

Task 52 – ECS Requirements Volume 2 Specification

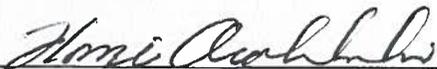
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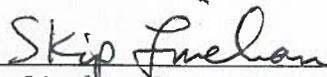


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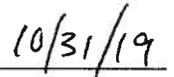


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ECS Requirements Volume 2 Specification

Draft



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ECS Requirements Volume 2 Specification Signature/Approval Page

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**[Electronic] Signatures available in B32 Room E148
online at: / <https://ops1-cm.ems.eosdis.nasa.gov/cm2/>**

Preface

This document is under ESDIS Project configuration control. Once this document is approved, ESDIS approved changes are handled in accordance with Class I and Class II change control requirements described in the ESDIS Configuration Management Procedures, and changes to this document shall be made by change bars or by complete revision.

Any questions should be addressed to: esdis-esmo-cmo@lists.nasa.gov

ESDIS Configuration Management Office (CMO)

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Abstract

This document provides the completed Level 4 SDPS Requirements for the Client (CLS), Communications (CSS), Data Management (DMS) and Data Access subsystems.

Keywords: *SDPS, CLS, CSS, DMS, Data Access*

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1 INTRODUCTION

The EOSDIS Core System (ECS) performs information management and data archiving and distribution for Earthdata mission datasets at NASA Distributed Active Archive Center (DAAC) locations. Each DAAC performs these functions using a combination of standard capabilities provided by ESDIS, and hardware and software specific to the DAAC. The ECS was developed using special hardware and software to support the high ingest rates of Earth Observing System (EOS) instruments. ECS currently resides and operates at three DAACs: Atmospheric Science Data Center (ASDC), Land Processing (LP) DAAC and National Snow and Ice Data Center (NSIDC) DAAC.

Data products are created by NASA's Science Investigator-led Processing Systems (SIPS) or, in a few cases, by systems interfacing with the ECS at the DAACs. The ECS at the DAACs ingests the data from the processing systems and archives them. ECS has interfaces with the Common Metadata Repository (CMR) to provide metadata to support search and access through CMR clients, for example, Earthdata Search. ECS also provides software toolkits to assist instrument teams in their development of product generation software at their Science Computing Facilities (SCFs) to facilitate ingest of the resulting products into ECS or into other DAAC-specific archiving and distribution systems.

ECS is structured as two segments: the Communications and Systems Management Segment (CSMS) and the Science Data Processing Segment (SDPS).

- The Communications and Systems Management Segment (CSMS) provides the communications infrastructure for the ECS and systems management for all of the ECS hardware and software components. The CSMS provides the interconnection between users and service providers within the ECS, transfer of information between subsystems, computer software configuration items (CSCIs), computer software components (CSCs), and processes of the ECS.
- The Science Data Processing System (SDPS) provides science data ingest and production, search and access functions, data archive, and system management capabilities.

The ECS includes the following subsystems:

Subsystem	Segment	Subsystem Description
AIM	SDPS	Archive Inventory Management Subsystem
BMGT	SDPS	Bulk Metadata Generation Tool
CSS	CSMS	Communications Subsystem
Data Access	SDPS	Data Access Subsystem
DMS	SDPS	Data Management Subsystem
DPL	SDPS	Data Pool Subsystem
DPL-Ingest	SDPS	Data Pool Ingest Subsystem
DSS	SDPS	Data Server Subsystem
DTS	SDPS	Defect Tracking Subsystem

Subsystem	Segment	Subsystem Description
EMS	SDPS	EOSDIS Metrics Subsystem
HEG	SDPS	HDF-EOS to Geotiff Converter Subsystem
INS	SDPS	Ingest Subsystem
ISS	CSMS	Internetworking Subsystem
MGS	SDPS	Map Generation Service
MSS	SDPS	System Management Subsystem
OMS	SDPS	Order Manager Subsystem
SSS	SDPS	Spatial Subscription Server Subsystem
TKD	SDPS	Toolkit Subsystem for DAACs
TKS	SDPS	Toolkit Subsystem for Science Teams

1.1 Purpose

The purpose of the ECS Requirements Document Set is to present the system requirements that have been implemented for ECS. This document is one volume of the set.

1.2 Scope

Because the number of requirements is large, this Requirements documentation set has been divided in to a series of Volumes, partitioned by subsystem. This is one volume in the set.

Volume	Subsystems	Requirements
1	AIM, BMGT	462
2	CSS, DMS, Data Access	249
3	DPL	1,670
4	DTS, HEG	125
5	DSS	1,245
6	INS, DPL Ingest	180
7	ISS, MGS, MSS, EMS	374
8	OMS	817
9	SSS	160
10	TKD, TKS	335
	total	5,617

1.3 Related Documentation

The latest versions of all documents below should be used. The latest Earth Science Data and Information System (ESDIS) Project documents can be obtained from Uniform Resource Locator (URL): <https://ops1-cm.ems.eosdis.nasa.gov>. ESDIS documents have a document number starting with either 423 or 505. Other documents are available for reference in the

ESDIS project library website at: http://esdisfmp01.gsfc.nasa.gov/esdis_lib/default.php unless indicated otherwise.

1.3.1 Applicable Documents

The following document contains policies or other directive matters that are binding upon the content of this document.

423-46-01	Functional and Performance Requirements Specification for the ECS Science Data Processing System
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1.3.2 Reference Documents

The following documents are not binding on the content but referenced herein and amplify or clarify the information presented in this document.

NPR 2810.1A	Security of Information Technology document
170-TP-013-001	HDF-EOS Data Format Converter User's Guide', (170-TP-013-001), January 2002
170-TP-600	HDF-EOS Library Users Guide Volume 1 (170-TP-600)
n/a	BMGTCollectionMetadata.dtd https://earthdata.nasa.gov/esdis/eso/standards-and-references/echo-metadata-standard
n/a	BMGTGranuleMetadata.dtd https://earthdata.nasa.gov/esdis/eso/standards-and-references/echo-metadata-standard
n/a	BMGTBrowseMetadata.dtd https://earthdata.nasa.gov/esdis/eso/standards-and-references/echo-metadata-standard
n/a	ECHO PackageManifest.xsd https://earthdata.nasa.gov/esdis/eso/standards-and-references/echo-metadata-standard
170-WP-023	Bulk Metadata and Browse Export Capability for the ECS Project' (170-WP-023-011, 9/27/00)
209-CD-036	Interface Control Document for ECS Interfaces That Support External Subsetters Located at DAACs', ECS Project document number 209-CD-036-001
304-CD-002	Science and Data Processing Segment (SDPS) Requirements Specification for the ECS Project (March 1995)
311-EMD-xxx	Archive Management Inventory (AIM) Database Design Schema Specifications for the EMD Project
423-41-57	Interface Control Document between the EOSDIS Core System (ECS) and the Science Investigator-led Processing Systems (SIPS), Volume 0
423-41-58	ICD between ECS and the LP DAAC
423-41-63	ICD between EMOS and the SDPS

423-45-02	Interface Control Document between EOSDIS Core System (ECS) and EOS Clearinghouse (ECHO) for Metadata Inventory and Ordering
423-45-03	Interface Control Document for ECS ECHO WSDL Order Component (EWOC) and External Processing Systems Co-located at the DAACs
423-ICD-EDOS/EGS	Interface Control Document Between the Earth Observing System (EOS) Data and Operations System (EDOS) and the EOS Ground System (EGS) Elements, renumbered as 428-ICD-EDOS/EGS
505-41-17	Interface Requirements Document between EOSDIS Core System (ECS) and the NASA Science Internet (NSI), 505-41-17
505-41-30	Interface Control Document Between EOSDIS Core Systems (ECS) and the Version 0 System for Interoperability', ESDIS document number 505-41-30
910-TDA-042	EMD Browsers Baseline
CK_70_01	ECS Ticket: End-To-End Checksum Capability
DP_72_02	ECS Ticket: Ingest of Level 0 Data from EDOS into the Data Pool
DP_72_03	ECS Ticket: Ingest of ASTER L1A and Browse into Data Pool
DP_72_04	ECS Ticket: Data Pool Ingest of Data at the ASDC DAAC
DP_72_05	ECS Ticket: Support for MISR Browse Linkages in Release 7.20
DP_S3_01	ECS Ticket: Populate Data Pool from ECS Archive
DP_S3_02	ECS Ticket: Accommodate Non ECS Data in Data Pool
DP_S4_07	ECS Ticket: Support Compression on Data Pool Insert
DP_S6_01	ECS Ticket: SIPS Ingest Into Data Pool
DP_SY_01	ECS Ticket: Data Pool FTP Service
DP_SY_03	ECS Ticket: Data Pool Cleanup
DP_SY_04	ECS Ticket: Data Pool Insert
DP_SY_06	ECS Ticket: Update Granule Expiration in Data Pool
DP_SY_08	ECS Ticket: Compile & Examine Data Pool Access Statistics
DS_7E_01	ECS Ticket: Removal of Science Data Server
ES_SY_01	ECS Ticket: External Subsetter Support
OD_S3_01	ECS Ticket: Order Manager
OD_S4_01	ECS Ticket: Improve Distribution to End Users through Data Pool
OD_S5_02	ECS Ticket: Managing HEG Orders
OD_S5_06	ECS Ticket: Hiding Order-Only Granules In The Data Pool
OG_S5_01	ECS Ticket: HEG Extensions for OWS
OM_80_01	ECS Ticket: Operational Updates to OMS
OP_S4_06	ECS Ticket: Support Multiple Data Pool File Systems
WD_S3_01	ECS Ticket: HDF-EOS Format Converter Integration with Data Pool
WD_S4_02	ECS Ticket: HEG Integration Enhancements

2 REQUIREMENTS

2.1 CSS

These are the completed ECS requirements for the CSS subsystem (the Communications Subsystem).

The CSS provides a variety of services that support communications between processes and hosts within the ECS.

