

4.9 CSS - Communications Subsystem

4.9.1 Introduction

This section contains the requirements associated with the Communications Subsystem (CSS). Characterized as "middleware," CSS is a broad collection of services providing flexible interoperability and information transfer among clients and servers as well as those outside.

The CSS services include Objects Services, Distributed Framework (DOF) and Common Facility Services. The Object Services support all applications with interprocess communication and specialized infrastructural services. The Common Facility Services include legacy communications services required within the ECS infrastructure. The Distributed Object Framework provides communication mechanism required to support both the development and execution of object-oriented, client-server application services.

As one of the ECS subsystems, CSS provides the fundamental set of communication interfaces for all management and user access domain services. While supporting other subsystems (including CLS, IOS, DMS, DSS, INS, DPS, PLS, MSS) services directly or indirectly, the CSS services are functionally dependent on the services provided by the ISS services. Within the CSS segment, the DOF services are the communication heart of the common facilities and objects services, which manages the interaction among objects.

New functionalities for Release B include the Transaction Processing (TP), Secure Web and many enhancements such as the DCE DFS for remote file access. The Trader Service has been moved to Release C. As for the dial-up access capability, further action is required to analyze the cost effectiveness between a pool of modems at DAACs and commercial on-line services.

ECS adopted a phased approach to provide the full capabilities as required. As planned, OSF DCE was selected as a CSS baseline COTS product for Release Ir1 and A. HP OODCE is recommended for prototyping and implementation in the Release B time frame. A DCE-to-CORBA migration would provide the complete solution in Release C.

4.9.2 Communications Subsystem Summary

4.9.2.1 Subsystem Interfaces

Refer to Section 3 of 305-CD-028-002 for a context diagram and more detail of the flows between subsystems. A summary of CSS related interfaces follows:

- o The interface between CSS and MSS includes the exchange of the following data: common facilities, lifecycle commands and mode request to CSS, and common facilities, processing status, current mode, detected hardware and software faults, event notification and resource utilization data from CSS.
- o The interfaces between CSS and PLS, CSS and INS, CSS and DPS, CSS and DSS, CSS and USER, exchange only common facilities data.
- o The interface between CSS and DMS exchanges the following data: user authorization, common facilities.
- o The interface between CSS and CLS exchanges common facilities and user authorization data.

- o The interface between CSS and Operator exchanges system administration information.

4.9.2.2 CSCI Overview

4.9.2.2.1 Distributed Computing Software (DCCI) CSCI

This section describes the software requirements for DCCI. The DCCI CSCI provides the following services:

- o **Common Facility Services.** Common Facility Services are defined as high level communication interfaces and uniform semantics that are shared across applications. These services make applications easier to develop and maintain across multiple application domains and include interactive tools for the operators and programmatic interfaces for applications.
- o **Electronic Mail Service.** This service provides interactive (for the operators) and programmatic (API, for the applications) interfaces to manage electronic mail messages.
- o **File Access Service.** The file access service provides functionality for file transfers and management. Remote File Access (RFA) refers to the ability to mount remote files and access them just like local files. DCE DFS (Distributed File System) is used for the secure data sharing and transparent file access. The DFS file server provides high availability, fast fault recovery and strong security.
- o **Bulletin Board Service.** This service provides a forum for sharing ECS related information. The bulletin board service consists of multiple bulletin boards (newsgroups) organized according to subjects.
- o **Virtual Terminal Service/User Interface.** Virtual terminal (VT) provides operators the capability to remotely log into ECS machines. This service includes kerberized telnet and X application support.
- o **Event Logger Service.** This service allows applications to log event and history information to a application defined file which can later be used for fault, performance or statistical analysis.
- o **Secure Web.** Secure Web incorporates the DCE technology and the user-friendly Web service for secure information browsing.
- o **Object Services.** Object Services are a collection of services (interfaces and objects) that support basic functions for using and implementing objects. Object Services are general purpose, domain independent and used for the construction of any distributed application.
- o **Event Service.** This service support asynchronous communications between objects, in contrast to a standard remote procedure call that results in the synchronous execution of an operation by an object. Event Service allows a more decoupled communication model between objects.
- o **Directory/Naming Service.** Directory/Naming provides a mechanism to associate a name with a resource. These resources can be then identified and located by name even if the named resource changes physical address over time.

- o Security Service. Security Service provides mechanisms for authentication, authorization, and optionally data integrity and data privacy to protect resources as well as the integrity of the data exchanged.
- o Message Passing Service. It provides asynchronous and deferred synchronous message passing between client and server applications running on different platforms.
- o Time Service. Time Service provides time synchronization among different hosts within the system.
- o Lifecycle Service. The Life Cycle Services define services and conventions for creating objects in different locations.
- o Thread Service. CSS provides a POSIX compliant threads package. Transaction Processing. This service manages the data exchanges among applications. It can be used to implement distributed on-line transaction processing.

The DCCI CI provides a Distributed Object Framework. Distributed Object Framework (DOF) provides a framework for developing distributed applications utilizing the Object Services. DOF isolates application developers from low level communication programming and provides object oriented libraries from which the application inherits functionality. Object interfaces are captured in the interface definition language (IDL).

New features for Release B include: Security Delegation, Secure Remote Administration, Aliasing, Hierarchical Namespace and enhanced security services.

4.9.2.2.2 Distributed Communications Hardware (DCHCI) HWCI

The CSS Distributed Communications Hardware (CSS-DCHCI) is the hardware to host all CSS software. The CSS-DCHCI logically includes an enterprise communications server, a local communication server, a bulletin board server, and a terminal access server for Release B.

The Enterprise Communications server will provide processors and peripheral equipment necessary for enabling distributed communications for the entire ECS as required by the CSMS system design. The Enterprise Communications server will be cross-strapped with the Enterprise Monitoring Server to prevent a single point of failure.

The Local Communications Server will provide processors and peripheral equipment necessary for enabling distributed communications within a local DAAC as required by CSMS system design. The Local Communications Server will be cross-strapped with the Local Management Server for redundancy, and will coordinate with the Enterprise Communications server to prevent a single point of failure.

