files HDF/EOS format	1
PR2ABROWSE_009			Two days worth of PR 2A Profile browse data, 2 files HDF/EOS format	1
GV2A_009			Two days worth of GV 2A Existence data, 22 files + 22 SFDU headers	1
GV2A_010			Two days worth of GV 2A Radar Site Rain Map data, 528 files HDF/EOS format	1
GV2ABROWSE_010			Two days worth of GV 2A Radar Site Rain Map browse data, 22 files HDF/EOS format	1
GV2A_011			Two days worth of GV 2A Radar Site Conv./Stratiform Map data, 528 files HDF/EOS format	1
GV2ABROWSE_011			Two days worth of GV 2A Radar Site Conv./Stratiform Map	1

			browse data, 22 files HDF/EOS format	
GV2A_012			Two days worth of GV 2A Radar Site 3- D Reflectivities data, 528 files HDF/EOS format	1
GV2ABROWSE_0 12			Two days worth of GV 2A Radar Site 3- D Reflectivities browse data, 22 files HDF/EOS format	1
TRMMEPHEM_00 2			One days worth of TRMM Platform Ephemeris, 1 file in binary EPHEM format	1
NMCFNL_002			One days worth of NCEP FNL data, 4 files, GRID format	1
NMCMRF_002			One days worth of NCEP MRF data, 20 files, GRIB format	1
NMCETA_002			One days worth of NCEP ETA data, 8 files	1

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
Setup Ancillary Data Subscription		
10	Ingest/Distribution Tech: Enters a subscription requesting notification upon receipt of TRMM ancillary data (NCEP FNL data) at DAS data link server.	
20	Expected Results: The System (SDSRV CI) stores the subscription pending receipt of TRMM ancillary data.	
Ingest of Ancillary Data		
30	Ingest/Distribution Tech: Invokes the Ingest Status Monitor tool (GUI display) from the main Ingest GUI screen.	
40	Expected Results: The System identifies ongoing ingest requests (stored in Sybase tables) and displays them	
50	Remote Server: Ancillary data provider application software automatically sets up to write ancillary data and Delivery Record to specified location.	
60	Expected Results: The System automatically checks a predetermined network location for the presence of a Delivery Record file. Once a Delivery Record file is located, the System automatically coordinates the ancillary data transfer with the data provider using ftp services. After the ancillary data and Delivery Record file is received, the INGST CSCI automatically checkpoints request information extracted from the Delivery Record into a Sybase data base.	
70	Ingest/Distribution Tech: Periodically reviews Ingest Status Monitor display. The Technician looks for ingest requests that have been queued for an unexpected period (in the TRMM Mission era, anything on the queue for more than a few minutes..	
80	Expected Results: The System automatically extracts metadata from transferred ancillary data and checks the metadata (e.g., range checks). Format conversion (e.g., GRIB to HDF-EOS for NMC-ETA data) is automatically performed for all ancillary products previously identified as requiring conversion. It then inserts the data and metadata into the appropriate Data Server. Request state (active, file transferred, data insertion complete, etc.) is updated in the checkpointed request information	
90	Ingest/Distribution Tech: Periodically reviews the MSS Event Log to visually determine anomalous conditions (e.g., a pattern of metadata check errors).	

100	Expected Results: The System automatically logs events by means of the MSS Event Logging capability. "Events" include detection of out-of-range metadata values, incompletely-transferred data files, etc. Based on DAAC policy, selected events may be identified as "alerts", which trigger a visual change of state at the MSS Event Log display.	
110	Ingest/Distribution Tech: Observes the removal of the completed ingest request from the Status Monitor display.	
120	Expected Results: Upon completion (successful or unsuccessful) of data insertion into the Data Server, status is automatically returned to the data provider by means of electronic mail. Summary information is retained in the Sybase data base (as Ingest History Log data).	
130	Expected Results: Upon completion (successful or unsuccessful) of data insertion into the Data Server, the SDSRV CI automatically determines the existence of subscriptions on the receipt of the TRMM ancillary data. A subscription notice is sent to TSDIS.	
140	Ingest/Distribution Tech: Views summary information about completed ingest requests using the GUI Ingest History Log tool. The Data Ingest Technician generates a summary report on completed ingest requests. The report (in two parts) gives summary statistics (e.g., number of data granules ingested, data volume ingested) and error statistics (e.g., number of errors of a given type encountered) for a specified time range.	
150	Expected Results: The System provides access to Sybase data base tables containing summary information on completed ingest requests, including completion status, data volume ingested, etc.	
	TSDIS Subscription Activated	
180	Expected Results: System Data Server - Based on TSDIS subscription, stages FNL data and metadata, logs status to system log, sends a DAN to TSDIS.	
190	TSDIS Simulator: Sends a DAA to ECS, Transfers data file, sends a DDN to ECS.	
200	Expected Results: System Data Server - Receives and logs DAA; Receives and logs DDN; Deletes data files from staging	
210	Ingest/Distribution Tech: Monitor transfer processing; verify successful transfer.	
215	Tester: Perform a compare of the NCEP FNL file before it was sent from DAS and after it was received by TSDIS simulator.	
216	Expected Results: The files compared should be identical.	
220	Tester: Procedure may be paused at this point to synchronize with TSDIS data request for reprocessing support.	
	TSDIS Requests Data for Reprocessing	

230	Tester: Set up TSDIS simulator to request data for reprocessing. Files requested will be TRMM files archived during test procedure A120610.010\$G and TRMM files previously staged.	
240	TSDIS Simulator: Send a Data Request by Granule ID to ECS for products for reprocessing.	
250	Expected Results: System Data Server - Receives the Data Request, validates and Logs the request. Checks to see if the data exists. If request is valid (it should be), sends a DRA to TSDIS.	
260	Ingest/Distribution Tech: Monitor request processing including caching utilization, media use count, ftp server volumes, and shipping destinations and records.	
270	Expected Results: System Data Server - Retrieves data from persistent storage to staging, retrieves metadata, logs status to system log, sends a DAN to TSDIS.	
280	TSDIS Simulator: Sends a DAA to ECS, Transfers data files, sends a DDN to ECS.	
290	Expected Results: System Data Server - Receives and logs DAA; Receives and logs DDN; Deletes data files from staging	
300	Ingest/Distribution Tech: Monitor transfer processing; verify successful transfer.	
	Start TSDIS Data Ingest	
	Note: Awaiting resolution of question of how many transfers by DAN will actually occur and how the files will be packaged by DAN.	
340	Tester: Set up TSDIS simulator for transfer of data set VIRS1A_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
350	Tester: Set up TSDIS simulator for transfer of data set VIRS1A_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
360	Tester: Set up TSDIS simulator for transfer of data set TMI1A_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
370	Tester: Set up TSDIS simulator for transfer of data set PR1A_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
380	Tester: Set up TSDIS simulator for transfer of data sets VIRS1B_003 and VIRS1BBROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
390	Tester: Set up TSDIS simulator for transfer data sets TMI1B_003 and TMI1BBROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	