ID	Title	Status
ECS-L4-10953	C-CSS-00030 The CSS services shall be extensible in its design to provide capability for growth and enhancement.	Completed
ECS-L4-10954	C-CSS-00040 The CSS services shall be compatible with industry standard operating systems and interfaces that are available on multiple Unix platforms.	Completed
ECS-L4-10955	C-CSS-00100 The CSS Directory services shall maintain multiple copies of the namespace on different hosts to provide fault tolerance.	Completed
ECS-L4-10956	C-CSS-00120 The CSS Directory services shall provide capabilities supporting reconfiguration transparent to the user.	Completed
ECS-L4-10957	C-CSS-00500 The CSS client services software shall be made available in the form of a CSS toolkit to the developers.	Completed
ECS-L4-10958	C-CSS-00510 The CSS shall support a transparent RPC mechanism to provide access to ECS data and services to the clients at the DAACs and SCFs.	Completed
ECS-L4-10959	C-CSS-01000 The CSS DOF Service shall provide a standards-based Interface Definition Language (IDL) and language mappings to at least C and C++ (limited) languages.	Completed
ECS-L4-10960	C-CSS-01010 The CSS DOF provided IDL shall support versioning of the interface supporting minor and major versions.	Completed
ECS-L4-10961	C-CSS-01020 The IDL supported minor versioning shall be upward compatible that requires no changes in the client software to communicate with the new implementation.	Completed
ECS-L4-10962	C-CSS-01030 The CSS Services shall provide Process-to-Process Communication Services to support the passing of the general error status as a parameter in calls between the clients and servers automatically.	Completed
ECS-L4-10963	C-CSS-01040 The CSS DOF Service shall provide the capability to marshal and unmarshal the arguments and the returned value transparently while making a remote procedure call including common standard formats and user-defined formats.	Completed
ECS-L4-10964	C-CSS-01050 The CSS DOF Service shall provide the capability to marshal and unmarshal standard types to/from a common standard format.	Completed
ECS-L4-10965	C-CSS-01060 The CSS DOF Service shall provide the capability to define marshaling and unmarshaling routines for user defined types.	Completed
ECS-L4-10966	C-CSS-01070 The CSS DOF Service shall support Process-to-Process Communication services by providing server APIs to register/unregister services in the namespaces (in different administrative domains) under different views including: a. server b. group c. profile.	Completed
ECS-L4-10967	C-CSS-01080 The CSS DOF Service shall provide server APIs to register/unregister different implementations of an interface in the namespace.	Completed

ID	Title	Status
ECS-L4-10968	C-CSS-01090 The CSS DOF Service shall provide server APIs to register/unregister individual objects implementing an interface in the namespace.	Completed
ECS-L4-10969	C-CSS-01100 The CSS DOF Service shall provide server APIs to register their services using different protocols in the namespace.	Completed
ECS-L4-10970	C-CSS-01110 The CSS DOF Service shall provide server APIs to register their services with the local endpoint mapper with the proper port number.	Completed
ECS-L4-10971	C-CSS-01120 The CSS DOF Service shall provide mechanisms to shutdown a service gracefully, by allowing the servers to unregister the server information from the namespace.	Completed
ECS-L4-10972	C-CSS-01130 The CSS DOF Service shall provide server APIs to limit the maximum number of threads to use in servicing the requests concurrently.	Completed
ECS-L4-10973	C-CSS-01140 The CSS DOF Service shall provide client APIs to bind to services (registered in the local namespace as well as remote namespaces) by using any of the following information to achieve location transparency of services. a. a service name b. an interface name c. an object name d. a host name and communication protocol e. an object reference	Completed
ECS-L4-10974	C-CSS-01150 The CSS DOF Service shall return gracefully by throwing an exception or returning an error code when it can not retrieve the binding information or can not resolve a binding.	Completed
ECS-L4-10975	C-CSS-01160 The CSS DOF Service shall provide client APIs to specify a confidence level of the binding information as follows: a. a low confidence level indicating the use of a local cache to obtain binding information b. a medium confidence level indicating the DOF to get the binding information from any of the directory replicas. c. a high confidence level indicating the DOF to get the binding information from the master copy of the directory services.	Completed
ECS-L4-10976	C-CSS-01170 The CSS DOF Service shall provide APIs to set/get the authentication service type to be used between the server and the client.	Completed
ECS-L4-10977	C-CSS-01180 The CSS DOF Service shall provide APIs to set/get authorization service type to be used between the client and the server.	Completed
ECS-L4-10978	C-CSS-01190 The CSS DOF Service shall provide APIs to maintain the integrity of the data to be passed between the client and the server.	Completed
ECS-L4-10979	C-CSS-01200 The CSS DOF Service shall provide APIs to maintain the privacy of the data passed between the client and the server by encrypting and decrypting the data.	Completed
ECS-L4-10980	C-CSS-01210 The CSS DOF Service shall provide APIs to set the identity of a given principal to a given process.	Completed
ECS-L4-10981	C-CSS-01220 The CSS DOF shall support the TCP and UDP communication protocols to communicate between the servers and the clients.	Completed
ECS-L4-10982	C-CSS-01230 The CSS Security Service shall provide security delegation to allow an intermediary server to operate on behalf of an initiating client while preserving both client's and server's identities and access control attributes.	Completed
ECS-L4-10985	C-CSS-01270 The CSS File Access Service shall provide distributed file system access service supporting location transparency.	Completed
ECS-L4-10986	C-CSS-01280 The CSS Security Service shall provide for a security service ACL manager facility.	Completed
ECS-L4-11006	C-CSS-03900 The CSS-DCHW CI Enterprise Communications Server shall backup all software and security audit trails and logs.	Completed
ECS-L4-11007	C-CSS-03910 The CSS-DCHW CI Local Communications Server shall backup all software and security audit trails and logs.	Completed

ID	Title	Status
ECS-L4-11009	C-CSS-10500 The CSS DCCI shall accept virtual terminal service request from the User.	Completed
ECS-L4-11010	C-CSS-10510 The CSS DCCI shall accept Electronic Mail Service requests from the User.	Completed
ECS-L4-11011	C-CSS-10520 The CSS DCCI shall accept remote File Access Service requests from the User.	Completed
ECS-L4-11013	C-CSS-10540 The CSS DCCI shall provide virtual terminal service to the User.	Completed
ECS-L4-11014	C-CSS-10550 The CSS DCCI shall provide Electronic Mail Services to the User.	Completed
ECS-L4-11015	C-CSS-10560 The CSS DCCI shall provide remote File Access Services to the User.	Completed
ECS-L4-11017	C-CSS-10580 The CSS DCCI shall record log events, including scheduled and unscheduled system shutdowns and restarts for auditing purposes.	Completed
ECS-L4-11043	C-CSS-10860 The CSS DCCI shall have the capability to send detected hardware and software fault information to MSS.	Completed
ECS-L4-11044	C-CSS-10870 The CSS DCCI shall have the capability to send event notification to MSS.	Completed
ECS-L4-11046	C-CSS-10900 The CSS DCCI shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11047	C-CSS-20000 The CSS Directory service shall provide the basic functionality to save and retrieve information into the local namespace: a. Create/Delete/Get context (key) b. List context. c. Set/Get attributes. d. Create/Delete attributes. e. List attributes. f. Set/Get attribute information.	Completed
ECS-L4-11048	C-CSS-20010 The CSS shall provide implementations of industry standard directory services, such as DNS, X.500, and CDS.	Completed
ECS-L4-11049	C-CSS-20020 The CSS Directory service shall provide a mechanism to periodically update copies of the namespace from the namespace designated as the master.	Completed
ECS-L4-11050	C-CSS-20025 The updating of the namespace shall be done a. automatically b. manually by the administrator.	Completed
ECS-L4-11051	C-CSS-20030 The CSS Directory Service shall provide the capability to partition the namespace and distribute and maintain them at different hosts on the network.	Completed
ECS-L4-11052	C-CSS-20040 The CSS Directory Service shall provide the capability to replicate partitions of the namespace on different hosts.	Completed
ECS-L4-11053	C-CSS-20050 The CSS Directory service shall provide multiple directory agents which cooperate among themselves through referral and chaining to perform directory operations.	Completed
ECS-L4-11054	C-CSS-20060 The CSS Directory service shall provide a way to denote the relative root of the namespace.	Completed
ECS-L4-11055	C-CSS-20070 The CSS Directory Service client shall maintain local cache to keep recently lookup information from the namespace for more efficient further lookups.	Completed
ECS-L4-11056	C-CSS-20080 The CSS Directory Service shall interact with the Security Service to provide host based security to the entries in the namespace.	Completed
ECS-L4-11057	C-CSS-20085 The CSS Directory Service shall interact with the Security Service to provide principal based security to the entries in the CDS namespace and an enhanced host based security for the entries in the GDS namespace.	Completed

ID	Title	Status
ECS-L4-11058	C-CSS-20090 The CSS Directory service shall define a minimum of 20 user defined attribute types for application users to store/retrieve attribute information.	Completed
ECS-L4-11059	C-CSS-20110 The CSS Directory service shall determine which naming service to use from a given context.	Completed
ECS-L4-11060	C-CSS-20120 The CSS Directory service shall provide a mechanism to communicate with both X.500 and DNS naming services in resolving lookups.	Completed
ECS-L4-11061	C-CSS-20130 The CSS Directory Service shall provide namespaces that are compatible with the existing NASA X.500 and DNS directory services.	Completed
ECS-L4-11062	C-CSS-20140 The CSS Directory Service shall provide independent directories, based on the mode identifier, for each mode.	Completed
ECS-L4-11063	C-CSS-20150 CSS mode management feature (test and operations modes) shall be capable of supporting all phases of development.	Completed
ECS-L4-11064	C-CSS-20160 The Directory Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11065	C-CSS-21000 The CSS Security service shall provide an API to verify the identity of users.	Completed
ECS-L4-11066	C-CSS-21005 The CSS Security service shall provide the functionality to get a unique session key for each client session.	Completed
ECS-L4-11067	C-CSS-21010 The CSS Security service shall not transmit its authentication information in clear text across networks.	Completed
ECS-L4-11068	C-CSS-21020 The CSS Security service shall provide the capability to create/modify/delete user accounts and privileges in the security registry.	Completed
ECS-L4-11069	C-CSS-21030 The CSS Security service shall provide the capability to define/modify/delete group information in the security registry.	Completed
ECS-L4-11070	C-CSS-21040 The CSS Security service shall provide an API to limit the time after which a login context will expire.	Completed
ECS-L4-11071	C-CSS-21050 The CSS Security Service shall provide an API to refresh login contexts before they expire.	Completed
ECS-L4-11072	C-CSS-21060 The CSS Security Service shall provide an API to accept server keys (i.e. passwords) associated with services interactively at the startup of a service.	Completed
ECS-L4-11073	C-CSS-21070 The CSS Security Service shall provide an API to store server keys associated with servers to a disk file.	Completed
ECS-L4-11074	C-CSS-21080 The CSS Security Service shall provide an API to retrieve the server keys associated with services from a disk file at startup time to authenticate the service.	Completed
ECS-L4-11075	C-CSS-21090 The CSS Security Service shall provide an API to change the identity of an application process through server keys.	Completed
ECS-L4-11076	C-CSS-21100 The CSS Security service shall provide an API to challenge the client/server to authenticate itself at the following three levels. a. connect level b. request level c. packet level	Completed
ECS-L4-11077	C-CSS-21105 The CSS shall notify MSS upon the failure or success of each authentication request.	Completed
ECS-L4-11078	C-CSS-21110 The CSS Security service shall provide the functionality to authenticate the principal before checking whether the principal is authorized to access a service/resources.	Completed
ECS-L4-11079	C-CSS-21120 The CSS Security service shall provide an API to check the authorization privileges of principals to access/control services/resources.	Completed
ECS-L4-11080	C-CSS-21130 The CSS Security Service shall provide an API to define the permission schema associated with a server/resource.	Completed