The Bulletin Board Server will provide processors and peripheral equipment necessary for enabling user community access to ECS as required by CSMS design. The Bulletin Board Server will be standalone, and will coordinate with the Enterprise Communications server to prevent a single point of failure for the user community access to directory data.

The Terminal Access Server provides modem and/or DSU/CSU access to ECS by users who are not network attached.

4.9.3 Requirements Table

The following table lists all CSS L4 requirements for Releases Ir1, A & B in numerical order together with their RbR parent requirements.

Communications Subsystem L4 to RbR traceability (1 of 241)

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-00010	A	The CSS services at the SMC shall be configured to support the SMC function of Gathering and Disseminating System Management Information's availability requirement of .998 and a Mean Down Time of < 20 minutes during times of staffed operation.	EOSD4030#A	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.
			ASTER-2000#B	ECS functions shall have an operational availability (computed as defined in the Functional and Performance Requirements Specification for the EOSDIS Core System) of 0.96 at a minimum and a Mean Down Time (MDT) of four (4) hours or less, unless otherwise specified.
			NI-1000#B	ECS functions shall have an operational availability (computed as defined in the Functional and Performance Requirements Specification for the ECS) of 0.96 at a minimum and a Mean Down Time (MDT) of four (4) hours or less, unless otherwise specified.
			ASTER-2080#B	The ECS function for gathering and disseminating management information shall have an operational availability of .998 at a minimum and an MDT of 20 minutes or less, for critical services.
			EOSD4030#B	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.
C-CSS-00020	A	The CSS services shall have no single point of failure for functions associated with network databases and configuration data.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
			ESN-0690#B	The ESN shall be capable of reconfiguration transparent to network users.
			EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
			ESN-0690#A	The ESN shall be capable of reconfiguration transparent to network users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-00030	A	The CSS services shall be extensible in its design to provide capability for growth and enhancement.	EOSD5000#B	ECS shall enable the addition of other data providers, e.g. DAACs, SCFs, ADCs, ODCs, which may: - provide heterogeneous services, i.e. services in support of EOS which may be less than or different than ECS services. - be connected with varying topologies - have variable levels of reliability or operational availability.
			ESN-0240#B	The ESN shall be extensible in its design to provide capability for growth and enhancement.
			EOSD5000#A	ECS shall enable the addition of other data providers, e.g. DAACs, SCFs, ADCs, ODCs, which may: - provide heterogeneous services, i.e. services in support of EOS which may be less than or different than ECS services. - be connected with varying topologies - have variable levels of reliability or operational availability.
			ESN-0240#A	The ESN shall be extensible in its design to provide capability for growth and enhancement.
C-CSS-00040	IR1	The CSS services shall be compatible with POSIX-compliant Unix platforms.	EOSD5020#Ir1	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-CSS-00100	A	The CSS Directory services shall maintain multiple copies of the namespace on different hosts to provide fault tolerance.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
			ESN-0690#B	The ESN shall be capable of reconfiguration transparent to network users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
			ESN-0690#A	The ESN shall be capable of reconfiguration transparent to network users.
C-CSS-00200	A	The CSS services shall allocate 10% of development resources for IV&V activity.	EOSD1140#A	ECS shall allocate 10% of development resources (the ECS Sustaining Engineering Facility at GSFC), including processing, storage, and networks, for the IV&V activity.
			EOSD1140#B	ECS shall allocate 10% of development resources (the ECS Sustaining Engineering Facility at GSFC), including processing, storage, and networks, for the IV&V activity.
C-CSS-00500	IR1	The CSS client services software shall be made available in the form of a CSS toolkit to the developers.	EOSD0502#Ir1	ECS shall provide an integrated set of toolkits consisting of software tools for each ECS element.
			EOSD0502#A	ECS shall provide an integrated set of toolkits consisting of software tools for each ECS element.
			EOSD0502#B	ECS shall provide an integrated set of toolkits consisting of software tools for each ECS element.
C-CSS-00510	A	The CSS shall provide access to ECS data and services to the clients at the DAACs and SCFs without distinction using ECS provided software.	EOSD5010#B	ECS shall enable extended provider support, i.e. client access of data and services at SCFs and DAACs, as authorized, without distinction to the client.
			EOSD5010#A	ECS shall enable extended provider support, i.e. client access of data and services at SCFs and DAACs, as authorized, without distinction to the client.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01000	A	The CSS DOF Service shall provide a standards-based Interface Definition Language (IDL) and language mappings to at least C and C++ (limited) languages.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-01010	A	The CSS DOF provided IDL shall support versioning of the interface supporting minor and major versions.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01020	A	The IDL supported minor versioning shall be upward compatible that requires no changes in the client software to communicate with the new implementation.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01030	A	The CSS DOF Service shall support the passing of the general error status as a parameter in calls between the clients and servers automatically.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01040	A	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.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-01050	A	The CSS DOF Service shall provide the capability to marshal and unmarshal standard types to/from a common standard format.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01060	A	The CSS DOF Service shall provide the capability to define marshaling and unmarshaling routines for user defined types.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-01070	A	The CSS DOF Service shall provide server APIs to register/unregister services in the namespaces (in different administrative domains) under different views (server/group/profile).	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01080	A	The CSS DOF Service shall provide server APIs to register/unregister different implementations of an interface in the namespace.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01090	A	The CSS DOF Service shall provide server APIs to register/unregister individual objects implementing an interface in the namespace.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01100	A	The CSS DOF Service shall provide server APIs to register their services using different protocols in the namespace.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-01110	A	The CSS DOF Service shall provide server APIs to register their services with the local endpoint mapper with the proper port number.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01120	A	The CSS DOF Service shall provide mechanisms to shutdown a service gracefully, by allowing the servers to unregister the server information from the namespace.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-01130	A	The CSS DOF Service shall provide server APIs to limit the maximum number of threads to use in servicing the requests concurrently.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01140	A	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	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01150	A	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.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01160	A	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.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-01170	A	The CSS DOF Service shall provide APIs to set/get the authentication service type to be used between the server and the client.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01180	A	The CSS DOF Service shall provide APIs to set/get authorization service type to be used between the client and the server.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-01190	A	The CSS DOF Service shall provide APIs to maintain the integrity of the data to be passed between the client and the server.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01200	A	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.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01210	A	The CSS DOF Service shall provide APIs to set the identity of a given principal to a given process.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01220	A	The CSS DOF shall support the TCP and UDP communication protocols to communicate between the servers and the clients.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1330#A	The ESN shall provide ISO/OSI data communications protocols and services specified in the GOSIP (see Figure 8-3) to external interfaces as required by the IRDs.
			ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-1330#B	The ESN shall provide ISO/OSI data communications protocols and services specified in the GOSIP (see Figure 8-3) to external interfaces as required by the IRDs.
C-CSS-01230	B	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 across chained operations.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01240	B	The CSS DOF Service shall provide a daemon process service that enables secure remote administration of DCE services and enables control of service configuration parameters.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-01250	B	The CSS DOF Service shall provide cell namespace aliasing for the directory service to permit administrative ease of changes.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-01260	B	The CSS DOF Service shall provide a hierarchical cell namespace structure.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-01270	B	The CSS Security Service shall provide for distributed file service delegation that permits a file to be passed with its corresponding directory service namespace structure.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-01280	B	The CSS Security Service shall provide for a security service ACL manager library.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-02000	B	The CSS-DCHW CI Enterprise Communications Server shall be physically and functionally identical to the Enterprise Monitoring Server in supporting the CSMS requirements.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02010	B	The CSS-DCHW CI Enterprise Communications Server shall share data with the Local Communications Server in supporting the CSMS requirements.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02020	B	The CSS-DCHW CI Enterprise Communications Server shall preserve DAAC autonomy of operations.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02030	B	The CSS-DCHW CI Enterprise Communications Server shall host the CSS software configuration items to create, with the Enterprise Monitoring Server and Management Workstations, an enterprise monitoring and coordination center for the ECS.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-CSS-02050	A	The CSS-DCHCI shall be configured to support the SDPS function of receiving science data's Availability requirement of .999 and Mean Down Time requirement of 2 hours or less during times of staffed operation.	EOSD3900#A	The SDPS function of receiving science data shall have an operational availability of 0.999 at a minimum (.99995 design goal) and an MDT of two (2) hours or less (8 minutes design goal).
			EOSD3900#B	The SDPS function of receiving science data shall have an operational availability of 0.999 at a minimum (.99995 design goal) and an MDT of two (2) hours or less (8 minutes design goal).
C-CSS-02052	A	The CSS-DCHCI shall be configured to support the SDPS function of Archiving and Distributing Data's Availability requirement of .98 and Mean Down Time requirement of < 2 hours during times of staffed operation.	EOSD3920#A	The SDPS function of archiving and distributing data shall have an operational availability of 0.98 at a minimum (.999999 design goal) and an MDT of two (2) hours or less (9 minutes design goal).
			EOSD3920#B	The SDPS function of archiving and distributing data shall have an operational availability of 0.98 at a minimum (.999999 design goal) and an MDT of two (2) hours or less (9 minutes design goal).
C-CSS-02054	A	The CSS-DCHCI shall be configured to support the SDPS function of User Interfaces to Client, Interoperability, Data Server, and Data Management (IMS) services at Individual DAAC Site's availability requirement of .993 and a mean down time requirement of < 2 hours during times of staffed operations.	EOSD3930#A	The user interfaces to Information Management System (IMS) services at individual Distributed Active Archive Center (DAAC) sites shall have an operational availability of 0.993 at a minimum (.9997 design goal) and an MDT of two (2) hours or less (1.6 hour design goal).