400	Tester: Set up TSDIS simulator for transfer of data sets PR1B_003 and PR1BBROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
410	Tester: Set up TSDIS simulator for transfer of data set GV1B_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
420	Tester: Set up TSDIS simulator for transfer of data sets PR1C_003 and PR1CBROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
430	Tester: Set up TSDIS simulator for transfer of data sets GV1C_003 and GV1CBROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
450	Tester: Set up TSDIS simulator for transfer data sets TMI2A_003 and TMI2ABROWSE_003 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
460	Tester: Set up TSDIS simulator for transfer of data sets PR2A_007 and PR2AROWSE_007 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
470	Tester: Set up TSDIS simulator for transfer of data sets PR2A_008 and PR2AROWSE_008 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
480	Tester: Set up TSDIS simulator for transfer of data sets PR2A_009 and PR2AROWSE_009 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
490	Tester: Set up TSDIS simulator for transfer of data set GV2A_009 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
500	Tester: Set up TSDIS simulator for transfer of data sets GV2A_010 and GV2ABROWSE_010 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
510	Tester: Set up TSDIS simulator for transfer of data sets GV2A_011 and GV2ABROWSE_011 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
520	Tester: Set up TSDIS simulator for transfer of data sets GV2A_012 and GV2ABROWSE_012 and execute TSDIS data transfer procedures, steps 1000 through 1140.	
	End of TSDIS Transfers	
	TSDIS Data Ingest Steps	
	These steps are executed for each TRMM data ingest from TSDIS.	
1000	Tester: Set up TSDIS simulator for transfer of specified data files equivalent to the required amount of data.	
1010	TSDIS Simulator: Send a DAN to ECS Ingest.	

1020	Expected Results: System: DAN receipt is logged and process is assigned an ID for status logging.	
1030	Expected Results: System Ingest: generates an ingest request and stores the request on a prioritized list. A DAN summary (data source, number of files, location of data) is placed in the event log.	
1040	Ingest-Distribution Technician: Monitor the status display; note DAN receipt.	
1050	Expected Results: System Ingest: Sends a DAA to TSDIS and logs a copy of the DAA.	
1060	Tester: Verify receipt of DAA by TSDIS simulator.	
1070	Expected Results: System Ingest: Schedules and performs data transfer; allocates required devices, logs status to event log.	
1080	Expected Results: System Ingest: Extracts and validates metadata; reports metadata validation status to event log.	
1090	Ingest-Distribution Technician: Check event log; metadata must be reported as valid.	
1100	Expected Results: System Ingest: Prepares and generates a data server insert request.	
1110	Expected Results: System Ingest: Sends DDN to TSDIS simulator.	
1120	TSDIS Simulator: Receives DDN, sends a DDA.	
1130	Expected Results: System Ingest: DDA is received and logged; Ingest status recorded in Ingest History Log. Status of this ingest ID is removed from Ingest Status Display.	
1140	Ingest-Distribution Technician: Review Ingest History Log and Status Display.	
	Procedure Wrapup	
3010	Ingest/Distribution Tech: Review Ingest History Log and status display	
3015	Tester: Print MSS logs and ingest history logs.	
3020	Tester: Query data server for existence of the files that were ingested during this procedure. Files should exist.	

3030	Tester: secure the following materials : 1. System Event Log Printout 2. Ingest History Log Printout 3. Results of data server query for existing data files prior to procedure 4. Results of data server query for existing data files after procedure	
<p>Data Reduction and Analysis Steps:</p> <p>A. The following materials are required for analysis:</p> <ol style="list-style-type: none"> 1. System Event Log Printout 2. Ingest History Log Printout 3. Results of data server query for existing data files prior to procedure 4. Results of data server query for existing data files after procedure <p>B. DADS2450#A - Compare the Ingest History Logs, the data server query results, and the test data set descriptions for this procedure. Confirm that all data ingested from DAS and TSDIS was logged, received and stored on the data server. Confirm that all metadata extracted and generated is accurate and complete. Confirm that the data files transferred to TSDIS were the ones that TSDIS requested.</p> <p>C. TRMM4090#A - Compare the Ingest History Logs, the data server query results, and the test data set descriptions for this procedure. Confirm that all data ingested from DAS and TSDIS was logged, received and stored on the data server. Confirm that all metadata extracted and generated is accurate and complete. Confirm that the data files transferred to TSDIS were the ones that TSDIS requested.</p> <p>D. TRMM5070#A - Examine the metadata for the data files that had been reprocessed to confirm that they are marked for deletion in six months. (Currently assume this data management is recorded in the metadata.)</p>		
Signature:		Date :
Witness Signature:		Date :

12.5.2 System Response Time Performance Sequence

This sequence verifies the capability of the ECS to respond to nominal and maximum loads of normal operational inputs within a specified response time envelopes. Performance will be measured and statistics recorded using the ECS performance monitoring capabilities and procedures. The tests will verify system performance at both nominal and maximum processing loads with the system configured and operating in a normal in "day-in-the-life" operational mode.

The pull performance goals for product orders are listed in the following table:

Table 12-2. Product Orders

PRODUCT	FILES/DAY	AVG. SIZE	MAX. SIZE	TOTAL VOL.
FTP PUSH				
FTP PULL				
HARD MEDIA				

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for a sequence (both real and simulated) are listed:

Simulated science users

Operator Positions The operator positions from the ECS Maintenance and Operations Position Descriptions document (607-CD-001-002) needed to support a sequence are listed:

DAAC Computer Operator

Operational Scenario: The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605-CD-001-003), that were used to develop tests in this sequence of tests are listed:

Network Data Distribution (Pull) Scenario (nominal) (Section 3.11.1)

Network Data Distribution (Push) Scenario (nominal) (Section 3.11.2)

Hard Media Distribution Scenario (Section 3.11.4)

Test Dependencies: The following table identifies the test procedure(s) for this sequence of tests that should be run prior to or concurrently with this test procedure.

* Note: This sequence should be run concurrent with the analogous end-to-end sequence at the other DAACs. Procedure numbers will be entered when available.

Test Procedure No.	Site/Procedure No.	Comments
A120620.010\$G	A120610.010\$G A120610.020\$G	Concurrent
A120620.020\$G	A120610.010\$G A120610.020\$G	Concurrent

12.5.2.1 Client Server Response Time Performance

TEST Procedure No.: A120620.010\$G		Date Executed:		Test Conductor:	
Title: Client Server Response Time Performance					
Objective : This procedure tests the capabilities of the ECS GSFC DAAC to perform client server transactions within response time performance limits. The performance requirements for processing speed are derived from the SDPS Requirements Specification for the ECS, Appendix C. This procedure is to be executed as part of procedures A120610.010\$G and A120610.020\$G.					
Requirements		Acceptance Criteria			
DADS3135#A		<p>This requirement is verified through test.</p> <p>The DADS shall have the capability to support the transaction rate as specified in Table 7-4.</p> <p>The system must be able to handle directory guide and inventory checks, data requests, browse requests, and product orders and respond to each within the required response times. A copy of Table 7-4 follows the data reduction and analysis portion of this procedure.</p> <p>The system log and Loadrunner log files and performance reports must show that all requests were handled within the required response times.</p>			
Test Inputs:					
Data Set Name	Data Set ID	File Name	Description	Version	
LR_userload_A120620.010\$G		LR_userload_A120620.010\$G	LoadRunner Script which performs data server user requests continuously at the nominal estimated request rate.		