ID	Title	Status
ECS-L4-11081	C-CSS-21140 The CSS Security Service shall provide an API to create and maintain the ACLs associated with the server/resource in a database.	Completed
ECS-L4-11082	C-CSS-21150 The CSS Security Service shall provide an API to save/retrieve the ACL database onto persistent store.	Completed
ECS-L4-11083	C-CSS-21160 The CSS Security service shall provide the following APIs to MSS security management applications to retrieve/modify the access control lists associated with the ECS services/resources. a. to identify the permissions available to a principal b. to identify all the ACL managers protecting an object c. to get the printable representation of the permissions d. to locate the server with the writable copy of the ACL e. to read an ACL f. to write an ACL g. to test if the calling principal has some permissions h. to test if another principal has some permissions.	Completed
ECS-L4-11084	C-CSS-21170 The CSS Security service shall provide an API to maintain the integrity of the data passing between processes by using checksums at the following three levels: a. connect level b. request level c. packet level	Completed
ECS-L4-11085	C-CSS-21180 The CSS Security service shall provide an API to encrypt and send the data passing between processes at the following three levels: a. connect level b. request level c. packet level	Completed
ECS-L4-11086	C-CSS-21190 The CSS Security service shall provide an API to receive and decrypt the data passing between processes at the following three levels: a. connect level b. request level c. packet level	Completed
ECS-L4-11087	C-CSS-21210 The CSS Security service shall provide the capability to log audit information into security logs whenever authentication and authorization services are used. The audit information will contain the following: a. Date and time of the event b. User name c. Type of event d. Success or failure of the event e. Origin of the request	Completed
ECS-L4-11088	C-CSS-21220 The CSS Security Service shall provide a mechanism to authenticate client/server applications.	Completed
ECS-L4-11091	C-CSS-21225 The CSS Security service shall provide a name based authorization capability.	Completed
ECS-L4-11092	C-CSS-21235 The Security Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11093	C-CSS-22000 The CSS Message service shall provide an API for senders to send messages to receivers asynchronously without waiting for the receivers to receive it.	Completed
ECS-L4-11094	C-CSS-22010 The CSS Message service shall provide an API for senders to send messages to receivers in a deferred synchronously manner through an intermediary where by they can contact the intermediary at a latter time to receive the result.	Completed
ECS-L4-11095	C-CSS-22040 The CSS Message Service shall provide an API for the sender to designate multiple receivers for asynchronous messages.	Completed
ECS-L4-11096	C-CSS-22050 The CSS Message Service shall support multiple message queues so different groups of processes can use different message queues.	Completed
ECS-L4-11097	C-CSS-22060 The CSS Message Service shall purge a message from the message queue after an application specified time and an application specified number of tries irrespective of its delivery to the receivers.	Completed
ECS-L4-11098	C-CSS-22065 The CSS Message Service shall log event messages to the MSS management agents whenever the message service could not deliver a message to any receiver in the time period set by the sender of the message.	Completed
ECS-L4-11099	C-CSS-22070 The CSS Message Service shall store undeliverable messages and retrieve and transmit them later.	Completed

ID	Title	Status
ECS-L4-11100	C-CSS-22080 The CSS Message Service shall provide an API for the receiver to register interest in receiving messages from a certain sender.	Completed
ECS-L4-11101	C-CSS-22090 The CSS Message Service shall provide the capability to locate and send (push model) the messages to receivers.	Completed
ECS-L4-11102	C-CSS-22100 The CSS Message Service shall provide a non blocking API for the receiver to contact the message queue and get (pull model) the message.	Completed
ECS-L4-11103	C-CSS-22110 The CSS Message service shall support guaranteed delivery of the message to the receiver.	Completed
ECS-L4-11104	C-CSS-22120 The CSS Message service shall provide an API for the sender of the message to get the acknowledgment information the message service receives from the receivers.	Completed
ECS-L4-11105	C-CSS-22130 The CSS Message service shall associate the receiver to a returned value and maintain that information locally until the sender requests that information.	Completed
ECS-L4-11106	C-CSS-22140 The CSS Message Service shall provide an API for the sender of the message to receive return information stored at the message queue.	Completed
ECS-L4-11107	C-CSS-22150 The CSS Message Service shall defer sending a message to a receiver, if the receiver is not active, and should try sending the message periodically with an application set interval of time and an application specified number of tries until the receiver is active.	Completed
ECS-L4-11108	C-CSS-22220 The Message Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11109	C-CSS-23010 The Event Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11110	C-CSS-24010 The CSS Lifecycle Service shall provide a generic instantiation capability that creates a new object for a client.	Completed
ECS-L4-11111	C-CSS-24020 The CSS Lifecycle Service shall provide an API that accepts state initialization information.	Completed
ECS-L4-11112	C-CSS-24040 The CSS Lifecycle Service shall provide an API that returns an object invocation handle.	Completed
ECS-L4-11113	C-CSS-24060 The CSS Lifecycle Service shall respond to MSS Lifecycle commands to provide graceful shutdown services in the event of scheduled and unscheduled shutdowns.	Completed
ECS-L4-11114	C-CSS-24065 The CSS Lifecycle Service shall act as an intermediary during the client server connection phase.	Completed
ECS-L4-11115	C-CSS-24070 The CSS Lifecycle Service shall provide a way to shutdown an application process.	Completed
ECS-L4-11116	C-CSS-24075 The CSS Lifecycle Service shall respond to MSS Lifecycle commands to provide shutdown services in the event of graceful, scheduled and unscheduled shutdowns.	Completed
ECS-L4-11117	C-CSS-24080 The CSS Lifecycle Service shall provide a way to suspend an application process.	Completed
ECS-L4-11118	C-CSS-24090 The CSS Lifecycle Service shall provide a way to resume a suspend application process.	Completed
ECS-L4-11119	C-CSS-24100 The CSS Lifecycle Service shall provide the capability for server applications to activate an object (if it is not already running) and dispatch the incoming call to the object.	Completed
ECS-L4-11120	C-CSS-25010 The CSS Time Service shall adjust the time kept by the operating system at every node.	Completed

ID	Title	Status
ECS-L4-11121	C-CSS-25020 The CSS Time Service shall provide the functionality to obtain timestamps that are based on Coordinated Universal Time (UTC).	Completed
ECS-L4-11122	C-CSS-25030 The CSS Time Service shall provide an API to retrieve timestamp information.	Completed
ECS-L4-11123	C-CSS-25040 The CSS Time Service shall provide an API for converting between binary timestamps that use different time structures.	Completed
ECS-L4-11124	C-CSS-25050 The CSS Time Service shall provide an API for converting between binary timestamps and ASCII representations.	Completed
ECS-L4-11125	C-CSS-25060 The CSS Time Service shall provide an API for converting between UTC time and local time.	Completed
ECS-L4-11126	C-CSS-25070 The CSS Time Service shall provide an API for manipulating binary timestamps.	Completed
ECS-L4-11127	C-CSS-25080 The CSS Time Service shall provide an API for comparing two binary time values.	Completed
ECS-L4-11128	C-CSS-25090 The CSS Time Service shall provide an API for calculating binary time values.	Completed
ECS-L4-11129	C-CSS-25100 The CSS Time Service shall provide an API for obtaining time zone information.	Completed
ECS-L4-11130	C-CSS-25110 The CSS Time Service shall utilize a UTC based time provider.	Completed
ECS-L4-11131	C-CSS-25120 The CSS Time Service shall provide the utilities required to synchronize system time across all components.	Completed
ECS-L4-11132	C-CSS-25130 The CSS Time Service shall have the capability to synchronize its time to one or more external time sources.	Completed
ECS-L4-11133	C-CSS-25140 The CSS Time Service shall maintain an accuracy of 500 milliseconds within all ECS distributed components.	Completed
ECS-L4-11134	C-CSS-25155 The CSS TIME service shall provide a simulated time value based on a delta time value and the current absolute time.	Completed
ECS-L4-11138	C-CSS-25180 The CSS time service shall provide an API for obtaining the current time.	Completed
ECS-L4-11139	C-CSS-25185 The Time Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11140	C-CSS-26010 The CSS Thread Service shall allow the option that each invocation of a server operation to run as a distinct thread.	Completed
ECS-L4-11141	C-CSS-26040 The CSS Thread Service shall provide an API that synchronizes the access of shared data between concurrent threads.	Completed
ECS-L4-11142	C-CSS-26100 The Thread Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11143	C-CSS-28000 CSS Event Logger Service shall provide capability to record event and history data to a application specific log file.	Completed
ECS-L4-11144	C-CSS-28010 CSS Event Logger Service shall accept and record event time (when the event was generated, obtained from the Time Service) information.	Completed
ECS-L4-11145	C-CSS-28020 CSS Event Logger Service shall accept and record the application information (name and version of the calling application).	Completed
ECS-L4-11146	C-CSS-28025 CSS Event Logger Service shall support predetermined event importance indicators that provide different levels of information on event severities in support of MSS Network Management and Reporting Services.	Completed
ECS-L4-11147	C-CSS-28030 CSS Event Logger Service shall accept and record event message information.	Completed

ID	Title	Status
ECS-L4-11148	C-CSS-28040 CSS Event Logger Service shall accept and record the event type information. (Type of the event: fault, performance)	Completed
ECS-L4-11149	C-CSS-28070 CSS Event Logger Service shall record the operator/principle information that is relevant for the generated event.	Completed
ECS-L4-11150	C-CSS-28080 CSS Event Logger Service shall record the environment information for the generated event.	Completed
ECS-L4-11151	C-CSS-28100 The Event Logger Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11152	C-CSS-30010 The Process Framework shall accept at start up time process configuration information that it makes available to the application.	Completed
ECS-L4-11153	C-CSS-30020 The Process Framework shall also accept process configuration information via the command line.	Completed
ECS-L4-11154	C-CSS-30030 The Process Framework shall give precedence to the variables defined on the command line over those defined in the configuration file.	Completed
ECS-L4-11155	C-CSS-30040 The Process Framework shall exit with an error status if the mode of operation and the configuration file name are not provided on the command line.	Completed
ECS-L4-11156	C-CSS-30050 The Process Framework shall provide the ability for a process to get the following information: a. Mode of operation b. Executable name c. Process ID d. Application ID e. Program ID f. Major Version g. Minor Version	Completed
ECS-L4-11157	C-CSS-30060 The Process Framework shall provide interfaces to the underlying distributed architecture to set the following naming parameters: a. Short name for server b. Profile name c. Group name	Completed
ECS-L4-11158	C-CSS-30070 The Process Framework shall provide interfaces to the underlying distributed architecture including: a. Message Passing b. Management Agent Framework c. Server Request Framework d. Scheduled File Transfer (FTP)	Completed
ECS-L4-11159	C-CSS-30080 The Process Framework shall provide interfaces to the underlying distributed infrastructure to set the following security parameters: a. Server principal name b. Keytab file name c. ACL database filename	Completed
ECS-L4-11160	C-CSS-30090 The Process Framework shall provide an interface to the underlying distributed architecture to set the communications protocol policy	Completed
ECS-L4-11161	C-CSS-30100 The Process Framework shall provide an interface to the underlying distributed architecture to set the host policy	Completed
ECS-L4-11162	C-CSS-30110 The Process Framework shall provide the ability to log errors and events for both client and server processes in support of Network Management Services provided by MSS.	Completed
ECS-L4-11163	C-CSS-30130 The Process Framework shall provide interfaces to the Server Request Framework (SRF).	Completed
ECS-L4-11164	C-CSS-30140 The Process Framework Configuration File mechanism shall fetch parameters from the Registry Service.	Completed
ECS-L4-11165	C-CSS-30150 The Process Framework Configuration File mechanism shall read parameters from a .CFG file if present, otherwise parameters will be read from the Registry.	Completed
ECS-L4-11166	C-CSS-30160 The Process Framework (PF) shall interface with the MSS Management Agent framework to enable suspension of an application and support graceful shutdown services in the event of scheduled and unscheduled shutdowns.	Completed