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD3930#B	The user interfaces to Information Management System (IMS) services at individual Distributed Active Archive Center (DAAC) sites shall have an operational availability of 0.993 at a minimum (.9997 design goal) and an MDT of two (2) hours or less (1.6 hour design goal).
C-CSS-02056	A	The CSS-DCHCI shall be configured to support the SDPS function of information searches on the ECS directory's availability requirement of .993 and a mean down time requirement of < 2 hours during times of staffed operations.	EOSD3940#A	The SDPS function of Information Searches on the ECS Directory shall have an operational availability of 0.993 at a minimum (.9997 design goal) and an MDT of two (2) hours or less (1.4 hour design goal).
			EOSD3940#B	The SDPS function of Information Searches on the ECS Directory shall have an operational availability of 0.993 at a minimum (.9997 design goal) and an MDT of two (2) hours or less (1.4 hour design goal).
C-CSS-02058	A	The CSS-DCHCI shall be configured to support the SDPS function of Metadata Ingest and Update's availability requirement of .96 and a mean down time requirement of < 4 hours during times of staffed operations.	EOSD3960#A	The SDPS function of Metadata Ingest and Update shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
			EOSD3960#B	The SDPS function of Metadata Ingest and Update shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
C-CSS-02060	A	The CSS-DCHCI shall be configured to support the SDPS function of Information Searches On Local Holding's availability requirement of .96 and mean down time requirement of < 4 hours during times of staffed operations.	EOSD3970#A	The SDPS function of Information Searches on Local Holdings shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
			EOSD3970#B	The SDPS function of Information Searches on Local Holdings shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02062	A	The CSS-DCHCI shall be configured to support the SDPS function of Local Data Order Submission's availability requirement of .96 and a mean down time requirement of < 4 hours during times of staffed operations.	EOSD3980#A	The SDPS function of Local Data Order Submission shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
			EOSD3980#B	The SDPS function of Local Data Order Submission shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
C-CSS-02064	A	The CSS-DCHCI shall be configured to support the SDPS function of Data Order Submission Across DAAC's availability requirement of .96 and a mean down time requirement of < 4 hours during times of staffed operations.	EOSD3990#A	The SDPS function of Data Order Submission Across DAACs shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
			EOSD3990#B	The SDPS function of Data Order Submission Across DAACs shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
C-CSS-02066	A	The CSS-DCHCI shall be configured to support the SDPS function of Client, Interoperability, Data Management and Data Server (IMS) Data Base Management and Maintenance Interface's availability requirement of .96 and a mean down time requirement of < 4 hours during times of staffed operations.	EOSD4000#A	The SDPS function of IMS Data Base Management and Maintenance Interface shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
			EOSD4000#B	The SDPS function of IMS Data Base Management and Maintenance Interface shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02068	A	The CSS-DCHCI 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.	EOSD4100#A	The ECS segments, 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.
			EOSD4100#B	The ECS segments, 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.
C-CSS-02070	A	The maximum down time of the CSS-DCHCI shall not exceed twice the required MDT in 99 percent of failure occurrences.	EOSD3630#B	The maximum down time shall not exceed twice the required MDT in 99 percent of failure occurrences.
			EOSD3630#A	The maximum down time shall not exceed twice the required MDT in 99 percent of failure occurrences.
C-CSS-02100	B	The CSS-DCHW CI Enterprise Communications Server processor shall include a dedicated terminal to be used as a local systems operations console.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02110	B	The CSS-DCHW CI Enterprise Communications Server processor shall be capable of expansion with additional quantities and types of peripherals.	SMC-2510#B	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-CSS-02120	B	The CSS-DCHW CI Enterprise Communications Server processor shall be upgradeable/replaceable within the same product family without major software modification or replacement of any peripheral or attached component.	SMC-2510#B	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02130	B	The CSS-DCHW CI Enterprise Communications Server processor shall have the capability to support a POSIX compliant IEEE 1003.1 operating system (UNIX).	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-CSS-02140	B	The CSS-DCHW CI Enterprise Communications Server processor terminal shall be compatible with the Management Workstation display device.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02200	B	The CSS-DCHW CI Enterprise Communications Server data storage shall be compatible with POSIX compliant operating systems from several vendors.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-CSS-02210	B	The CSS-DCHW CI Enterprise Communications Server data storage shall be compatible with the Communications Server short-term data storage.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02220	B	The CSS-DCHW CI Enterprise Communications Server data storage shall support RAID level-5: striping with interleaved parity.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02230	B	The CSS-DCHW CI Enterprise Communications Server data storage shall have the following hot swappable components: a. Disks b. Power Supplies c. Fans d. Disk-array controllers	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02240	B	The CSS-DCHW CI Enterprise Communications Server data storage shall be cross-strapped with the Enterprise Monitoring Server data storage in supporting the CSMS requirements.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02250	B	The CSS-DCHW CI Enterprise Communications Server data storage shall be capable of archiving data to the ECS Data Server archive for data archive.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02260	B	The CSS-DCHW CI Enterprise Communications Server data archive shall adhere to ECS data server archival requirements for data storage and retrieval.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02300	B	The CSS-DCHW CI Enterprise Communications Server peripheral disk drives shall be capable of retrieving data stored from both the Enterprise Communications server data storage and data archive.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02400	B	The CSS-DCHW CI Enterprise Communications Server peripherals shall support at least one tape drive.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02410	B	The CSS-DCHW CI Enterprise Communications Server peripheral tape drive shall have the following characteristics: a. 4mm Digital Audio Tape format b. Accept industry standard magnetic 4mm DAT (i.e. DDS-90)	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02420	B	The CSS-DCHW CI Enterprise Communications Server shall provide a peripheral tape drive.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02430	B	The CSS-DCHW CI Enterprise Communications Server tape drives shall be upgradeable/replaceable within the same product family.	EOSD0030#B	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-CSS-02500	B	The CSS-DCHW CI Enterprise Communications Server peripherals shall support at least one CD-ROM drive.	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-CSS-02510	B	The CSS-DCHW CI Enterprise Communications Server peripheral CD-ROM drive shall have the following characteristic: a. Accept 600MB Compact Disk	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-CSS-02520	B	The CSS-DCHW CI Enterprise Communications Server peripheral CD-ROM drives shall be upgradeable/replaceable within the same product family.	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02600	B	The CSS-DCHW CI Local Communications Server shall be physically and functionally identical to the Local Management Server in supporting the CSMS requirements.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02610	B	The CSS-DCHW CI Local Communications Server shall share data with the Enterprise Communications Server in supporting the CSMS requirements.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02620	B	The Local Communications Server shall be configurable according to local DAAC user authentication/authorization policy and preserve other DAAC autonomy of operations.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02630	B	The CSS-DCHW CI Local Communications Server shall host the CSS software configuration items to create, with the Local Management Server and Management Workstations, a local system management center for each ECS DAAC.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-CSS-02700	B	The CSS-DCHW CI Local Communications Server processor shall include a dedicated terminal to be used as a local systems operations console.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02710	B	The CSS-DCHW CI Local Communications Server processor shall be capable of expansion with additional quantities and types of peripherals.	SMC-2510#B	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02720	B	The CSS-DCHW CI Local Communications Server processor shall be upgradeable/replaceable within the same product family without major software modification or replacement of any peripheral or attached component.	SMC-2510#B	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-CSS-02730	B	The CSS-DCHW CI Local Communications Server processor shall have the capability to support a POSIX compliant IEEE 1003.1 operating system (UNIX).	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-CSS-02740	B	The CSS-DCHW CI Local Communications Server processor terminal shall be compatible with the Management Workstation display device.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02800	B	The CSS-DCHW CI Local Communications Server data storage shall be compatible with POSIX compliant operating systems from several vendors.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-CSS-02810	B	The CSS-DCHW CI Local Communications Server short-term data storage shall be compatible with the Enterprise Communications Server intermediate-term data storage.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02820	B	The CSS-DCHW CI Local Communications Server data storage shall support RAID level-5: striping with interleaved parity.	EOSD4036#B	The operational availability of individual ESN segments shall be consistent with the specified operational availability of the supported ECS functions.