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Computer Operator: Monitor resource utilization for all DMGHW and Data Server HWCIs. Configure to plot CPU, cache, and disk utilization and network throughput capacity utilization.	
15	Expected Results: MSS tools are configured to monitor resource usage.	
20	Tester: Invoke LoadRunner background user script LR_userload_A120610.010. This script will load the system with a nominal rate of service requests throughout the course of this procedure.	
25	Expected Results: The system responds to user requests within the performance parameters specified.	
30	Tester: secure the following materials : 1. System Event Log Printout 2. Resource utilization 3. LoadRunner Log Files	
40	Tester: Perform data analysis steps.	
Data Reduction and Analysis Steps:		
<p>A. The following materials are required for analysis:</p> <ol style="list-style-type: none"> 1. System Event Log Printout 2. Resource utilization plots from MSS tools 3. LoadRunner Log Files <p>B. DADS3135#A - From the LoadRunner reports, determine the response time for each user service. Plot results for data requests, browse requests, and product. Confirm that all requests were serviced within required response times for each type of request as specified in the table following this procedure.</p>		
Signature:		Date :
Witness Signature:		Date :

The following table was extracted from the F&PRS:

Session	Number of	Specific	Response	Response Time
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Category	IMS Operations per Hour	Operation	Time Requirement*	Design Goal*
Log-on and Authorization	100	Account confirmation and authorization	13 sec	6 sec
Directory Search	80	Search by single keyword attribute	8 sec	2 sec
		Search by multiple keyword and time or space range check	13 sec	7 sec
Guide Search	40	Search for document by keyword	8 sec	5 sec
Inventory Search	120	Search one instrument by multiple keyword attribute w/time or space range check (one DAAC)	8 sec	2 sec
		Search multiple instruments by multiple keyword attributed w/time or space range check (one DAAC)	18 sec	7 sec
		Multiple DAAC inventory search by keyword attributes and time and/or space range check	58 sec	11 sec
Status Check (account or request)	60	Status of pending order or Data Acquisition Request	13 sec	10 sec
		Account status retrieval	13 sec	6 sec
Browse (<i>for data selection</i>)	50	Retrieve and begin to display standard pre-computed browse product	58 sec	
Document Search	10	Search 1000 document pages by keyword	3 sec	3 sec
Ordering Services	25	Local DAAC order submission and confirmation	13 sec	12 sec
		Remote DAAC order submission and confirmation	38 sec	30 sec
		Order cost estimate	13 sec	12 sec

*(from initiation of query to start of display, exclusive of user environment and network delay)

12.5.2.2 Data Access Retrieval and Transmission Performance

TEST Procedure No.: A120620.020\$G	Date Executed:	Test Conductor:
Title: Data Access Retrieval and Transmission Performance		
Objective : This procedure verifies the capabilities of the ECS GSFC DAAC to perform key data access, transmission, and retrieval functions over communications networks at required rates and within required response times.		
Requirements	Acceptance Criteria	
DADS2530#A	<p>This requirement is verified through test.</p> <p>The DADS shall be capable of distributing by physical media to meet user demand.</p> <p>The system must be capable of fulfilling user's requests for data on physical media including CDROM, 6250 tape, and 8mm tape. Media production must be able to handle errors encountered with the devices or media and must give the operators control over media handling. Shipping letters must be generated for all media products generated.</p>	
DADS2770#A	<p>This requirement is verified through test.</p> <p>Upon receipt and approval of a request, the designated DADS shall make stored data products available for delivery to the requester within 24 hours for data distributed on physical media.</p> <p>The system must be able to fulfill all data requests for physical media products within 24 hours (ready to ship). Data retrieval and packaging must be able to occur concurrent with normal processing and be completed during the current production day. The daily hard media production volume to be supported is specified in Table 12-2. This procedure must be executed concurrently with A120610.010.</p>	
DADS3100#A	<p>This requirement is verified through test.</p> <p>Each DADS shall be capable of transmitting data over communications network in support of data production requests at the data rate specified in Appendix C and in support of data distribution requests at a rate equivalent to daily product volume (L1-L4).</p> <p>The system must be able to fulfill all data requests for electronic data distribution at the rates specified. Order processing, data retrieval and transmission must be able to occur concurrent with normal processing and at required rates. The transmission rates to be met are specified in Table 12-2. A LoadRunner script orders products at the nominal required rates and volumes. The system event logs must show responses within required times. This procedure must be executed concurrently with A120610.010\$G and A120610.020\$G</p>	
DADS3125#A	<p>This requirement is verified through test.</p> <p>Each DADS shall make archive data, associated with a pre-defined ECS standard format, that is requested for communications network delivery, available to the network in that ECS standard format within an average of 2 minutes after the receipt of a request for that data</p> <p>A data file requested for retrieval and transfer in ECS standard format must be staged and available within an average two minutes of receiving that request. This capability is verified using a Loadrunner script simulating user data requests. The processing logs must show an average</p>	

	of two minutes time between receipt of the request and availability of the data. (According to information received by the ECS Performance Tiger Team, NASA is currently reviewing this requirement. Not determined whether the response time should be volume dependent. Clarification of this requirement is expected prior to testing.)
DADS3126#A	This requirement is verified through test. Each DADS shall make archive data, associated with a pre-defined ECS standard format, that is requested for communications network delivery available to the network in a different ECS standard format within an average of 5 minutes after the request for that data. A data file requested for retrieval and transfer in Non-ECS standard format must be staged and available within an average of five minutes of receiving that request. (Awaiting confirmation that this requirement is available in Release A) (According to information received by the ECS Performance Tiger Team, NASA is currently reviewing this requirement. Not determined whether the response time should be volume dependent. Clarification of this requirement is expected prior to testing.)
DADS3135#A	This requirement is verified through test. The DADS shall have the capability to support the transaction rate as specified in Table 7-4. The system must be able to handle directory guide and inventory checks, data requests, browse requests, and product orders and respond to each within the required response times. The system log and Loadrunner log files and performance reports must show that all requests were handled within the required response times.