ID	Title	Status
ECS-L4-11167	C-CSS-30170 The Process Framework (PF) shall interface with the MSS Management Agent Framework and respond to commands to resume/restart an application.	Completed
ECS-L4-11190	C-CSS-30400 The Registry Service shall maintain a collection of attribute-value pairs.	Completed
ECS-L4-11191	C-CSS-30410 The Registry Service shall support attributes of a hierarchical nature.	Completed
ECS-L4-11192	C-CSS-30420 The Registry Service shall allow a list of values to be associated with an attribute.	Completed
ECS-L4-11193	C-CSS-30430 The Registry Service shall support the string data type for values.	Completed
ECS-L4-11194	C-CSS-30440 The Registry Service shall support multiple labeled Attribute Trees.	Completed
ECS-L4-11195	C-CSS-30450 The Registry Service shall allow a new attribute to be added to an Attribute Tree.	Completed
ECS-L4-11196	C-CSS-30460 The Registry Service shall allow a single mode to be associated with an Attribute Tree.	Completed
ECS-L4-11197	C-CSS-30470 The Registry Service shall allow an Attribute Tree to be copied to create a new Attribute Tree.	Completed
ECS-L4-11198	C-CSS-30480 The Registry Service shall provide access to the Registry via a mode-specific Registry Server.	Completed
ECS-L4-11199	C-CSS-30490 The Registry Service database shall be regularly backed up to disk and, in the event of its becoming corrupted, be able to be restored from that disk.	Completed
ECS-L4-11200	C-CSS-30495 The Registry Service shall allow multiple Registry Servers to run in a mode to provide redundancy of the Registry Service.	Completed
ECS-L4-11201	C-CSS-30510 The Registry Service shall allow a description to be associated with each attribute.	Completed
ECS-L4-11202	C-CSS-30520 The Registry Service shall allow a change description to be associated with each value.	Completed
ECS-L4-11203	C-CSS-30530 The Registry Service maintenance shall be performed via a GUI which communicates directly with the Registry database.	Completed
ECS-L4-11204	C-CSS-30540 The Registry Service shall allow an application to obtain the value or values for an attribute by supplying the attribute path.	Completed
ECS-L4-11205	C-CSS-30550 The Registry Service shall allow all attributes to be retrieved in a subtree by specifying a wildcard character as the last element in a path.	Completed
ECS-L4-11206	C-CSS-30560 The Registry shall allow indirect specification of a value by specifying an Attribute Path prefixed with an @ as the value of an attribute.	Completed
ECS-L4-11207	C-CSS-30570 The Registry Server shall accept the Registry Database SQL server name, username, password, and mode at startup.	Completed
ECS-L4-11208	C-CSS-30580 The Registry Service shall allow subtrees and individual attributes to be marked as privileged.	Completed
ECS-L4-11209	C-CSS-30590 The Registry Service shall have the capability to support multiple drops concurrently.	Completed
ECS-L4-11210	C-CSS-30600 The Registry Service shall allow any subtree of an Attribute Tree to be moved to another location within the same or another Attribute Tree.	Completed
ECS-L4-11211	C-CSS-30610 The Registry Service shall allow any tree node or attribute within an Attribute Tree to be renamed.	Completed
ECS-L4-11212	C-CSS-30620 The Registry Service shall allow any subtree of an Attribute Tree to be deleted.	Completed

ID	Title	Status
ECS-L4-11213	C-CSS-30630 The Registry Service shall allow any subtree of an Attribute Tree to be replicated to another location within the same or another Attribute Tree.	Completed
ECS-L4-11214	C-CSS-30640 The Registry shall store distribution options information.	Completed
ECS-L4-11215	C-CSS-30650 The Registry shall provide an API to retrieve information that is hierarchically structured, containing dependencies between values.	Completed
ECS-L4-11216	C-CSS-30700 The Registry Service shall be capable of storing subsetting options for any ECS collection.	Completed
ECS-L4-11217	C-CSS-30710 The Registry Service shall be capable of storing subsetting options for ECS collections that support to the 'Interface Control Document for ECS Interfaces That Support External Subsetters Located at DAACs', ECS Project document number 209-CD-036-001 and which conform to the Interface Control Document Between EOSDIS Core Systems (ECS) and the Version 0 System for Interoperability', ESDIS document number 505-41-30.	Completed
ECS-L4-11218	C-CSS-30720 The Registry Service shall provide the capability to update subsetting options for an ECS Collection specified by shortname/version.	Completed
ECS-L4-11219	C-CSS-30730 The Registry Service shall provide capabilities to retrieve subsetting options including subsetter location information for an ECS Collection by ESDT shortname/version.	Completed
ECS-L4-11220	C-CSS-30740 The Registry Service shall be capable of storing location information for each External Subsetter.	Completed
ECS-L4-11221	C-CSS-30750 The Registry Service shall provide the capability to update location information for a specified external subsetter.	Completed
ECS-L4-11222	C-CSS-30760 The Registry Service shall be capable of supporting 3 or more External Subsetters.	Completed
ECS-L4-11223	C-CSS-30770 The Registry Service shall be capable of storing multiple ASTER On-Demand processing options for each of multiple versions of the ASTER L1A or L1B collections.	Completed
ECS-L4-11224	C-CSS-30780 The Registry Service shall provide capabilities to retrieve ASTER On-Demand processing options information for ASTER L1A or ASTER L1B by ESDT shortname/version.	Completed
ECS-L4-11225	C-CSS-40000 The SBSRV shall detect duplicate event triggers	Completed
ECS-L4-11226	C-CSS-40005 The SBSRV shall prevent duplication of event notifications and actions associated with an event trigger.	Completed
ECS-L4-11227	C-CSS-40010 The Subscription Service shall accept Subscription Requests that specify an action to be taken and an event to initiate the action	Completed
ECS-L4-11228	C-CSS-40020 The SBSRV shall persistently store subscriptions and actions associated with an event trigger to be used when SBSRV is started warm.	Completed
ECS-L4-11229	C-CSS-40030 The SBSRV shall delete subscriptions and actions from the warm-restart tables as they are processed.	Completed
ECS-L4-11230	C-CSS-40035 The SBSRV shall access the persistent subscription and action tables during a warm restart.	Completed
ECS-L4-11231	C-CSS-40040 The Subscription Service shall accept Subscription Requests for time interval events which are limited to daily, weekly, or monthly.	Completed
ECS-L4-11232	C-CSS-40050 The SBSRV shall allow an operator to list the actions and trigger information in the warm restart action table.	Completed
ECS-L4-11233	C-CSS-40055 The SBSRV shall allow an operator to delete an action in the warm restart action table.	Completed
ECS-L4-11234	C-CSS-40060 The Subscription Service shall provide the capability to perform the following actions on behalf of the client : data acquire, search, and data production requests.	Completed

ID	Title	Status
ECS-L4-11235	C-CSS-40062 The SBSRV shall allow operators to submit subscriptions that specify an FTP Pull Acquire as an action.	Completed
ECS-L4-11236	C-CSS-40064 The SBSRV shall acquire a granule on behalf of the user for FTP Pull if the subscription specifies FTP Pull Acquire as its action.	Completed
ECS-L4-11237	C-CSS-40070 The SBSRV shall allow an operator to update an action in the warm restart action table.	Completed
ECS-L4-11238	C-CSS-40080 The SBSRV shall retain trigger request information for a configurable amount of time in the trigger information table.	Completed
ECS-L4-11239	C-CSS-40090 The Subscription Service shall process Subscription Requests at the occurrence of the specified event.	Completed
ECS-L4-11240	C-CSS-40100 The Subscription Service shall process the actions defined in the Subscriptions on a first-come, first-serve basis in the event that more than one Subscription is linked to a single event.	Completed
ECS-L4-11241	C-CSS-40110 The Subscription Service shall provide the capability to notify users when data has been archived and is available for access.	Completed
ECS-L4-11242	C-CSS-40120 The Subscription Service shall provide the capability to notify a user that a new version of the data has been archived.	Completed
ECS-L4-11243	C-CSS-40140 The Subscription Service shall provide the capability for Subscriptions to notify users via email or directly to a program interface.	Completed
ECS-L4-11244	C-CSS-40150 The Subscription Service shall provide the capability to bundle notification of discrete events into a single notice to the subscriber based on the following criteria: number of notifications received, time threshold (number of days), and maximum number of notification received.	Completed
ECS-L4-11245	C-CSS-40160 The Subscription Service shall allow subscribers to specify the hour of day to be notified for daily time interval events.	Completed
ECS-L4-11246	C-CSS-40170 The Subscription Service shall accept Subscription Update Requests to update stored Subscriptions by changing the event or the action.	Completed
ECS-L4-11247	C-CSS-40180 The Subscription Service shall provide the capability for authorized users to obtain a list of the stored Subscriptions.	Completed
ECS-L4-11248	C-CSS-40190 The Subscription Service shall provide the capability for authorized users to update the stored Subscriptions by changing the event and/or action.	Completed
ECS-L4-11249	C-CSS-40200 The Subscription Service shall provide the capability for a user client to update their stored Subscriptions by changing the action and/or event.	Completed
ECS-L4-11250	C-CSS-40210 The Subscription Service shall provide the capability for authorized users to delete any stored Subscription.	Completed
ECS-L4-11251	C-CSS-40220 The Subscription Service shall provide the capability for a user to delete their own stored subscriptions.	Completed
ECS-L4-11252	C-CSS-40230 The Subscription Service shall validate that Subscription Update Requests specify a valid Subscription UR and a valid replacement Subscription.	Completed
ECS-L4-11253	C-CSS-40260 The Subscription Service shall periodically report on new events for timer-based Subscriptions.	Completed
ECS-L4-11254	C-CSS-40270 The Subscription Service shall accept requests from subscribers to submit new subscriptions.	Completed
ECS-L4-11255	C-CSS-40272 The Subscription Service shall accept requests from subscribers to update existing subscriptions.	Completed
ECS-L4-11256	C-CSS-40274 The Subscription Service shall accept requests from subscribers to cancel existing subscriptions.	Completed

ID	Title	Status
ECS-L4-11257	C-CSS-40276 The Subscription Service shall accept a command from the SDSRV CI to replace an event when an ESDT is updated by adding additional qualifiers to a previously registered event	Completed
ECS-L4-11258	C-CSS-40277 The Subscription Service shall be able to re-execute a replacement command whether or not a previous replacement command succeeded or failed.	Completed
ECS-L4-11259	C-CSS-40278 The Subscription Service shall return failure notification to the SDSRV CI if an event update is not successful.	Completed
ECS-L4-11260	C-CSS-40279 The Subscription Service shall pass replace event information in an ADSRV CI advertisement, using the ADSRV CI delete and insert interfaces .	Completed
ECS-L4-11261	C-CSS-40280 The Subscription Service shall accept requests from event producers to register new events.	Completed
ECS-L4-11262	C-CSS-40281 The Subscription Service shall accept and process advertisement failure notification from the ADSRV CI for ADSRV CI delete and insert interfaces.	Completed
ECS-L4-11263	C-CSS-40283 The Subscription Service shall preserve any existing subscriptions against events being replaced.	Completed
ECS-L4-11264	C-CSS-40284 The Subscription Service shall accept requests from event producers to cancel registered events.	Completed
ECS-L4-11265	C-CSS-40285 The Subscription Service shall treat a request to insert an event as a request to replace the event if the event already exists	Completed
ECS-L4-11266	C-CSS-40286 The Subscription Service shall accept requests from event producers to trigger registered events.	Completed
ECS-L4-11267	C-CSS-40290 The Subscription Service shall provide the capability to notify a subscriber via an inter-process communication mechanism when the action specified by the subscriber has been taken.	Completed
ECS-L4-11268	C-CSS-40300 The Subscription Service shall provide the capability to notify subscriber via email upon occurrence of the event if no action has been specified.	Completed
ECS-L4-11269	C-CSS-40310 The Subscription Service shall provide the capability to notify a subscriber via an inter-process communication mechanism upon occurrence of an event if no action has been specified.	Completed
ECS-L4-11270	C-CSS-40320 The Subscription Service shall allow subscriber to specify the day of week to be notified for weekly time interval events.	Completed
ECS-L4-11271	C-CSS-40330 The Subscription Service shall allow subscriber to specify the day of month to be notified for monthly time interval events.	Completed
ECS-L4-11272	C-CSS-40340 The Subscription Service shall provide the capability for authorized users to delete all stored Subscription of a user	Completed
ECS-L4-11273	C-CSS-40350 The Subscription Service shall allow events to be triggered asynchronously.	Completed
ECS-L4-11274	C-CSS-40360 The Subscription Service shall provide acknowledgment of receipt of a request after the request is submitted.	Completed
ECS-L4-11275	C-CSS-40370 The Subscription Service shall provide a mechanism to obtain state of the request (pending/in progress/completed)	Completed
ECS-L4-11276	C-CSS-40380 The Subscription Service shall provide a mechanism to obtain the operation status upon completion. (succeeded/failed)	Completed
ECS-L4-11277	C-CSS-40390 The Subscription Service shall provide a mechanism that allows the Subscription Service to be restarted and any requests that were in progress be restarted	Completed
ECS-L4-11278	C-CSS-40400 The Subscription Service shall allow subscribers to qualify a subscribable event based on a set of attributes specified by the event producer.	Completed