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-02830	B	The CSS-DCHW CI Local Communications Server data storage shall have the following hot swappable components: a. Disks b. Power Supplies c. Fans d. Disk-array controllers	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02840	B	The CSS-DCHW CI Local Communications Server data storage shall be cross-strapped with the Local Management Server short-term data storage in supporting the CSMS requirements.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-02850	B	The CSS-DCHW CI Local Communications Server data storage shall be capable of archiving data to the ECS Data Server archive.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02860	B	The CSS-DCHW CI Local Communications Server data archive shall adhere to ECS Data Server archival requirements for data storage and retrieval.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-02900	B	The CSS-DCHW CI Local Communications Server peripheral disk drives shall be capable of retrieving data stored from both the Local Communications server data storage and data archive.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-03000	B	The CSS-DCHW CI Local Communications Server peripherals shall support at least one tape drive.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-03010	B	The CSS-DCHW CI Local Communications Server peripheral tape drive shall have the following characteristics: a. 4mm Digital Audio Tape format b. Accept industry standard magnetic 4mm DAT (i.e. DDS-90)	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-03020	B	The CSS-DCHW CI Local Communications Server shall provide a peripheral tape drive.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-03030	B	The CSS-DCHW CI Local Communications Server tape drives shall be upgradeable/replaceable within the same product family.	EOSD0030#B	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-CSS-03100	B	The CSS-DCHW CI Local Communications Server peripherals shall support at least one CD-ROM drive.	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-03110	B	The CSS-DCHW CI Local Communications Server peripheral CD-ROM drive shall have the following characteristic: a. Accept 600MB Compact Disk	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-CSS-03120	B	The CSS-DCHW CI Local Communications Server peripheral CD-ROM drives shall be upgradeable/replaceable within the same product family.	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-CSS-03200	B	The CSS-DCHW CI Bulletin Board Server shall share data with the Enterprise Communications Server in supporting the CSMS requirements.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-03210	B	The CSS-DCHW CI Bulletin Board Server shall preserve DAAC autonomy of operations and aggregate all ECS DAAC authentication/authorization policies by user type and DAAC, to provide a integrated view of ECS for user registration, account administration, and authentication/authorization to ECS services.	ESN-1360#B	The ESN shall control access of processes and users through an authentication and authorization service that meets GNMP standards.
C-CSS-03220	B	The CSS-DCHW CI Bulletin Board Server shall host the CSS software configuration items to create a single, secure unified access to all ECS services.	SMC-2620#B	The SMC shall maintain via the ECS bulletin board service, the SMC toolkit consisting of a list of SDPS approved CASE tools and references to standards for exchanging data for scientist use.
C-CSS-03230	B	The CSS-DCHW CI Bulletin Board Server shall host ECS client software and toolkits for ECS-external distribution.	SMC-2620#B	The SMC shall maintain via the ECS bulletin board service, the SMC toolkit consisting of a list of SDPS approved CASE tools and references to standards for exchanging data for scientist use.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-03300	B	The CSS-DCHW CI Bulletin Board Server processor shall include a dedicated terminal to be used as a local systems operations console.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-03310	B	The CSS-DCHW CI Bulletin Board Server processor shall be upgradeable/expandable with additional quantities and types of peripherals.	SMC-2510#B	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-CSS-03320	B	The CSS-DCHW CI Bulletin Board Server processor shall be upgradeable/replaceable within the same product family without the need for any perturbation of any software or replacement of any peripheral or attached component.	SMC-2510#B	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-CSS-03330	B	The CSS-DCHW CI Bulletin Board Server processor shall have the capability to support a POSIX compliant IEEE 1003.1 operating system (UNIX).	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-CSS-03340	B	The CSS-DCHW CI Bulletin Board Server processor terminal shall be compatible with the Management Workstation display device.	EOSD1703#B	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-CSS-03400	B	The CSS-DCHW CI Bulletin Board Server data storage shall be compatible with POSIX compliant operating systems from several vendors.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-03410	B	The CSS-DCHW CI Bulletin Board Server data storage shall be capable of archiving data to the ECS data server archive for long-term storage and software/toolkit safestore.	EOSD4035#B	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-CSS-03420	B	The CSS-DCHW CI Bulletin Board Server data archive shall adhere to ECS data server archival requirements for data storage and retrieval.	EOSD0030#B	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-CSS-03500	B	The CSS-DCHW CI Bulletin Board Server peripherals shall support at least one tape drive.	EOSD0030#B	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-CSS-03510	B	The CSS-DCHW CI Bulletin Board Server peripheral tape drive shall have the following characteristics: a. 4mm Digital Audio Tape format b. Accept industry standard magnetic 4mm DAT (i.e. DDS-90)	EOSD0030#B	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-CSS-03520	B	The CSS-DCHW CI Bulletin Board Server shall provide a peripheral tape drive.	EOSD0030#B	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-CSS-03530	B	The CSS-DCHW CI Bulletin Board Server tape drives shall be upgradeable/replaceable within the same product family.	EOSD0030#B	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-CSS-03600	B	The CSS-DCHW CI Bulletin Board Server peripherals shall support at least one CD-ROM drive.	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-CSS-03610	B	The CSS-DCHW CI Bulletin Board Server peripheral CD-ROM drive shall have the following characteristic: a. Accept 600MB Compact Disk	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-03620	B	The CSS-DCHW CI Bulletin Board Server peripheral CD-ROM drives shall be upgradeable/replaceable within the same product family.	SMC-2320#B	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-CSS-03700	B	The CSS-DCHW CI Enterprise Communications Server shall be capable of 100 percent growth in the processing speed specified in Appendix A of the current version of 304-CD-005 without modifications or upgrade to software.	SMC-0300#B	The SMC shall be designed to accommodate 100 percent growth in processing speed without requiring modifications or upgrades to existing applications software.
C-CSS-03710	B	The CSS-DCHW CI Enterprise Communications Server shall be capable of 100 percent growth in the storage capacity specified in Appendix A of the current version of 304-CD-005 without modifications or upgrade to software.	SMC-0310#B	The SMC shall be designed to accommodate 100 percent growth in storage capacity without requiring modifications or upgrades to existing applications software.
C-CSS-03720	B	The CSS-DCHW CI Local Communications Server shall be capable of 100 percent growth in the processing speed specified in Appendix A of the current version of 304-CD-005 without modifications or upgrade to software.	SMC-0300#B	The SMC shall be designed to accommodate 100 percent growth in processing speed without requiring modifications or upgrades to existing applications software.
C-CSS-03730	B	The CSS-DCHW CI Local Communications Server shall be capable of 100 percent growth in the storage capacity specified in Appendix A of the current version of 304-CD-005 without modifications or upgrade to software.	SMC-0310#B	The SMC shall be designed to accommodate 100 percent growth in storage capacity without requiring modifications or upgrades to existing applications software.
C-CSS-03740	B	The CSS-DCHW CI Enterprise Communications Server shall be capable of meeting the capacity and performance characteristics of Appendix A of the current version of 304-CD-005.	EOSD4030#B	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-03750	B	The CSS-DCHW CI Local Communications Server shall be capable of meeting the capacity and performance characteristics of Appendix A of the current version of 304-CD-005.	EOSD4030#B	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.
C-CSS-03760	B	The CSS-DCHW CI Bulletin Board Server shall be capable of meeting the capacity and performance characteristics of Appendix A of the current version of 304-CD-005.	EOSD4030#B	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.
C-CSS-03800	B	The CSS-DCHW CI hardware selection criteria shall meet overall ECS security policies and system requirements.	EOSD2200#B	Selection criteria meeting overall ECS security policies and system requirements shall be applied when selecting hardware.
C-CSS-03810	B	The CSS-DCHW CI Bulletin Board Server shall provide a security perimeter for ECS.	EOSD2200#B	Selection criteria meeting overall ECS security policies and system requirements shall be applied when selecting hardware.
C-CSS-03820	B	The CSS-DCHW CI Enterprise and Local Communications Servers shall be configured to provide autonomous DAAC security perimeters, FOS isolation, and an Iso-cell ECS security perimeter.	EOSD2200#B	Selection criteria meeting overall ECS security policies and system requirements shall be applied when selecting hardware.
C-CSS-03900	B	The CSS-DCHW CI Enterprise Communications Server shall maintain one backup of all software and key data items in a separate physical location.	EOSD3200#B	A minimum of one backup which is maintained in a separate physical location (i.e., different building) shall be maintained for ECS software and key data items (including security audit trails and logs).
C-CSS-03910	B	The CSS-DCHW CI Local Communications Server shall maintain one backup of all software and key data items in a separate physical location.	EOSD3200#B	A minimum of one backup which is maintained in a separate physical location (i.e., different building) shall be maintained for ECS software and key data items (including security audit trails and logs).