Test Inputs:

Data Set Name	Data Set ID	File Name	Description	Version
LR_elecreq_A120620.020		LR_elecreq_A120620.020	LoadRunner Script which performs electronic data product requests (pull types) continuously at the nominal estimated request rate.	
LR_pushreq_A120620.020		LR_pushreq_A120620.020	LoadRunner Script which performs electronic data product requests (push types) continuously at the nominal estimated request rate.	
LR_hardreq_A120620.020		LR_hardreq_A120620.020	LoadRunner Script which performs hard media data product requests continuously at the nominal	

			estimated request rate.	
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Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
10	Computer Operator: Configure HP Openview to monitor resource utilization for all HWCIs and all network traffic. Configure to plot CPU, cache, and disk utilization and network throughput capacity utilization.	
20	Tester: Invoke LoadRunner background user script LR_elecreq_A120620.020. This script performs electronic data product requests (pull types) continuously at the nominal estimated request rate.	
30	Tester: Invoke LoadRunner background user script LR_pushreq_A120620.020. This script performs electronic data product requests (push types) continuously at the nominal estimated request rate.	
40	Tester: Invoke LoadRunner background user script LR_hardreq_A120620.020. This script performs hard media data product requests continuously at the nominal estimated request rate.	
50	Ingest/Distribution Tech: Monitor the status display, note receipt and progress of requests as they are processed.	
60	Expected Results: As requests are received or hard media processing is performed, the system will display status and perform the necessary processing. The following three groups of steps correspond to the receipt of the three types of product request (electronic pull, electronic push, or hard media). Note that the system will be performing concurrent processing of requests and that actual results observed will be interleaved between the three series of steps.	
Electronic Pull Request Procedures		
70	LR_elecreq_A120620.020: A user establishes a client session to a Data Server and creates a working collection of data.	
80	Expected Results: The Data Server assigns a session ID and logs (via MSS Logging Services) the initiation of the session. The Data Server logs and queues the search request sent by the user to create a working collection and searches the Metadata Database in accordance with the user's indicated search attributes when the request is reached in the request queue. Identified granules are returned to the user's working collection.	
90	Ingest/Distribution Tech: Tracks progress of request and review any errors recorded by using either the Other Screens option and selecting Logs & Reports (MSS) from DSS System Management main menu or views actual request status's via the Distribution Management Component's Requests Screen.	

100	LR_elecreq_A120620.020: The user refines the contents of the working collection to specific granules of high interest. The user invokes an acquire (via ftp pull) service to obtain the high interest granules.	
110	Expected Results: The Data Server logs (via MSS Logging Services) and queues subsequent search requests to identify high interest granules and searches the Metadata Database in accordance with the user's refined search attributes when the request is reached in the request queue. The user's working collection is updated with the results of each subsequent search. Distribution Management logs (via MSS Logging Services) the Acquire Via ftp Pull Request and sends a Data Retrieval Request to Storage Management listing the granules of high interest to be retrieved and placed on the Pull Volume.	
120	Ingest/Distribution Tech: can review progress for any request via either the Other Screens option and selecting Logs & Reports (MSS) from DSS System Management main menu or via the Storage Management Component's Logs & Reports (MSS) sub-menu available on the Other Screens pull down menu.	
130	Expected Results: Storage management logs (via MSS Logging Services) and queues the Data Retrieval Request. When the request is reached in the request queue, Storage Management requests the appropriate granules be retrieved from the archive via the Archive Management OTS Product. The granules are placed on the Working Storage and transferred to the Pull Volume, the reference count for each file in those granules is incremented and a Data Retrieval Request completed message is logged and sent to Distribution Management .	
140	Ingest/Distribution Tech: The operator may view Pull Area Utilization data via the Storage Management Component's Pull Area Utilization Screen.	
150	Expected Results: Distribution Management extracts the file names and path names associated with the high interest granules. A Retrieval Complete Notification is created which includes file and path names. This notification is sent to the requesting user's client or via email to the user if no client is active.	
160	LR_elecreq_A120620.020: The user retrieves the requested data from the DAAC's pull volume.	
170	Expected Results: CSS Subsystem detects and logs (via MSS Logging Services) that an authorized user has accessed specific files on the pull volume. CSS provides a Pull Volume Access Notification to Storage Management which enumerates the path names and files retrieved by an associated user ID.	
180	Ingest/Distribution Tech: The operator can verify request completion via either the Other Screens option and selecting Logs & Reports (MSS) from DSS System Management main menu, the Storage Management Component's Logs & Reports (MSS) sub-menu available on the Other Screens pull down menu, or the Distribution Management Component's Request Screen.	

190	Expected Results: Storage Management receives and logs (via MSS Logging Services) the Pull Volume Access Notification. Storage Management parses the notification and determines which files were retrieved by the user. The reference count for those files is decremented.	
	Electronic Push Request Procedures	
200	LR_pushreq_A120620.020: A user establishes a client session to a Data Server and creates a working collection of data.	
210	Expected Results: The Data Server assigns a session ID and logs (via MSS Logging Services) the initiation of the session. The Data Server logs and queues the search request sent by the user to create a working collection and searches the Metadata Database in accordance with the user's indicated search attributes when the request is reached in the request queue. Identified granules are returned to the user's working collection.	
220	Ingest/Distribution Tech: Tracks progress of request and review any errors recorded by using either the Other Screens option and selecting Logs & Reports (MSS) from DSS System Management main menu or views actual request status's via the Distribution Management Component's Requests Screen.	
230	LR_pushreq_A120620.020: The user refines the contents of the working collection to specific granules of high interest. The user invokes an acquire (via push) service to obtain the high interest granules.	
240	Expected Results: The Data Server logs (via MSS Logging Services) and queues subsequent search requests to identify high interest granules and searches the Metadata Database in accordance with the user's refined search attributes when the request is reached in the request queue. The user's working collection is updated with the results of each subsequent search. Distribution Management logs (via MSS Logging Services) the Acquire Via Push Request and sends a Data Retrieval Request to Storage Management listing the granules of high interest to be retrieved and placed on the Pull Volume.	
250	Ingest/Distribution Tech: can review progress for any request via either the Other Screens option and selecting Logs & Reports (MSS) from DSS System Management main menu or via the Storage Management Component's Logs & Reports (MSS) sub-menu available on the Other Screens pull down menu.	
260	Expected Results: Storage management logs (via MSS Logging Services) and queues the Data Retrieval Request. When the request is reached in the request queue, Storage Management requests the appropriate granules be retrieved from the archive via the Archive Management OTS Product. The granules are placed on the Working Storage and transferred to the Push Volume, the reference count for each file in those granules is incremented and a Data Retrieval Request completed message is logged and sent to Distribution Management .	