ID	Title	Status
ECS-L4-11279	C-CSS-40410 The Subscription Service shall provide the capability to store subscriptions and event types persistently.	Completed
ECS-L4-11280	C-CSS-40420 The SBSRV shall validate upon submission of a subscription that the subscription references a user ID associated with a MSS user profile.	Completed
ECS-L4-11281	C-CSS-40425 The SBSRV shall pass a valid user profile ID of the user on whose behalf it is submitting an ACQUIRE request to the SDSRV CI along with the request.	Completed
ECS-L4-11282	C-CSS-40430 The Subscription Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11283	C-CSS-40500 The SBSRV shall provide an interface to the operator for the selection of distribution options for a product order, using information in the ECS Configuration Registry.	Completed
ECS-L4-11284	C-CSS-46000 The UR mechanism shall allow clients to access ECS object instances, without actually having the instance by providing each object instance with it's own UR.	Completed
ECS-L4-11285	C-CSS-46010 The UR mechanism shall support location independence of the object instance	Completed
ECS-L4-11286	C-CSS-46020 The UR mechanism shall support protocol/technology independence.	Completed
ECS-L4-11287	C-CSS-46030 The UR mechanism shall support multiple redundant instances for a UR.	Completed
ECS-L4-11288	C-CSS-46040 The UR mechanism shall provide a way for an external entity, like a person, or an office automation package, to transport the mechanism.	Completed
ECS-L4-11289	C-CSS-46050 The UR mechanism shall provide some human readable information about the object in the external representation.	Completed
ECS-L4-11290	C-CSS-46060 The UR mechanism shall make sure that the external representation is validated so that erroneous ECS object instance are not created.	Completed
ECS-L4-11291	C-CSS-46070 The UR mechanism shall support clients knowing UR type and clients learning UR type.	Completed
ECS-L4-11292	C-CSS-46080 The UR mechanism shall allow a client to have a UR for an encapsulated abstract base class.	Completed
ECS-L4-11293	C-CSS-46090 The UR mechanism shall allow additional concrete specializations of abstract base class to be added without client modification.	Completed
ECS-L4-11393	C-CSS-60300 The CSS File Access Service shall provide transparent access to remote files.	Completed
ECS-L4-11394	C-CSS-60310 The CSS File Access Service shall support access control for the remote files.	Completed
ECS-L4-11395	C-CSS-60320 The CSS File Access Service shall provide location independent naming for the remote files.	Completed
ECS-L4-11396	C-CSS-60330 The CSS File Access Service shall provide uninterrupted file access via distributed file system access in the event of single failure of the server.	Completed
ECS-L4-11397	C-CSS-60340 The CSS File Access Service shall guarantee the accessed file to be in its most recent version.	Completed
ECS-L4-11398	C-CSS-60350 The CSS File Access Service shall provide capability to change directory (cd) on the remote host.	Completed

ID	Title	Status
ECS-L4-11399	C-CSS-60500 The CSS File Access Service shall provide functionality for interactive and non-interactive transfer of files (send and receive) between two host systems.	Completed
ECS-L4-11400	C-CSS-60505 The CSS File Access Service shall provide non-interactive, transparent access to remote files via distributed file system access.	Completed
ECS-L4-11401	C-CSS-60510 The CSS File Access Service shall be capable of transferring ASCII and binary files.	Completed
ECS-L4-11402	C-CSS-60520 The CSS File Access Service shall support the File Transfer Protocol (FTP).	Completed
ECS-L4-11403	C-CSS-60530 The CSS File Access Service shall support the kerberized version of File Transfer Protocol (kftp) for secured file transfers.	Completed
ECS-L4-11404	C-CSS-60600 The CSS File Access Service shall provide connection oriented operation for file transfers.	Completed
ECS-L4-11405	C-CSS-60610 The CSS File Access Service shall allow selection of the file type (ASCII or binary) when utilizing the ftp access service.	Completed
ECS-L4-11406	C-CSS-60620 The CSS File Access Service shall support proxy mode of operation which enables transfer of files between two remote hosts.	Completed
ECS-L4-11407	C-CSS-60630 The CSS File Access Service shall provide capability to list remote files	Completed
ECS-L4-11408	C-CSS-60640 The CSS File Access Service shall support wildcards in files on the remote host.	Completed
ECS-L4-11409	C-CSS-60800 The CSS File Access Service shall provide an option for scheduling file transfers in a batch mode.	Completed
ECS-L4-11410	C-CSS-60805 FTP File Access Service shall be available via an API or in interactive mode.	Completed
ECS-L4-11411	C-CSS-60810 The CSS File Access Service shall provide file transfer management of non-interactive transfer services by logging results of the non-interactive operations	Completed
ECS-L4-11412	C-CSS-60820 The CSS File Access Service shall provide file transfer management of FTP transfers by providing non-interactive API option for an application to generate events if a scheduled operation fails.	Completed
ECS-L4-11413	C-CSS-60830 FTP file access service shall have an API provided that supports inclusion of a scheduled start time for the transfer(s).	Completed
ECS-L4-11414	C-CSS-60900 The CSS File Access Service shall provide an API which allows applications to transfer files.	Completed
ECS-L4-11415	C-CSS-60910 The CSS File Access Service shall allow for file type selection (ASCII or Binary).	Completed
ECS-L4-11416	C-CSS-60920 The CSS File Access Service shall accept authentication information for file transfers.	Completed
ECS-L4-11417	C-CSS-60950 The File Access Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11418	C-CSS-61010 The CSS Electronic Mail Service shall interoperate and exchange messages with external mail systems based on SMTP and X.400 protocols.	Completed
ECS-L4-11419	C-CSS-61020 The CSS Electronic Mail Service shall be capable of sending and receiving the Multi-purpose Internet Mail Extensions (MIME) messages.	Completed
ECS-L4-11420	C-CSS-61040 The CSS Electronic Mail Service shall provide translation between SMTP and X.400 protocol.	Completed
ECS-L4-11421	C-CSS-61050 The CSS Electronic Mail Service shall be accessible in interactive mode.	Completed

ID	Title	Status
ECS-L4-11422	C-CSS-61060 The CSS Electronic Mail Service shall be accessible in non-interactive mode via API.	Completed
ECS-L4-11423	C-CSS-61070 The CSS Electronic Mail Service shall provide store and forward services capable of supporting mail systems based on SMTP and X.400.	Completed
ECS-L4-11424	C-CSS-61290 The CSS Electronic Mail Service shall provide functionality to send reply for a received message to a. the author b. to all destinations addressed in the incoming message MailTool	Completed
ECS-L4-11425	C-CSS-61300 CSS Electronic Mail Service shall be provided with API and GUI implementations.	Completed
ECS-L4-11426	C-CSS-61310 The CSS Electronic Mail Service shall provide a MAILBOX where all incoming messages for operators will be stored.	Completed
ECS-L4-11427	C-CSS-61320 The CSS Electronic Mail Service shall provide operator defined folders to store messages for long term archive.	Completed
ECS-L4-11428	C-CSS-61330 The CSS Electronic Mail Service shall allow copying and/or moving messages from the MAILBOX to the operator specified folders.	Completed
ECS-L4-11429	C-CSS-61360 The CSS Electronic Mail Service shall be capable of showing a summary of all messages in the MAILBOX or in a folder which minimally contains: a. title/subject of the message b. name of the author c. date/time of the message origination	Completed
ECS-L4-11430	C-CSS-61370 The CSS Electronic Mail Service shall provide an editor to compose a message.	Completed
ECS-L4-11431	C-CSS-61380 The CSS Electronic Mail Service shall provide a title/subject field for a message.	Completed
ECS-L4-11432	C-CSS-61390 The CSS Electronic Mail Service shall allow a message to be sent to multiple destinations.	Completed
ECS-L4-11433	C-CSS-61397 The CSS Electronic Mail Service shall provide on-line help functionality.	Completed
ECS-L4-11434	C-CSS-61400 The CSS Electronic Mail Service shall allow destinations of the following types: a. a single user b. a position which may be managed by one or many operators c. a site which may consist of several operators.	Completed
ECS-L4-11435	C-CSS-61410 The CSS Electronic Mail Service shall provide a capability to maintain public mailing lists (each list may contain multiple destination) which are accessible to all operators.	Completed
ECS-L4-11436	C-CSS-61420 The CSS Electronic Mail Service shall provide a capability to maintain private mailing lists (each list may contain multiple destination) for individual operators.	Completed
ECS-L4-11437	C-CSS-61440 The CSS Electronic Mail Service shall allow discarding message(s) from the MAILBOX without saving.	Completed
ECS-L4-11438	C-CSS-61450 The CSS Electronic Mail Service shall have the capability to forward a message.	Completed
ECS-L4-11439	C-CSS-61460 The CSS Electronic Mail Service shall allow cut/copy/paste/delete/undo operations in the editor.	Completed
ECS-L4-11440	C-CSS-61470 The CSS Electronic Mail Service shall provide navigation methods to go the next or previous message in the MAILBOX or selected folder.	Completed
ECS-L4-11441	C-CSS-61490 The CSS Electronic Mail Service shall provide the capability to search for keywords in messages.	Completed
ECS-L4-11442	C-CSS-61500 The CSS Electronic Mail Service shall provide the capability to search the MAILBOX or a folder for keywords in the title text.	Completed
ECS-L4-11443	C-CSS-61510 The CSS Electronic Mail Service shall provide the capability to search the MAILBOX or folders for a specific author.	Completed