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-03940	B	The CSS-DCHW CI Enterprise Communications Server at the SMC shall be configured to support the SMC function of Gathering and Disseminating System Management Information's Availability requirement of 0.998 and an Mean Down Time of 20 minutes during times of staffed operation.	EOSD4030#B	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.
			ASTER-2080#B	The ECS function for gathering and disseminating management information shall have an operational availability of .998 at a minimum and an MDT of 20 minutes or less, for critical services.
			ASTER-2000#B	ECS functions shall have an operational availability (computed as defined in the Functional and Performance Requirements Specification for the EOSDIS Core System) of 0.96 at a minimum and a Mean Down Time (MDT) of four (4) hours or less, unless otherwise specified.
			NI-1000#B	ECS functions shall have an operational availability (computed as defined in the Functional and Performance Requirements Specification for the ECS) of 0.96 at a minimum and a Mean Down Time (MDT) of four (4) hours or less, unless otherwise specified.
C-CSS-10090	A	The CSS shall interface with a TBS external time source for coordinated universal time (UTC).	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-10100	A	The CSS shall interface with the SDPS subsystems to exchange the data items in Table 6-1 as specified in the ECS internal ICDs, 313-DV3-003.	V0-0020#A	ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive User Authentication Requests [implementation issue 1].
			V0-0040#A	The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive V0 User Authentication Requests [implementation issue 1].