270	Ingest/Distribution Tech: The DDIST Technician may further examine the status of requests pressing the Filter button to reach the Filter Requests Screen from the Distribution Management Requests Screen or by using the Request Screen in DSS System Management.	
280	Expected Results Distribution Management provides login, system, and security information received in the Acquire via ftp Push, to Storage Management. Storage Management utilizes CSS Services to push the high interest granules to the user's system. Distribution Management logs (via MSS Logging Services) a distribution complete message and sends a distribution completed notification to the client or Emails the user if no client is active.	
Hard Media Request Procedures		
290	LR_hardreq_A120620.020: A user establishes a client session to a Data Server and creates a working collection of data.	
300	Expected Results: The Data Server assigns a session ID and logs (via MSS Logging Services) the initiation of the session. The Data Server logs and queues the search request sent by the user to create a working collection and searches the Metadata Database in accordance with the user's indicated search attributes when the request is reached in the request queue. Identified granules are returned to the user's working collection.	
310	Ingest/Distribution Tech: Tracks progress of request and review any errors recorded by using either the Other Screens option and selecting Logs & Reports (MSS) from DSS System Management main menu or views actual request status's via the Distribution Management Component's Requests Screen.	
320	LR_hardreq_A120620.020: The user refines the contents of the working collection to specific granules of high interest. The user invokes an acquire (via push) service to obtain the high interest granules.	
330	Expected Results: The Data Server logs (via MSS Logging Services) and queues subsequent search requests to identify high interest granules and searches the Metadata Database in accordance with the user's refined search attributes when the request is reached in the request queue. The user's working collection is updated with the results of each subsequent search. Distribution Management logs (via MSS Logging Services) the Acquire Via Hard Media Request and sends a Data Retrieval Request to Storage Management listing the granules of high interest to be retrieved.	
340	Ingest/Distribution Tech: The DDIST Technician may check request status at any time using the DSS-OSM Request Screen.	

350	Expected Results: Storage Management logs (via MSS Logging Services) and queues the Data Retrieval Request. When the request is reached in the request queue, Storage Management requests the appropriate granules be retrieved from the archive via the Archive Management OTS Product. The granules are placed on the Media Distribution Volume and a Data Retrieval Request completed message is logged and sent to Distribution Management.	
360	Ingest/Distribution Tech: The DDIST Technician may further examine the status of requests pressing the Filter button to reach the Filter Requests Screen from the Distribution Management Requests Screen or by using the Request Screen in DSS System Management.	
370	Expected Results: Distribution Management provides format parameters received in the acquire via physical media request, to Storage Management. Storage Management generates the physical media volume requested by the user. Distribution Management generates volume labels, mailing labels, and a packing list. Distribution Management logs (via MSS Logging Services) the completion of media generation and alerts the Data Distribution Technician.	
380	Ingest/Distribution Tech: The DDIST Technician affixes the volume and mailing labels, packages the physical media volume along with the packing list, and ships the package. The operator then updates the status of the Distribution Management Request to "shipped" from the Distribution Management Requests Screen.	
390	Expected Results: Distribution Management receives and logs (via MSS Logging Services) the state change on the Distribution Management Request and sends an E- mail message to the requester stating the requested medium has been shipped.	

Data Reduction and Analysis Steps:

A. The following materials should be secured for analysis at the close of the procedure:

1. System Event Log Printout
2. Ingest History Log Printout
3. Results of data server query for existing data files prior to procedure
4. Results of data server query for existing data files after procedure
5. Resource utilization plots from HP Openview
6. LoadRunner Log Files

B. DADS3125#A: From the System Event Logs and Loadrunner determine the amount of time it took to respond to user data requests. Confirm that it took less than two minutes from receipt of the requests to staging of the data.

C. DADS3135#A: From the system event logs, determine the response time for each user service request (time request completed minus time request received). Plot results for data requests, browse requests, and product orders versus wall clock time. Confirm that all requests were serviced within required response times for each type of request as specified in Table 7-4.

Signature:	Date :
Witness Signature:	Date :

12.5.3 ECS Sizing, Evolution, and Growth Sequence

This sequence verifies through analysis the capability of the ECS to accommodate an expansion of PGS capabilities by a factor of 10 without major design changes and to provide four times the normal processing capability to process all relevant EOS science data. Analysis is also performed to verify that the ECS has adequate growth and evolution capabilities.

There are no step-by-step procedures associated with these analysis in this procedure. Papers detailing the analysis approach and results will be produced. This sequence will not be performed at the GSFC ECS DAAC. The papers will be produced at the ECS Development Facility and will address the ECS as a whole.

Configuration: The subsystems needed to perform this sequence of tests are as follows: CSS/MSS, DSS, INS, ISS, & PLS. Refer to Appendix D for additional detail.

External Interfaces: There are no external interfaces (i.e. other ECS sites and data sources) needed for this sequence.

Operator Positions: There are no operator positions needed for this sequence.

Operational Scenario: There are no operations scenarios taken from the Operations Scenarios for the ECS Project: Release-A, used during this sequence of tests

Test Dependencies: There are no test dependencies needed for this sequence of tests.

12.5.3.1 Accommodation of ECS Expansion Analysis

TEST Procedure No.: A120630.010\$G	Date Executed:	Test Conductor:
Title: Accommodation of ECS Expansion Analysis		
Objective : These analyses verify the capabilities of the ECS to accommodate an expansion of PDPS capabilities without major design changes and to provide four times the nominal processing capabilities for all EOS science data.		
Requirements DADS1640#A	Acceptance Criteria	
	This requirement is verified through test. The DADS shall support the number of files derivable from Appendix C, with the ability to expand to match growth. Number of files for Release A archives are derived from the capability to accommodate the Release A supported missions until the operational turnover of Release B (Through 3 quarter of 98). The number of files at GSFC is sized to support the TSDIS data (along with required ancillary) and V0 migration data while LaRC archive is sized to support the CERES (TRMM) data (along with required ancillary) and V0 migration data. Total accumulated number of files for Release A, derived from the August, 1995 Technical Baseline (Release A procurement baseline), is 127K @ GSFC and 70K @ LaRC. No Release A archive capacity is provided at EDC. The number of V0 migration files was derived by assuming an average size of 50 MB per file. The design of the Release A DAAC is analyzed to verify ability to meet the growth requirements.	

	Only the ability to handle growth is verified in this procedure.
DADS3090#A	<p>This requirement is verified through analysis.</p> <p>Each DADS shall be capable of 200% expansion in throughput and archive capacity without architecture or design change. This expansion capacity shall apply to the total of the at-launch requirement plus the yearly growth requirement specified in Appendix C.</p> <p>Analysis of theoretical throughput capacity of the current configuration and determination of increases in throughput which may be realized without design change is performed to determine the theoretical throughput performance limits. Analysis of the results of performance testing in the End to End Performance test sequences must validate the performance model. To determine the archive storage capacity, the theoretical limits for both data and metadata are determined through analysis of current data store capacities and expansion limitations.</p>
EOSD0540#A	<p>This requirement is verified through analysis.</p> <p>ECS elements shall be expandable to facilitate updates in instrument data products and algorithms, particularly with respect to storage capacity and processing capability.</p> <p>For compliance refer to Segment Specification 305/DV2, System Design Spec (SDS) 207/SE1.</p>
EOSD0545#A	<p>This requirement is verified through analysis.</p> <p>ECS shall be able to accommodate growth (e.g., capacity) in all of its functions as well as the addition of new functions.</p> <p>For compliance refer to Segment Specification 305/DV2, System Design Spec (SDS) 207/SE1.</p>
EOSD5070#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable expansion to GByte networks including the ability to provide increased volume of data distribution/access..</p> <p>Scenarios for expanding to Gbyte networks are developed and analyzed for feasibility. All network components including DAAC architectures, inter-DAAC networks, and user access services must support the expansion capabilities.</p>
EOSD5110#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the separate use of data management, data processing, or data archive and distribution software components by a GCDIS data center. The GCDIS data centers will have full responsibility for integration of those components within their environment. Interfaces between the components must be developed to serve the mission of EOSDIS, but be made available for a GCDIS data center.</p> <p>DID 305/DV2, DID 313/DV3, and DID 207/SE1 will be reviewed to determine compliance.</p>
ESN-1207#A	<p>This requirement is verified through analysis.</p> <p>The ESN capacity and performance shall be capable of expansion to be consistent with the specified capacity and performance growth requirements of the ECS elements and functions.</p> <p>The potential capacity and performance limits of the ESN are evaluated and compared to the growth requirements of the ECS.</p>
IMS-1800#A	<p>This requirement is verified through analysis.</p> <p>The IMS design and implementation shall have the flexibility to accommodate 100% expansion in processing and storage capacity without major changes to the IMS hardware and software design. This</p>