ID	Title	Status
ECS-L4-11444	C-CSS-61800 The CSS Electronic Mail Service shall provide the capability to send an electronic mail message non-interactively from an application.	Completed
ECS-L4-11445	C-CSS-61810 The CSS Electronic Mail Service shall allow attaching multiple text or binary files to the mail message.	Completed
ECS-L4-11446	C-CSS-61820 The CSS Electronic Mail Service shall accept a file name as input for the message text.	Completed
ECS-L4-11447	C-CSS-61840 The CSS Electronic Mail Service shall be capable of sending a message to multiple destinations.	Completed
ECS-L4-11448	C-CSS-61850 The CSS Electronic Mail Service shall accept mailing lists as valid destinations.	Completed
ECS-L4-11449	C-CSS-61860 The Electronic Mail Service shall ensure that the following calendar transitions are handled completely and accurately: a. New Year b. New Decade c. New Century d. Leap Year.	Completed
ECS-L4-11450	C-CSS-61870 The Email Service shall accept attribute-value pairs and optional text to be inserted in email notification	Completed
ECS-L4-11451	C-CSS-61880 The Email Service shall read text from file(s)	Completed
ECS-L4-11477	C-CSS-63000 The CSS Virtual Terminal shall provide a virtual device which hides the physical terminal characteristics and handling conventions from both the operator and the server host.	Completed
ECS-L4-11478	C-CSS-63010 The CSS Virtual Terminal shall provide means to enhance characteristics of the basic virtual device by mutual agreement between the two communicating parties (option negotiations).	Completed
ECS-L4-11479	C-CSS-63020 The CSS Virtual Terminal shall be based on industry standard and accepted protocols (telnet and ktelnet).	Completed
ECS-L4-11480	C-CSS-63040 The CSS Virtual Terminal shall provide guest access to non-registered users to log into the ECS guest server.	Completed
ECS-L4-11481	C-CSS-63050 The CSS Virtual Terminal shall support kerberized version of the telnet protocol for secure authentication of users.	Completed
ECS-L4-11482	C-CSS-63060 The CSS Virtual Terminal shall support X applications.	Completed
ECS-L4-11483	C-CSS-64000 The CSS Dial-Up Access Service shall provide remote Internet access.	Completed
ECS-L4-11484	C-CSS-64005 The CSS gateway shall perform a protocol conversion between external and ECS protocols.	Completed
ECS-L4-11485	C-CSS-64010 The CSS gateway shall route requests received from external providers based on request type.	Completed
ECS-L4-11486	C-CSS-64020 The CSS gateway shall log all communication errors	Completed
ECS-L4-11487	C-CSS-64030 The CSS gateway shall log all authentication requests	Completed
ECS-L4-11489	C-CSS-64060 The CSS gateway shall reject requests from a provider unless a valid authentication request is received	Completed
ECS-L4-11490	C-CSS-64070 The CSS gateway shall be capable of listening at a configurable port number	Completed
ECS-L4-11491	C-CSS-64080 The CSS gateway (a version of) shall be capable of obtaining a well known Kerberos identity with which to encrypt the username and password if needed	Completed
ECS-L4-11492	C-CSS-64090 The CSS gateway (a version of) shall be capable of encrypting or providing data integrity (as provided for by Kerberos) as desired by the client	Completed
ECS-L4-11493	C-CSS-64100 The CSS gateway shall place in network byte order all messages that it, itself, composes for sending over the network.	Completed
ECS-L4-11494	C-CSS-64110 The CSS gateway shall be capable of receiving control information from both the external entities and the ECS servers	Completed

ID	Title	Status
ECS-L4-11495	C-CSS-64120 The CSS gateway shall provide the capability to exit from the process upon receiving a shutdown control message from the internal ECS servers	Completed
ECS-L4-11496	C-CSS-64140 The generic gateway utility shall support either one way or two way internet socket message communication.	Completed
ECS-L4-11497	C-CSS-64150 The generic gateway utility shall support ECS standard error logging.	Completed
ECS-L4-11498	C-CSS-64160 The generic gateway utility shall be able to listen at a configurable port number.	Completed
ECS-L4-11614	C-CSS-80010 A standalone checksum utility shall be provided to compute an ECS checksum	Completed
ECS-L4-11615	C-CSS-80020 The standalone checksum utility shall be provided for the following operating systems: a. Solaris b. Irix c. Windows 2000/XP d. Linux.	Completed
ECS-L4-11616	S-CSS-30635 The ECS Registry shall permit the configuration of generic media options.	Completed
ECS-L4-11618	S-CSS-30637 The ECS Registry shall retrieve the media options that have been configured for the requesting ECS component; and if none have been specifically configured for that component, the generic media options.	Completed
ECS-L4-11619	S-CSS-40502 The SBSRV GUI shall not offer physical media as a distribution option.	Completed

2.2 DMS

These are the completed ECS requirements for the DMS subsystem (Data Management Subsystem). The DMS provides interoperability between the Common Metadata Repository (CMR) and the ECS.

ID	Title	Status
ECS-L4-11621	C-DMS-39010 The V0 Gateway shall submit all data distribution requests to the Order Management Service, except those that need to be routed to DORRAN and external subsetters, i.e., all data distribution requests currently submitted to the SDSRV or PDS.	Completed
ECS-L4-11622	C-DMS-39030 The V0 Gateway shall not retry submission of a request if the Order Management Service returns an error.	Completed
ECS-L4-11623	C-DMS-39040 The V0 Gateway shall forward errors returned by the Order Management Service to its clients, with explanatory comments that describe the corrective actions the user should take.	Completed
ECS-L4-11950	S-DMS-50200 The EWOC shall provide a SOAP web service to accept orders from ECHO. [Iteration 1]	Completed
ECS-L4-11951	S-DMS-50205 The EWOC order web service will conform to the WSDL definition of the Submit portion of the ECHO 9.0 Order Fulfillment API. [Iteration 2]	Completed
ECS-L4-11952	S-DMS-50210 The EWOC shall provide a SOAP web client to forward elements of orders that require external subsetting or production to the appropriate External Processor web service. [Iteration 4]	Completed
ECS-L4-11953	S-DMS-50215 The EWOC shall submit external processor orders conformant to the 'Submit' portion of the ECHO 9.0 Order Fulfillment API. [Iteration 4]	Completed

ID	Title	Status
ECS-L4-11954	S-DMS-50220 The EWOC shall be able to determine the end point of external processor web services dynamically on a per-order item basis as described in the ESDIS document TBD 423-45-03 Interface Control Document for ECS ECHO WSDL Order Component (EWOC) and External Processing Systems Co-located at the DAACs.	Completed
ECS-L4-11955	S-DMS-50225 The EWOC shall be able to determine if a 'consider processing options' request bundling policy is required of an order as described in the ESDIS document TBD 423-45-03 Interface Control Document for ECS ECHO WSDL Order Component (EWOC) and External Processing Systems Co-located at the DAACs. [Iteration 4]	Completed
ECS-L4-11956	S-DMS-50230 The EWOC shall provide a SOAP web service to accept order status updates from one or more external processors. [Iteration 3]	Completed
ECS-L4-11957	S-DMS-50240 The EWOC shall send to the external processor an acknowledgement of the receipt of an order status update, with an indication of successful or unsuccessful validation of the status update. [Iteration 3]	Completed
ECS-L4-11959	S-DMS-50260 The EWOC shall provide a SOAP web client to relate the terminal status of orders to ECHO. [Iteration 3]	Completed
ECS-L4-11960	S-DMS-50270 The EWOC shall submit order status updates to ECHO no later than 5 minutes after the last line item in an order has reached a terminal state. [Iteration 3]	Completed
ECS-L4-11961	S-DMS-50280 The EWOC shall submit order status updates to ECHO which are conformant to the WSDL definition of the 'Close Provider Order' portion of the ECHO 9.0 Order Processing Service API. [Iteration 3]	Completed
ECS-L4-11962	S-DMS-50290 The EWOC shall include the FTP PULL URL in the terminal status message it sends to ECHO, for those line items that have been distributed via FTP PULL by ECS. [ECHO 10.0 - It is TBD by the ECHO 10.0 schedule whether the interface definition will be available in time for Iteration 4]	Completed
ECS-L4-11963	S-DMS-50300 The EWOC shall have the capability to process ECHO Order Fulfillment Web Service Submit Requests. [Iteration 2]	Completed
ECS-L4-11964	S-DMS-50310 The EWOC shall receive Submit Requests from clients conforming to the ECHO Order Fulfillment Web Service interface definition. [Iteration 2]	Completed
ECS-L4-11965	S-DMS-50320 The EWOC shall have the capability to send Submit Responses to a client conforming to the ECHO Order Fulfillment Web Service interface definition. [Iteration 2]	Completed
ECS-L4-11966	S-DMS-50330 The EWOC shall send a Submit Response back to ECHO within 60 seconds of receiving the ECHO Order Fulfillment Web Service Submit request. [Iteration 3]	Completed
ECS-L4-11967	S-DMS-50340 The EWOC shall provide the capability to translate ECHO Order Fulfillment Web Service protocols into ECS system protocols. [Iteration 2]	Completed
ECS-L4-11968	S-DMS-50350 The EWOC shall provide the capability to translate ECS system protocols into ECHO Order Fulfillment Web Service protocols. [Iteration 2]	Completed
ECS-L4-11969	S-DMS-50360 The EWOC shall provide the capability to receive Submit Requests from External Processor systems, in conformance with protocols defined in the ECHO Order Fulfillment Web Service interface definition. [Iteration 4]	Completed
ECS-L4-11970	S-DMS-50370 The EWOC shall support the following media types: a. CD-ROM b. DLT c. DVD d. Ftp Pull e. Ftp Push [Iteration 2]	Completed

ID	Title	Status
ECS-L4-11971	S-DMS-50380 The EWOC shall support the tarfile format for the DLT media type. [Iteration 2]	Completed
ECS-L4-11972	S-DMS-50390 The EWOC shall support the following formats for the CD-ROM and DVD media types: a. ISO 9660 b. Joliet c. Long Joliet d. UDF e. Rockridge [Iteration 2]	Completed
ECS-L4-11973	S-DMS-50400 The EWOC shall create an MSS Order and one or more Request objects for a Submit Request submitted by a client. [Iteration 2]	Completed
ECS-L4-11974	S-DMS-50410 The EWOC shall submit all data distribution requests to the OMS for registration. [Iteration 2]	Completed
ECS-L4-11975	S-DMS-50420 The EWOC shall accept error responses from the OMS for request registration errors. [Iteration 2] [Note: A request that cannot be registered with OMS will be rejected. Errors that prevent registration include invalid ESDT reference, invalid granule ID, and OMS database errors.]	Completed
ECS-L4-11976	S-DMS-50430 The EWOC shall not retry submission of a request if the OMS returns an error during registration of a request. [Iteration 2]	Completed
ECS-L4-11977	S-DMS-50440 The EWOC shall forward errors returned by the OMS to its clients, with explanatory comments that describe the corrective actions the user should take, and include the appropriate error information in the Submit Response message, in accordance with the ECHO Order Fulfillment Web Service interface definition. [Iteration 2]	Completed
ECS-L4-11978	S-DMS-50450 The EWOC shall return an error to the user when it discovers, via interaction with the OMS, that the granule identified in a user request does not exist in the ECS inventory. [Iteration 2]	Completed
ECS-L4-11979	S-DMS-50460 The EWOC shall support multiple concurrent requests. [Iteration 2]	Completed
ECS-L4-11980	S-DMS-50470 The EWOC shall access data only for the mode in which the application is configured. [Iteration 2]	Completed
ECS-L4-11981	S-DMS-50480 The EWOC shall be capable of simultaneous execution in different modes on the same machine. [Iteration 2]	Completed
ECS-L4-11982	S-DMS-50490 The EWOC shall be capable of simultaneous execution in different modes on different machines. [Iteration 2]	Completed
ECS-L4-11983	S-DMS-50500 The EWOC shall accept a specific mode at startup. [Iteration 2]	Completed
ECS-L4-11984	S-DMS-50510 The EWOC shall log the initiation of each request. [Iteration 2]	Completed
ECS-L4-11985	S-DMS-50520 The EWOC shall add log entries pertaining to start up. [Iteration 2]	Completed
ECS-L4-11986	S-DMS-50530 The EWOC shall add log entries pertaining to shut down. [Iteration 2]	Completed
ECS-L4-11987	S-DMS-50540 The EWOC shall log a message upon successful completion of each request. [Iteration 2]	Completed
ECS-L4-11988	S-DMS-50550 The EWOC shall log all errors. [Iteration 2]	Completed
ECS-L4-11989	S-DMS-50600 The EWOC shall register requests for external processing with the OMS. [Iteration 4]	Completed
ECS-L4-11990	S-DMS-50610 The EWOC shall identify the external processor that needs to process an external processing request when registering such a request to the OMS. [Iteration 4]	Completed
ECS-L4-11992	S-DMS-50620 The EWOC shall process the order items of a Submit Request that contain external processing specifications to determine which entities, an External Processor or OMS, the order items should be directed to. Consequently, the EWOC may direct portions of the Submit Request to OMS and/or one or more external processors. [Iteration 4]	Completed