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			V0-0020#B	ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive User Authentication Requests [implementation issue 1].
			V0-0040#B	The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive V0 User Authentication Requests [implementation issue 1].
			V0-0050#B	ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive V0 User Authentication Information [implementation issue 1].
			V0-0050#A	ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive V0 User Authentication Information [implementation issue 1].
			V0-0060#B	The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Inventory Search Requests via V0 protocols.
			ESN-0070#A	The ESN shall support the elements data flow requirements identified in this specification.
			V0-0030#A	The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive ECS User Authentication Information [implementation issue 1].
			V0-0030#B	The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive ECS User Authentication Information [implementation issue 1].
			ESN-0070#B	The ESN shall support the elements data flow requirements identified in this specification.
			EOSD1695#A	The ECS shall provide 2-way interoperability with the V0 system.
			EOSD1695#B	The ECS shall provide 2-way interoperability with the V0 system.
C-CSS-10200	A	The CSS shall interface with the FOS subsystems to exchange the data items in Table 6-2 as specified in the ECS internal ICDs, 313-DV3-003.	ESN-0070#B	The ESN shall support the elements data flow requirements identified in this specification.
			AM1-0270#B	The AM-1 SDVF shall have the capability to send and ECS shall have the capability to receive AM-1 SCC flight software updates.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0070#A	The ESN shall support the elements data flow requirements identified in this specification.
C-CSS-10300	A	The CSS shall interface with the MSS subsystems to exchange the data items in Table 6-3 as specified in the ECS internal ICDs, 313-DV3-003.	ESN-0070#A	The ESN shall support the elements data flow requirements identified in this specification.
			ESN-0070#B	The ESN shall support the elements data flow requirements identified in this specification.
C-CSS-10400	A	The CSS shall interface with the ISS subsystems to exchange the data items in Table 6-4 as specified in the ECS internal ICDs, 313-DV3-003.	ESN-0070#B	The ESN shall support the elements data flow requirements identified in this specification.
			ESN-0070#A	The ESN shall support the elements data flow requirements identified in this specification.
C-CSS-10500	B	The CSS DCCI shall accept virtual terminal service request from the User.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-10510	B	The CSS DCCI shall accept email service request from the User.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10520	B	The CSS DCCI shall accept remote file access service request from the User.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-10530	B	The CSS DCCI shall accept bulletin board service request from the User.	SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
C-CSS-10540	B	The CSS DCCI shall provide virtual terminal service to the User.	ESN-0370#B	The ESN shall provide interactive virtual terminal services.
C-CSS-10550	B	The CSS DCCI shall provide email service to the User.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10560	B	The CSS DCCI shall provide remote file access service to the User.	EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10570	B	The CSS DCCI shall provide bulletin board to the User.	SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
C-CSS-10580	B	The CSS DCCI shall accept system administration information request from the Operator.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-10590	B	The CSS DCCI shall provide system administration information to the Operator .	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-10600	B	The CSS DCCI shall accept User authentication request from CLS.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-10610	B	The CSS DCCI shall accept Common facilities request from CLS	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10620	B	The CSS DCCI shall provide User authentication response to CLS .	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10630	B	The CSS DCCI shall provide Common facilities to CLS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10640	B	The CSS DCCI shall accept User authorization request from IOS.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-10650	B	The CSS DCCI shall accept Common facilities request from IOS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10660	B	The CSS DCCI shall provide User authorization response to IOS .	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10670	B	The CSS DCCI shall provide Common facilities to IOS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10680	B	The CSS DCCI shall accept User authorization request from DMS.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-10690	B	The CSS DCCI shall accept Common facilities request from DMS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10700	B	The CSS DCCI shall provide User authorization response to DMS.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10710	B	The CSS DCCI shall provide Common facilities to DMS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10720	B	The CSS DCCI shall accept Common facilities request from DSS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10730	B	The CSS DCCI shall provide Common facilities to DSS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10740	B	The CSS DCCI shall accept Common facilities request from INS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10750	B	The CSS DCCI shall provide Common facilities to INS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10760	B	The CSS DCCI shall accept Common facilities request from DPS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10770	B	The CSS DCCI shall provide Common facilities to DPS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10780	B	The CSS DCCI shall accept Common facilities request from PLS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10790	B	The CSS DCCI shall provide Common facilities to PLS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10800	B	The CSS DCCI shall accept Common facilities request from MSS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10810	B	The CSS DCCI shall accept lifecycle commands request from MSS.	ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-10820	B	The CSS DCCI shall accept mode request from MSS.	SMC-1330#B	The SMC shall support and maintain the information for end-to-end data ingest, processing, reprocessing, archive, and data distribution for each product, including, at a minimum: a. Product information b. Product generation information c. Product delivery information
C-CSS-10830	B	The CSS DCCI shall provide Common facilities to MSS.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-10840	B	The CSS DCCI shall have the capability to send processing status to MSS.	SMC-1330#B	The SMC shall support and maintain the information for end-to-end data ingest, processing, reprocessing, archive, and data distribution for each product, including, at a minimum: a. Product information b. Product generation information c. Product delivery information