	<p>expansion capacity shall apply to the total at-launch requirement plus the yearly product growth requirement specified in Appendix C.</p> <p>The design of the IMS is analyzed to determine whether changes are required to accommodate expansion. A model of the capacity limits is developed to determine whether the design is sufficient to handle the growth requirements as specified in Appendix C.</p>
PGS-1270#A	<p>This requirement is verified through analysis.</p> <p>The PGS design and implementation shall have the flexibility to accommodate PGS expansion up to a factor of 3 in the processing capacity with no changes to the processing design, and up to a factor of 10 without major changes to the processing design. Such expansion in capacity or capability shall be transparent to existing algorithms or product specifications. This requirement shall apply to the system at all phases of contract performance, including the final system, as well as the at-launch system.</p> <p>The design of the PGS is analyzed to determine whether changes are required to accommodate expansion. A model of the capacity limits is developed to determine whether the design is sufficient to handle the requirement. Any changes required for expansion are analyzed to determine the impact on existing algorithms and product specifications.</p>
PGS-1300#A	<p>This requirement is verified through analysis.</p> <p>Each PGS shall provide a processing capacity four times the size necessary to process all EOS science data for which it is responsible, except for the Data Assimilation Office requirements shown in Appendix C, Table C-5a. It shall be possible to effectively utilize the entire reprocessing capacity at each site on computers with similar architectural design (e.g., parallel processors), for a single algorithm or any mix of algorithms normally run at that site. The four times processing capacity accounts for:</p> <ul style="list-style-type: none"> a. 1 times to allow for normal processing demands b. 2 times to allow for reprocessing demands c. 1 times to allow for algorithm integration and test demands, production of prototype products, ad hoc processing for "dynamic browse" or new search and access techniques developed by science users, and additional loads due to spacecraft overlap. <p>Release A Processing capacity provided is equal to 1.2X normal processing for CERES on TRMM and .3X normal processing for AM-1 instruments. This will be provided only at the GSFC, LaRC and EDC DAACs. Totals provided as derived from the August, 1995 Technical Baseline (Release A procurement baseline) in MFLOPS is @ LaRC: 7125; @ GSFC: 3467, and @ EDC: 1086. These capacities include the 25% efficiency required by PGS-1301#A</p> <p>The capacity of the site's PGS resources are determined through analysis of the hardware configuration and system architecture. The capacity requirements for this site are derived from the technical baseline.</p>
PGS-1301#A	<p>This requirement is verified through analysis.</p> <p>The effective CPU processing rates used for sizing purposes in PGS-1300 shall not be greater than 25% of peak-related CPU capacity. These rates are applied to the analysis of PGS-1300.</p>
PGS-1310#A	<p>This requirement is verified through analysis.</p>

	<p>The processing capacity necessary to process all EOS science data for which each PGS is responsible shall be based on the data volumes and instrument processing load requirements (MFLOPS) assigned to this DAAC.</p> <p>Instrument Assignment for Release A is for LaRC : 1.2X CERES on TRMM and .3X (MISR, MOPITT and CERES on AM-1); GSFC: .3X MODIS; and EDC: .3X MODIS and ASTER). The assigned capacities are used in the analysis of PGS-1300.</p>
SDPS0170#A	<p>This requirement is verified through analysis</p> <p>The SDPS shall accommodate growth in the instrument processing load and storage capacity without changes to the SDPS architecture or design.</p> <p>The design of the SDPS is analyzed to determine whether changes are required to accommodate expansion. A model of the capacity limits is developed to determine whether the design is sufficient to handle the requirement</p>
Test Inputs:	Segment Specification 305/DV2, System Design Spec (SDS) 207/SE1, DID 305/DV2, DID 313/DV3, and DID 207/SE1.
Note:	<p>The analysis of ECS growth as defined in the above requirements will be presented in a technical paper.</p> <p>The objectives of this paper will be to:</p> <ol style="list-style-type: none"> 1. Specify the growth in capabilities, capacity, and throughput as defined in the above requirements and clarification text 2. Identify the ECS design components which are subject to the growth requirements. 3. For each component, analyze the maximum growth potential based on the ECS design. 4. Analyze the overall design to locate limitations or “bottlenecks” which may impact the overall growth potential. 5. Apply the results of the above analysis to each growth requirement.
Witness Signature:	Date:
Tester Signature:	Date:

12.5.3.2 ECS Growth and Evolution Adequacy Analyses

TEST Procedure No.: A120630.020\$G	Date Executed:	Test Conductor:
Title: ECS Growth and Evolution Adequacy Analyses		
Objective These analyses verify the capabilities of the ECS to evolve to meet future EOS processing requirements.		
Requirements	Acceptance Criteria	
DADS0680#A	<p>This requirement is verified through analysis.</p> <p>Each DADS shall have the capability to support all required requests and shall grow as demand expands.</p>	
DADS0780#A	<p>This requirement is verified through analysis.</p> <p>Each DADS shall have the capability to incorporate additional ingest and data distribution formats and conversion software.</p> <p>The design of the ECS is analyzed to determine whether new data formats and data conversion software can be inserted into the ECS with no major changes the basic architecture.</p>	
DADS1700#A	<p>This requirement is verified through analysis.</p> <p>Where appropriate, the DADS shall comply with the evolving guidelines and standards emerging from the IEEE-CS MSS Reference Model.</p> <p>The design of the ECS is evaluated against the evolving guidelines and standards for compliance.</p>	
DADS1720#A	<p>This requirement is verified through analysis.</p> <p>The FSMS at each DADS shall be based on published and open architectures which fully describe the physical organization and structures of files.</p> <p>The FSMS is evaluated for compliance to open architectures.</p>	
DADS1730#A	<p>This requirement is verified through analysis.</p> <p>The DADS shall be developed using file storage management systems that have configuration-controlled application programming interfaces (APIs).</p> <p>The APIs are examined and evaluated.</p>	
EOSD4020#A	<p>This requirement is verified through analysis.</p> <p>At each DAAC site, the product generation functional capabilities shall be spread across multiple product generation computers thereby</p>	