ID	Title	Status
ECS-L4-11995	S-DMS-50680 The EWOC shall, in the event of receiving a submit request requiring external processing, send external processing Submit Request messages to External Processing systems in conformance with protocols defined in the ECHO Order Fulfillment Web Service interface definition. [Iteration 4]	Completed
ECS-L4-11996	S-DMS-50690 The EWOC shall be able to interface with three or more external processors. [Iteration 4]	Completed
ECS-L4-12000	S-DMS-50750 The EWOC shall convey a success status to ECHO when a Submit request results in the successful placement of all subordinate requests with OMS and /or External Subsetters. [Iteration 4]	Completed
ECS-L4-12001	S-DMS-50760 The EWOC shall convey a failed status to ECHO when a Submit request results in the failure to place any subordinate requests with OMS and/or External Subsetters. [Iteration 4]	Completed
ECS-L4-12002	S-DMS-50770 The EWOC shall convey success status to ECHO when a Submit request results in the immediate failure of one or more (but not all) subordinate requests. [Iteration 4]	Completed
ECS-L4-12004	S-DMS-50780 The EWOC shall provide a mechanism for ECHO clients to allow users to order products that can be processed by external processors and distributed by the OMS. [Iteration 4]	Completed
ECS-L4-12005	S-DMS-50790 The EWOC shall supply the OMS with duplicate request checking information when placing a request if configured to do so. That information consists of the checksum of a concatenation of the following information, 1. the contact email of the order 2. the user string of the request (if the media type is ftp push) 3. a list of granule ids [Iteration 4]	Completed
ECS-L4-12006	S-DMS-50810 The EWOC CI shall accept order options from ECHO to include QA and/or PH and/or Browse for a granule in the order in accordance with the Interface Control Document between EOSDIS Core System (ECS) and EOS Clearinghouse (ECHO) for Metadata Inventory and Ordering. ESDIS document 423-45-02.	Completed
ECS-L4-12007	S-DMS-50811 The EWOC CI shall accept order options from ECHO to include HDF4 archive maps for a granule in the order in accordance with the Interface Control Document between EOSDIS Core System (ECS) and EOS Clearinghouse (ECHO) for Metadata Inventory and Ordering. ESDIS document 423-45-02.	Completed
ECS-L4-12008	S-DMS-50820 The EWOC CI shall include the associated QA and/or PH and/or Browse granules in the order submission to OMS in accordance with the ECHO supplied order options.	Completed
ECS-L4-12009	S-DMS-50821 The EWOC CI shall include the associated HDF4 archive map granule in the order submission to OMS in accordance with the ECHO supplied order options.	Completed
ECS-L4-12010	S-DMS-50830 The EWOC CI shall include the associated QA and/or PH and/or Browse granules in the checksum computed for duplicate request checking. [NOTE: This extends but does not replace S-DMS-50790.]	Completed
ECS-L4-12011	S-DMS-50831 The EWOC CI shall include the associated HDF4 map granules in the checksum computed for duplicate request checking.	Completed
ECS-L4-12012	S-DMS-50840 The EWOC CI shall reject orders for granules that include order options for both external processing and distribution of associated QA and/or PH and/or Browse.	Completed
ECS-L4-12013	S-DMS-50841 The EWOC CI shall reject requests for granules that include order options for both external processing and distribution of associated HDF4 archive map granules.	Completed

ID	Title	Status
ECS-L4-12014	S-DMS-50842 The EWOC CI shall not consider it an error if an ordered science granule does not have an HDF4 archive association even if the corresponding order option was specified for that granule.	Completed
ECS-L4-12015	S-DMS-50850 The DPL CI shall include FTP accesses to QA and PH granules in the public Data Pool in the Data Pool FTP download information it exports to EMS.	Completed
ECS-L4-12016	S-DMS-50860 The EMS Dataset Extraction Utility shall include the distribution of QA and PH granules in the information it exports to EMS.	Completed
ECS-L4-12019	S-DMS-50881 The EWOC shall accept orders that require SDPS mediated processing services from ECHO for submission to OMS. [NOTE: This extends existing EWOC requirements for accepting processing request for HEG and external subsetters/processors.]	Completed
ECS-L4-12020	S-DMS-50882 The EWOC shall include requests for SDPS mediated processing services in the distribution requests it submits to OMS. [NOTE: This extends existing EWOC requirements for accepting processing request for HEG and external subsetters/processors.]	Completed
ECS-L4-12021	S-DMS-50883 The EWOC shall consider all requests for SDPS mediated processing services as being serviced by a single processing component, that is, it shall not break them up further, e.g., by processing options or the DAAC processing service that will be invoked by OMS to satisfy the processing instructions associated with a granule. [NOTE: This extends existing EWOC requirements for accepting processing request for HEG and external subsetters/processors.]	Completed
ECS-L4-12023	S-DMS-50900 The EWOC shall update the order status of the external processing request in MSS, using the order status update received from the external processor. [NOTE: This replaces S-DMS-50250. See NCR 8049131.]	Completed
ECS-L4-12024	S-DMS-50910 The EWOC shall update the order tracking status of requests based on the response from the external processor. The status will be updated to Pending if the external processing service accepted the request and to Aborted if the external processing service rejected the request. [NOTE: This replaces S-DMS-50615. See NCR 8049131.]	Completed
ECS-L4-12025	S-DMS-50920 The EWOC shall generate new order tracking request entries consisting of a grouping of order items based on the following rules: All non-processed items with common physical media type and format will be bundled into a single ECS Request. All non-processed items of media type ftp pull and common media format will be bundled into a single ECS Request All non-processed items in an ECS Order of media type ftp push and the following identical media options of user name, password, hostname, port and destination directory will be bundled into a single ECS Request. All items in an ECS Order requiring processing by the same external processor and that have common media options (see clauses (2) and (3)) will be bundled if, The submit message specifies a 'consider processing options' request bundling policy and they share identical processing options. The submit message does not specify a 'consider processing options' request bundling policy. [NOTE: This replaces S-DMS-50640. See NCR 8049131.]	Completed
ECS-L4-12026	S-DMS-50930 The EWOC shall include the orderID and requestID in the Submit Request message sent to the external processor as described in the ESDIS document TBD 423-45-03 Interface Control Document for ECS ECHO WSDL Order Component (EWOC) and External Processing Systems Co-located at the DAACs. [NOTE: This replaces S-DMS-50670. See NCR 8049131.]	Completed

ID	Title	Status
ECS-L4-12027	S-DMS-50940 The EWOC shall inform the OMS that requests associated with Submit Requests containing external processing options are external processing requests. [NOTE: This replaces S-DMS-50720. See NCR 8049131.]	Completed
ECS-L4-12028	S-DMS-50950 The EWOC shall, if all requests within an order are of type 'external processing', inform the OMS that the order is an external processing order. [NOTE: This replaces S-DMS-50730. See NCR 8049131.]	Completed
ECS-L4-12029	S-DMS-50960 The EWOC shall provide the MSS order identification as part of a submit request to an external processor. [NOTE: This replaces S-DMS-50740. See NCR 8049131.]	Completed
ECS-L4-12030	S-DMS-50970 The EWOC shall, in the event of a partial success of a Submit request, invoke the Close Provider Order method of the ECHO Order Processing Service API for each ECS request that failed; the Close Provider Order invocation will detail the granules within that request that failed and the nature of the failure. [NOTE: This replaces S-DMS-50775. See NCR 8049131.]	Completed
ECS-L4-12032	S-DMS-51020 The EMS Dataset Extraction Utility shall maintain a record of the status and starting/ending reporting period of each execution.	Completed
ECS-L4-12033	S-DMS-51030 The EMS Dataset Extraction Utility shall by default generate and export EMS flat file information for a 24-hour period.	Completed
ECS-L4-12034	S-DMS-51040 The EMS Dataset Extraction Utility shall by default use the ending date of the previous reporting period to determine the starting and ending date for the current execution.	Completed
ECS-L4-12035	S-DMS-51050 The EMS Dataset Extraction Utility shall provide the operator the capability to override the default 24-hour period execution with an alternative starting and ending date.	Completed
ECS-L4-12036	S-DMS-51060 The EMS Dataset Extraction Utility shall by default generate and export each of the following types of flat files per execution: User profile attributes Product attribute metadata Product attribute search Data Ingest Data Archive Physical media distribution orders Electronic media distribution orders	Completed
ECS-L4-12037	S-DMS-51070 The EMS Dataset Extraction Utility shall provide the operator the capability to specify a single flat file type for generation and export.	Completed
ECS-L4-12038	S-DMS-51080 The EMS Dataset Extraction Utility shall provide the operator the capability to specify an output directory for the flat files.	Completed
ECS-L4-12039	S-DMS-51090 The EMS Dataset Extraction Utility shall apply filenames that uniquely distinguish each flat file based on the following: Ending date for the reporting period DAAC name EMS flat file type	Completed
ECS-L4-12040	S-DMS-51100 The EMS Dataset Extraction Utility shall rename a flat file if it has been resent to the EMS.	Completed
ECS-L4-12041	S-DMS-60410 The DMGHW CI elements and components shall include the on-line (operational mode) and off-line (test mode) fault detection and isolation capabilities required to achieve the specified operational availability requirements.	Completed
ECS-L4-12042	S-DMS-60420 The maximum down time of the DMGHW CI shall not exceed twice the required MDT in 99 percent of failure occurrences.	Completed
ECS-L4-12043	S-DMS-60500 The DMGHW CI shall accommodate 100% expansion in processing and storage capacity without major changes to the hardware and software design.	Completed

2.3 Data Access

These are the completed ECS requirements for the Data Access (DA) subsystem. DA provides data transformation services support for end users. There are currently no Data Access requirements in the Completed set.

Draft

Appendix A Abbreviations and Acronyms

These are the abbreviations and acronyms used in the SDPS requirements Volumes 1-10. This section is replicated in all volumes.