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-10850	B	The CSS DCCI shall have the capability to send current mode to MSS.	SMC-1330#B	The SMC shall support and maintain the information for end-to-end data ingest, processing, reprocessing, archive, and data distribution for each product, including, at a minimum: a. Product information b. Product generation information c. Product delivery information
C-CSS-10860	B	The CSS DCCI shall have the capability to send detected hardware and software fault information to MSS.	ESN-0760#B	The ESN report generation function shall provide, on an interactive and scheduled basis, accounting, network configuration, fault and performance management information.
C-CSS-10870	B	The CSS DCCI shall have the capability to send event notification to MSS.	ESN-0830#B	The ESN shall have the capability to detect and report communications related errors and events both locally and at the ESN network management facility.
C-CSS-10880	B	The CSS DCCI shall have the capability to send resource utilization data to MSS.	ESN-0070#B	The ESN shall support the elements data flow requirements identified in this specification.
C-CSS-20000	A	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.	ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			SMC-7320#A	The SMC shall establish, maintain, and update the system profile, as opposed to science data profile, inventory to include, at a minimum: a. Data identifications b. Data purposes c. Data locations d. Data classifications (proprietary, open, confidential, etc.) e. Data priorities

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-7310#A	<p>The SMC shall establish, maintain, and update the approved facility and equipment inventory to include, at a minimum:</p> <ul style="list-style-type: none"> a. Facility and equipment identification b. Addresses c. Allowed accesses to privileges
			ESN-0510#B	<p>The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.</p>
			SMC-7300#A	<p>The SMC shall establish, maintain, and update the authorized users inventory to include, at a minimum:</p> <ul style="list-style-type: none"> a. Users identifications b. Addresses c. Allowed privileges
			SMC-1330#A	<p>The SMC shall support and maintain the information for end-to-end data ingest, processing, reprocessing, archive, and data distribution for each product, including, at a minimum:</p> <ul style="list-style-type: none"> a. Product information b. Product generation information c. Product delivery information
			SMC-7300#B	<p>The SMC shall establish, maintain, and update the authorized users inventory to include, at a minimum:</p> <ul style="list-style-type: none"> a. Users identifications b. Addresses c. Allowed privileges
			SMC-7310#B	<p>The SMC shall establish, maintain, and update the approved facility and equipment inventory to include, at a minimum:</p> <ul style="list-style-type: none"> a. Facility and equipment identification b. Addresses c. Allowed accesses to privileges