	<p>providing a "failsoft" environment.</p> <p>Move to system management or push.</p>
EOSD5000#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the addition of other data providers, e.g. DAACs, SCFs, ADCs, ODCs, which may:</p> <ul style="list-style-type: none"> - provide heterogeneous services, i.e. services in support of EOS which may be less than or different than ECS services. - be connected with varying topologies - have variable levels of reliability or operational availability. <p>The ability of the ECS to be interoperable with the V0 DAACs and the ADCs is used as a basis for evaluating the ECS' capability to add additional, new data providers. The test procedures A120540.010 and A120540.020 must be successfully executed to verify this basic capability. The ECS design components relating to interoperability is analyzed and approach to achieving interoperability is evaluated for ability to add new data providers which may have lesser capabilities.</p>
EOSD5010#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable extended provider support, i.e. client access of data and services at SCFs and DAACs, as authorized, without distinction to the client.</p>
EOSD5020#A	<p>This requirement is verified through analysis.</p> <p>ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.</p> <p>The capability of the ECS to be installed and operated at each DAAC is evaluated.</p>
EOSD5030#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.</p> <p>The data storage and access strategies are analyzed and evaluated for adherence to open system standards which will enable the addition of services.</p>
EOSD5040#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the combination of services from ECS and other data providers in arbitrary, i.e. non-predefined, ways as needed by users to conduct EOS science.</p>
EOSD5110#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the separate use of data management, data</p>

	<p>processing, or data archive and distribution software components by a GCDIS data center. The GCDIS data centers will have full responsibility for integration of those components within their environment. Interfaces between the components must be developed to serve the mission of EOSDIS, but be made available for a GCDIS data center.</p>
EOSD5200#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable the addition of the following as required for discipline specific user support: unique fields to metadata, unique products for browse, and unique documents for data products guides. These activities shall not require software changes to ECS.</p>
EOSD5250#A	<p>This requirement is verified through analysis.</p> <p>ECS shall enable access to configuration controlled applications programming interfaces that permit development of DAAC-unique value added services and products where DAAC-unique value added services may consist of one or more of the following types of developments:</p> <ul style="list-style-type: none"> a. Visualization utilities and products b. Data sets and inter-data set usability utilities and products c. Data analysis utilities d. Special subsetting capabilities (e.g. dynamic) e. On-line analysis functions f. New search and access techniques g. Data acquisition planning and utilities h. Experimental QA techniques i. Non-digital data utilities and products j. System Management Functions
ESN-0240#A	<p>This requirement is verified through analysis.</p> <p>The ESN shall be extensible in its design to provide capability for growth and enhancement.</p>
IMS-0355#A	<p>This requirement is verified through analysis.</p> <p>The metadata shall be expandable to include additional attributes which are identified during the mission and deemed useful for data search.</p>
PGS-1400#A	<p>This requirement is verified through analysis.</p> <p>The PGS shall be developed with configuration-controlled application programming interfaces (APIs) that will be capable of supporting development and integration of new algorithms developed at each DAAC to support DAAC value-added production.</p>
Note:	<p>The analysis of ECS evolvability as defined in the above requirements will be presented in a technical paper.</p> <p>The objectives of this paper will be to:</p> <ol style="list-style-type: none"> 1. Define, based on the requirements, the general and specific goals relating to evolvability. 2. Define, based on identified goals, the characteristics, standards, and technical

capabilities which must be embodied in the ECS to enable evolvability.
 3. Analyze the architecture of the ECS and the Release A as-built design to evaluate the ECS's capability to meet the defined evolvability goals.
 4. Provide a matrix linking the requirements, evolvability goals, and ECS design components which implement those goals.

Witness Signature:
Tester Signature:

Date:
Date:

12.5.4 ECS Testability and Overall Capabilities Sequence

This sequence verifies through test and analysis the ECS's capability to support testing in all phases in the development and mission life cycle and verifies system requirements for broad overall functional capabilities.

External Interfaces: The external interfaces (i.e. other ECS sites and data sources) needed for a sequence (both real and simulated) are listed:

- TSDIS - Simulated
- EDOS - Simulated
- DAS Data Link Server
- GSFC V0 DAAC
- SMC
- Simulated science users

Operator Positions: The operator positions from the ECS Maintenance and Operations Position Descriptions document (607/OP2) needed to support a sequence are listed:

- Production Planner
- Resource Manager
- Archive Manager
- Ingest-Distribution Technician

Operational Scenario: The operations scenarios, taken from the Operations Scenarios for the ECS Project: Release-A document (605/OP1), that were used to develop tests in this sequence of tests are listed:

- TRMM Ancillary Data Ingest Scenario (Section 3.9.2)

Test Dependencies: There are no test dependencies needed for this sequence of tests. However, test procedures A120610.010\$G and A12020.010\$G are used in procedure A120640.010\$G.

2.5.4.1 Test Support in an Operational DAAC

TEST Procedure No.: A120640.010\$G	Date Executed:	Test Conductor:		
Title: Test Support in an Operational DAAC				
Objective : The Test Support in an Operational DAAC test verifies the site's DAAC capabilities to support end-to-end test activities including system testing of the interfaces between ECS and TRMM. These activities must be accommodated without impacting DAAC operations.				
Requirements		Acceptance Criteria		
EOSD0760#A		<p>This requirement is verified through demonstration. Each ECS Element shall support end-to-end EOS system testing and fault isolation. A test of an End to End data flow is performed concurrently with the execution of test procedure A120610.010\$G simulating a test during a normal operational day. The execution of test procedure A120610.010\$G must not be impacted by the test.</p>		
EOSD0800#A		<p>This requirement is verified through demonstration. Each ECS element shall be capable of supporting end-to-end test and verification activities of the EOS program including during the pre-launch, spacecraft verification, and instrument verification phases. A test of an End to End data flow is performed concurrently with the execution of test procedure A120610.010\$G simulating a test during a normal operational day. The execution of test procedure A120610.010\$G must not be impacted by the test</p>		
Test Inputs: See Test Procedures A120610.010\$G and A120220.010\$G				
Data Set Name	Data Set ID	File Name	Description	Version
None.				