ACL	access control list
ACVU	AIM checksum verification utility
ADC	Affiliated Data Center
ADEOS	Advanced Earth Observing Satellite
AIM	Archive Inventory Management
AIRS	Atmospheric Infrared Sounder
AMFS	Archival Management and Storage System File System
AMSR	Advanced Microwave Scanning Radiometer
ANSI	American National Standards Institute
API	Application Program Interface
APIDs	Application Process Identifiers
APIs	Application Program Interfaces?
ARP	Address Resolution Protocol
ASDC	Atmospheric Science Data Center
ASF	Alaska Satellite Facility
AST_L1A, AST_L1B	ASTER Level 1 A and Level 1 B data types
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
AVG	average
AVN	National Center for Environmental Prediction (NCEP) Aviation model, later renamed to Global Forecast System (GFS)
BGT	Bulk Metadata Generation Tool, also known as BMGT
BIL	Band Interleaved
BMGT	Bulk Metadata Generation Tool
BPI	Bits per inch
BRF	Browse Reference File
BRWS	Browse
BUFR	Binary Universal Form for the Representation of meteorological data
CCB	Configuration Control Board
CCR	Configuration Change Request
CCSDS	Consultative Committee for Space Data Systems
CD	Compact Disc

CFG	Configuration
CI	Configuration Item
CKSUM	refers to a particular algorithm or program to calculate a file checksum
CLS	Client Subsystem
CM	Configuration Management
CMO	Configuration Management Office
CMR	Common Metadata Repository
COTS	Commercial Off-The Shelf (hardware or software)
CPU	Central Processing Unit
CRON	A linux system utility to perform time scheduled executions
CS	Client Server
CSC	Computer Software Component
CSCI	Computer Software Configuration Item
CSDT	Computer Scient Data Type
CSH	C-Shell
CSMS	Communication and Systems Management Segment
CSS	Communications Subsystem
DAAC	Distributed Active Archive Center
DADS	Data Archive and Distribution System
DAR_ID	Data Acquisition Request Identifier
DB	Database
DBID	Database Identifier
DB	Database
DCLI	DDIST (Data Distribution) Command Line Interface
DD	Data Dictionary
DDIST	Data Distribution CSCI
DDR	Detailed Design Review
DEM	Digital Elevation Model
DESKT	Desktop (Computer Software Configuration Item)
DFA	Delete From Archive
DHWM	Data High Water Mark
DIF	Directory Interchange Format
DIPHW	Distribution and Ingest Peripheral HWCI
DN	Delivery Notification
DORRAN	Distributed Ordering, Researching, Reporting, and Accounting Network (at EDC)
DPAD	Data Pool Action Driver

DPCV	Data Pool Checksum Verification Utility
DPIU	Data Pool Insert Utility
DPL	Data Pool
DPLINGST	Data Pool Ingest
DPLINSERT	Data Pool Insert
DPM	Data Pool Maintenance
DRPHW	Data Repository HWCI
DSS	Data Server Subsystem
DTD	Document Type Definition (XML)
DTF	Sony Digital Tape Format Tape cartridge system
DTS	Defect Tracking Subsystem
EBNET	EOSDIS Backbone Network
ECHO	EOS Clearing House
ECI, ECR	Earth Centered Inertial, Earth Centered Rotating
ECNBDB	Spatial Subscription Server database
ECS	Earth Observing System Data and Information Core System
EDC	Earth Resource Observation System Data Center
EDOS	Earth Observing System (EOS) Data and Operations System
EDR	Expedited Data Set Request
EDS	Expedited Data Set
EED	EOSDIS Evolution and Development Project
EGS	EOSDIS Ground System
EMD	EOSDIS Maintenance and Development Project
EMOS	EOS Mission Operations System
EMS	ESDIS Metrics System
EOC	Earth Observation Center (Japan), EOS Operations Center
EOS	Earth Observing System
EOSDIS	Earth Observing System Data and Information System
EPD	External Processor Dispatcher
EPSG	European Petroleum Survey Group
ESDIS	Earth Science Data and Information System
ESDT	Earth Science Data Type
ESG	Earth Science Gateway
ESI	EOSDIS Service Interface
ETE	End to End
EWOC	ECHO WSDL Order Component

FCAPS	Fault, Configuration, Accountability, Performance, and Security
F&PRS	Functional and Performance Requirements Specification
FDDI	Fiber Distributed Data Interface
FDF	Flight Dynamics Facility
FOS	Flight Operations Segment
FSMS	File and Storage Management System
FTP	File Transfer Protocol
FTPD	File Transfer Protocol Daemon
GB	Gigabyte or Gigabit
GBYTE	Gigabyte
GCMD	Global Change Master Directory
GDS	Ground Data System
GEOTIFF	Georeferenced Tagged Image File Format
GFE	Government Furnished Equipment
GIS	Geographical Information System
GLAS	Geoscience Laser Altimeter System
GPS	Global Positioning System
GRIB	Grid in Binary
GSFC	Goddard Space Flight Center
GUI	Graphical User Interface
GZIP	GNU zip
HDF	Hierarchical Data Format
HDF-EOS	an EOS proposed standard for a specialized HDF data format
HEG	HDF-EOS-To-Geotiff Conversion Tool
HIPPI	High Performance Parallel Interface
HIRDLS	High-Resolution Dynamics Limb Sounder
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
HTTPD	Hypertext Transfer Protocol Daemon
HWCI	Hardware Configuration Item
I/O	Input/Output
I&T	Integration and Test
IAS	Image Assessment System
ICD	Interface Control Document
ICLHW	Ingest Client HWCI
ICMP	Internet Control Message Protocol

IDL	Interactive Data Language
ID	Identifier
IEEE	Institute of Electrical and Electronics Engineering
IGS	International Ground Station
IIU	Inventory Insert Utility
IMS	Information Management System
INCI	Internetworking Hardware HWCI
INHCI	Ingest Hardware (Configuration Item)
INHW	Ingest Hardware (Configuration Item)
INS	Ingest Subsystem
IP	Internet Protocol
IR-1	Initial Release 1
IRD	Interface Requirements Document
IRIX	Silicon Graphics version of Unix
ISS	Internetworking Subsystem
IV&V	Independent Verification and Validation
JDT	Java DAR (Data Acquisition Request) Tool
JPEG	Joint Photographic Experts Group image file format
JPG	JPEG file extension
JPL	Jet Propulsion Laboratory
KFTP	Kerberized File Transfer Protocol
LAN	Local Area Network
LARC	Langley Research Center
LAT/LON	Latitude and Longitude
LGID	Local Granule Identifier
LLBOX	Latitude/Longitude Box
LP-DAAC	Land Processes Distributed Active Archive Center
LPS	Landsat 7 Processing System
LSM	Local System Management (network)
LUNs	Logical Unit Numbers
M&O	Maintenance and Operations
MAN	Metropolitan Area Network
MAX	Maximum
MB	Megabyte (10 ⁶)
MB/sec	Megabytes per second
MBITS/SEC	Megabits per second
MBPS	Megabytes per second

MCF	Metadata Configuration File
MD5	Message Digest checksum algorithm number 5
MDT	Maximum Down Time
METC	refers to file containing Collection Metadata
MGS	Map Generation Subsystem
MGU	Map Generation Utility
MISR	Multi-Imaging SpectroRadiometer
MLCI	Management Logistics Configuration Item
MM	Millimeter
MM/DD/YYYY	date code representation for month, day, year
MODAPS	MODIS Adaptive Processing System
MODIS	Moderate Resolution Imaging SpectroRadiometer
MRTG	Multi Router Traffic Grapher
MSEC	Millisecond
MSM	Media Storage Manager (part of Stornext)
MSS	System Management Subsystem
MTMGW	Machine to Machine Gateway
MUTEX	Mutually Exclusive
N/A	Not Applicable/Not Available
NARA	National Archives and Records Administration
NASA	National Aeronautics and Space Administration
NBSRV	Spatial Subscription Server
NCEP	National Centers for Environmental Prediction
NCR	Non-conformance report
NESDIS	National Environmental Satellite, Data, and Information Service (NOAA)
NFS	Network File System
NIST	National Institute of Standards and Technology
NM	Name Server Subsystem
NMC	National Meteorological Center (NOAA)
NMF	Network Management Facility
NOAA	National Oceanic and Atmospheric Administration
NSBRV	Spatial Subscription Server
NSI	NASA Science Internet
NSIDC	National Snow and Ice Data Center
NTP	Network Transport Protocol
OBU	OWS Binding Utility

ODC	Other Data Center
ODL	Object Description Language
OGC	Open GIS Consortium
OLA	On-line Archive
OMS	Order Manager Subsystem
OPS	Operations
ORNL	Oak Ridge National Laboratory
OSI	Open Systems Interconnection
OSS	Operational Support Software
OWS	OGC Web Services Subsystem
PANs	Production Acceptance Notifications
PB	Petabyte (10 ¹⁵)
PC	Personal Computer
PDF	Portable Document Format
PDPS	Planning and Data Processing Subsystems
PDR	Product Delivery Record
PDRD	Product Delivery Record Discrepancy
PDSIS	Product Distribution System Information Server
PF	Process Framework
PGE	Product Generation Executable
PGEEXE	PGE executable tar file ESDT
PH	Production History
PID	Process Identifier
PO.DAAC	Physical Oceanography Distributed Active Archive Center
POSIX	Portable Operating System Interface
PREPROCERR	Preprocessing Error
PSA	Product-Specific Attribute
PTHREADS	Portable Operating System Interface (POSIX) threads
PUBERR	Publication Error
PVC	Performance Verification Center
PVL	Parameter Value Language
Q/A, QA	Quality Assurance
QAMUT	Quality Assurance Metadata Update Tool
QC	Quality Control
RARP	Reverse Address Resolution Protocol
RDBMS	Relational Database Management System
RFC	Request for Comments

RHWM	Request High Water Mark
RLWM	Request Low Water Mark
ROM	Read Only Memory
RPC	Remote Procedure Call
RPCID	Remote Procedure Call Identifier
RTR	Requirements Technical Review
SBSRV	Subscription Server
SCF	Science Computing Facility
SCI	science
SCP	Secure Copy
SDP	Science Data Processing
SDPF	Science Data Processing Facility
SDPS	Science Data Processing Segment
SDRSV	misspelled SDSRV
SDS	Scientific Dataset(HDF-EOS term), Science Data System
SDSRV, SDSVR	Science Data Server
SIPS	Science Investigator-led Processing System
SMAP	Soil Moisture Active Passive
SNAC	StorNext Archive Cache
SNFS	StorNext File System
SNMP	Simple Network Management Protocol
SOM	Space Oblique Mercator
SORCE	Solar Radiation and Climate Experiment
SQL	Structured Query Language
SRF	Server Request Framework
SS	two digit seconds field in a time string
SSH	Secure Shell (protocol)
SSI&T	Science System Integration and Test
SSM/I	Special Sensor for Microwave/Imager
SSS	Spatial Subscription Server Subsystem
STGMT	Storage Management Subsystem
TB	Terabyte
TBD	To Be Determined/To Be Defined
TBR	To Be Resolved
TCP	Transmission Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
TES	Trophospheric Emission Spectrometer

TKD	Toolkit for DAAC
TKS	Toolkit for Scientists
TOMS	Total Ozone Mapping Spectrometer
TSDIS	TRMM Science Data and Information System
TSM	Tertiary Storage Manager, component of StorNext
TTPro	TestTrack Pro
UDF	Universal Disk Format
UDP	User Datagram Protocol
UPS	Uninterruptible Power Supply
URL	Uniform Resource Locator
UR	Universal Reference, granule UR
UTC	Universal Time Coordinated/Universal Time Code
UTM	Universal Transverse Mercator
V0	Version 0, Refers to the Archive System and Protocols used in the predecessor to the ECS
VPN	Virtual Private Network
VS	versus (abbr)
W*S	refers to any member of the family of Open Geospatial Consortium (OGC) web services: WCS, WMS, WFS, WPS
WAN	Wide Area Network
WCS	Web Coverage Service
WGS84	World Geodetic System 1984
WKBCHCI	Workbench Configuration Item
WKSHW	Working Storage Hardware Configuration Item
WMS	Web Map Service
WRS	Worldwide Reference System, used by Landsat
WSDL	Web Service Definition Language
WU-FTP	Washington University File Transfer Protocol program
WWW	World Wide Web
XFR	Transfer (abbr)
XML	Extensible Markup Language
XSD	XML Schema Definition
XVU	XML Validation Utility