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
	These procedures currently assume that the ECS is required to support test activities concurrent with normal operations. It is also assumed that the system can be configured to separate the test environment from the operational environment and that operational data will not be corrupted by the execution of a test at the DAAC.	
10	Tester: Configure a test environment for the performance of end to end testing.	
100	Tester : Begin execution of test procedure A120610.010\$G	
110	Tester: Concurrent with step 320 of test procedure A120610.010\$G, begin execution of test procedure A120220.010\$G.	
120	Expected Results: Test procedure A120220.010\$G will not interrupt normal operations.	
Data Reduction and Analysis Steps:		
Witness Signature:		Date
Tester Signature:		Date

12.5.4.2 Support of Life Cycle Testing

TEST Procedure No.: A120640.020\$G	Date Executed:	Test Conductor:
Title: Support of Life Cycle Testing		
Objective : The Support of Life Cycle Testing procedure consolidates requirements concerning the support of test activities which are out of the scope of normal ECS development testing. No verification of these requirements will be performed during acceptance testing.		
Requirements	Acceptance Criteria	
EOSD0740#A	Each ECS element shall provide a set of real or simulated functional capabilities for use in the following types of test: a. Subsystem (components of an ECS element) b. Element (fully integrated element) c. ECS System (Integration of ECS elements)	
EOSD0750#A	Each ECS element shall provide a set of real or simulated functions which interfaces with both its ECS internal and external entities for use in the following types of test: a. Subsystem (components of an ECS element) b. Element (fully integrated element) c. EOSDIS System (Integration of EOSDIS elements)	
PGS-0605#A	The PGS shall process pre-launch test data and provide test data product samples for user verification. No acceptance testing action required.	
SDPS0140#A	The SDPS shall support element, system, and subsystem test activities throughout the development phase. No acceptance testing action required.	
TRMM8010#A	TRMM shall manage, and ESDIS shall support, the TRMM end-to-end system testing of the interfaces between ECS and TRMM. No acceptance testing action required.	
TRMM8020#A	ESDIS shall support testing, fault isolation, verification, and validation of the interfaces with the TRMM end-to-end ground system. No acceptance testing action required.	
TRMM8030#A	The TRMM I&T Program shall develop an overall ground segment integration and test plans and procedures. No acceptance testing action required.	
TRMM8031#A	ESDIS shall develop test plans and procedures in support of the development, verification, and testing of the interfaces with the TRMM ground system. No acceptance testing action required.	
TRMM8040#A	ESDIS shall support TRMM development of test plans and	

	procedures in support of the development, verification, and testing of the interfaces between the TRMM ground system and ECS.			
TRMM8050#A	The TSDIS elements shall support integration and test activities defined in the TRMM overall ground segment integration and test plans and procedures. No acceptance testing action required.			
TRMM8060#A	ECS shall archive and distribute TRMM test plans and procedures for the interface between ECS and the TRMM ground system including TSDIS. No acceptance testing action required.			
TRMM8071#A	ECS shall support all dataflows and archival and distribution functionality for integration and test with the TRMM ground system. No acceptance testing action required.			
TRMM8080#A	ECS shall support TRMM Mission Simulation #1 No acceptance testing action required.			
TRMM8081#A	ECS shall support TRMM Mission Simulation #2 No acceptance testing action required..			
TRMM8090#A	ECS shall archive and distribute TRMM algorithms and documentation in support of test and integration of interfaces with TSDIS No acceptance testing action required. No acceptance testing action required.			
TRMM8110#A	The TSDIS elements shall be capable of processing simulated TRMM Instrument data in support of pre launch checkout of the interfaces with ECS. No acceptance testing action required.			
TRMM8120#A	ESDIS shall coordinate provision of LIS and CERES simulated instrument data and instrument data parameters to SDPF in support of integration and test. No acceptance testing action required.			
Test Inputs: None				
Data Set Name	Data Set ID	File Name	Description	Version
None.				

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
	None	
Data Reduction and Analysis Steps:		
Witness Signature:		Date
Tester Signature:		Date

12.5.4.3 ECS Overall Capabilities

TEST Procedure No.: A120640.030\$G	Date Executed:	Test Conductor:
Title: ECS Overall Capabilities		
Objective : The ECS Overall Capabilities procedure consolidates requirements that specify broad ECS capabilities. These requirements are too broad to be verified through the execution of a single test or demonstration. In this procedure, the results of previously executed procedures are reviewed and analyzed to verify that the ECS is capable of performing all Release A functionality.		
Requirements	Acceptance Criteria	
DADS0210#A	<p>This requirement is verified through analysis.(Change from test)</p> <p>Each DADS shall be capable of receiving, at a minimum, the following types of EOS instrument data in support of pre-launch checkout of the ground system:</p> <ol style="list-style-type: none"> a. Real EOS instrument data b. Simulated EOS instrument data <p>Rel A has AM-1 and Landsat-7 ingest capability for early interface testing using simulated data.</p>	
DADS1970#A	<p>This requirement is verified through analysis.</p> <p>Each DADS shall access from the SMC, via the system database, the product thread information for each standard and quick-look product generated by EOSDIS.</p> <p>Awaiting clarification from ESDIS.</p>	
EOSD0500#A	<p>This requirement is verified through analysis.</p> <p>ECS shall perform the following major functions:</p> <ol style="list-style-type: none"> a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management <p>Procedures from all four scenario groups are analyzed to determine the capabilities of the ECS installation at this site to meet the general requirements listed above.</p> <p>For A, only DAAC planning and scheduling is verified in this procedure. B and C are not verified in this procedure. These items are verified in the EOC Test Procedures.</p>	
EOSD1750#A	<p>This requirement is verified through analysis.</p> <p>The GSFC DAAC shall receive data including the following types of</p>	

	supporting information from the ECS science community (TLs, TMs, PIs, and Co-Is): <ol style="list-style-type: none"> a. Algorithms b. Software Fixes c. Instrument Calibration Data d. Integration Support Requests e. Metadata for Special Products Archiving f. Data Transfer Requests (inventories, directories, and browse g. Data Quality/Instrument Assessment h. Instrument Operations Information i. Ancillary Data The SCF procedures in the Pull Scenario Group are analyzed to verify the DAAC's capability to support the science community.			
IMS-0010#A	This requirement is verified through analysis. The IMS shall be capable of providing 24 hour per day, 7 day per week access to the ECS services. The End to End procedures are analyzed to evaluate the site's capability to maintain 24-hour a day operations.			
SDPS0085#A	This requirement is verified through analysis.(Change from test) The SDPS shall support data products transitioned from V0 at a level of service equal to or greater than the level of service provided for those same data products by V0. The level of service are defined in Appendix C of the ESDIS Project Level 2 Requirements, Volume 5 EOSDIS Version 0.			
SDPS0120#A	This requirement is verified through analysis. The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode. The End to End procedures are analyzed to evaluate the site's capability to maintain 24-hour a day operations.			
SDPS0130#A	This requirement is verified through analysis. The SDPS shall provide the capability for DAACs to exchange data products, browse data, metadata, data quality information, research results, and documentation. The following procedures must demonstrate the capability to exchange data between the DAACS: <ol style="list-style-type: none"> a. A120610.010\$G b. A120610.020\$G 			
Data Set Name	Data Set ID	File Name	Description	Version
None.				

Step-By-Step Procedures		
Step No.	Input Action / Expected Results	Pass / Fail / Comments
	None	
Data Reduction and Analysis Steps:		
Review the acceptance test result as stated in the acceptance criteria.		
Witness Signature:		Date
Tester Signature:		Date

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