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-7320#B	The SMC shall establish, maintain, and update the system profile, as opposed to science data profile, inventory to include, at a minimum: a. Data identifications b. Data purposes c. Data locations d. Data classifications (proprietary, open, confidential, etc.) e. Data priorities
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			SMC-1330#B	The SMC shall support and maintain the information for end-to-end data ingest, processing, reprocessing, archive, and data distribution for each product, including, at a minimum: a. Product information b. Product generation information c. Product delivery information
C-CSS-20010	A	The CSS shall provide implementations of the DNS and X.500 namespaces.	ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
C-CSS-20020	A	The CSS Directory service shall provide a mechanism to periodically update copies of the namespace from the namespace designated as the master.	ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
C-CSS-20025	A	The updating of the namespace shall be done a. automatically b. manually by the administrator.	ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
C-CSS-20030	A	The CSS Directory Service shall provide the capability to partition the namespace and distribute and maintain them at different hosts on the network.	ESN-0610#A	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.
			ESN-0610#B	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.
C-CSS-20040	A	The CSS Directory Service shall provide the capability to replicate partitions of the namespace on different hosts.	ESN-0610#B	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0610#A	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.
C-CSS-20050	A	The CSS Directory service shall provide multiple directory agents which cooperate among themselves through referral and chaining to perform directory operations.	ESN-0610#A	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.
			ESN-0610#B	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.
C-CSS-20060	A	The CSS Directory service shall provide a way to denote the relative root of the namespace.	ESN-0610#B	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.
			ESN-0610#A	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.
C-CSS-20070	A	The CSS Directory Service client shall maintain local cache to keep recently lookup information from the namespace for more efficient further lookups.	ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-20080	A	The CSS Directory Service shall interact with the Security Service to provide host based security to the entries in the namespace.	ESN-0600#B	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			ESN-0600#A	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
C-CSS-20085	A	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.	ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
C-CSS-20090	A	The CSS Directory service shall define a minimum of 20 user defined attribute types for application users to store/retrieve attribute information.	SMC-7300#B	The SMC shall establish, maintain, and update the authorized users inventory to include, at a minimum: a. Users identifications b. Addresses c. Allowed privileges
			ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0610#A	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0610#B	The ESN shall include multiple Directory Service Agents (DSAs) which shall be collectively responsible for holding or retrieving all directory information which is needed by ECS.
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			SMC-7300#A	The SMC shall establish, maintain, and update the authorized users inventory to include, at a minimum: a. Users identifications b. Addresses c. Allowed privileges
C-CSS-20110	A	The CSS Directory service shall determine which naming service to use from a given context.	ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
C-CSS-20120	A	The CSS Directory service shall provide a mechanism to communicate with both X.500 and DNS naming services in resolving lookups.	ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
C-CSS-20130	A	The CSS Directory Service shall provide namespaces that are compatible with the existing NASA X.500 and DNS directory services.	ESN-0490#A	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#A	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
			ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
			ESN-0510#B	The directory function shall be able to respond to requests for information concerning named objects, either physical or logical, so as to support communications with those objects.
C-CSS-21000	IR1	The CSS Security service shall provide an API to verify the identity of users.	ESN-0590#A	The ESN Directory Service shall be protected by access control capabilities.
			ESN-0600#A	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			SMC-5320#A	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.
			EOSD1990#A	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-5320#B	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.
			ASTER-0860#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive browse requests.
			ASTER-0865#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive inventory search results.
			ASTER-0870#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive guide search results.
			ASTER-0875#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive browse results.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			SMC-5320#I1	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0600#B	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			ESN-0590#B	The ESN Directory Service shall be protected by access control capabilities.
C-CSS-21005	A	The CSS Security service shall provide a unique session key for each client session.	ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			EOSD2480#B	ECS elements shall require unique sessions when security controlled data are being manipulated.
			EOSD2480#A	ECS elements shall require unique sessions when security controlled data are being manipulated.
C-CSS-21010	A	The CSS Security service shall not transmit passwords in clear text across networks.	ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			EOSD1990#A	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
C-CSS-21020	IR1	The CSS Security service shall provide the capability to create/modify/delete user accounts and privileges in the security registry.	ESN-0650#Ir1	The ESN shall perform the following network management functions for each protocol stack implemented in any ECS element, and each communications facility: a. Network Configuration Management b. Network Fault Management c. Network Performance Management d. Network Security Management
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0600#B	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			ESN-0650#B	The ESN shall perform the following network management functions for each protocol stack implemented in any ECS element, and each communications facility: a. Network Configuration Management b. Network Fault Management c. Network Performance Management d. Network Security Management
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			EOSD1990#A	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
			SMC-5320#B	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.
			SMC-5330#B	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking and control of site and element internal privileges.
			SMC-5325#B	The LSM shall promulgate, maintain, authenticate, and monitor user and device accesses and privileges.
			SMC-5320#A	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.
			SMC-5330#A	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking and control of site and element internal privileges.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-5325#A	The LSM shall promulgate, maintain, authenticate, and monitor user and device accesses and privileges.
			ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-0600#A	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOISDIS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOISDIS users.
			ESN-0650#A	The ESN shall perform the following network management functions for each protocol stack implemented in any ECS element, and each communications facility: a. Network Configuration Management b. Network Fault Management c. Network Performance Management d. Network Security Management
			SMC-5320#1r1	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-5325#1r1	The LSM shall promulgate, maintain, authenticate, and monitor user and device accesses and privileges.
			SMC-5330#1r1	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking.
C-CSS-21030	IR1	The CSS Security service shall provide the capability to define/modify/delete group information in the security registry.	SMC-5325#1r1	The LSM shall promulgate, maintain, authenticate, and monitor user and device accesses and privileges.
			SMC-5330#1r1	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking.
			SMC-5320#1r1	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.
			ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-0650#A	The ESN shall perform the following network management functions for each protocol stack implemented in any ECS element, and each communications facility: a. Network Configuration Management b. Network Fault Management c. Network Performance Management d. Network Security Management
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ESN-0600#A	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			SMC-5320#A	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.
			SMC-5325#A	The LSM shall promulgate, maintain, authenticate, and monitor user and device accesses and privileges.
			SMC-5330#A	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking and control of site and element internal privileges.
			EOSD1990#A	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
			SMC-5330#B	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking and control of site and element internal privileges.
			SMC-5320#B	The SMC shall establish, maintain, and authenticate access privileges for ECS scientific users.
			SMC-5325#B	The LSM shall promulgate, maintain, authenticate, and monitor user and device accesses and privileges.
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0650#B	The ESN shall perform the following network management functions for each protocol stack implemented in any ECS element, and each communications facility: a. Network Configuration Management b. Network Fault Management c. Network Performance Management d. Network Security Management
			ESN-0600#B	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-0650#I1	The ESN shall perform the following network management functions for each protocol stack implemented in any ECS element, and each communications facility: a. Network Configuration Management b. Network Fault Management c. Network Performance Management d. Network Security Management
C-CSS-21040	A	The CSS Security service shall provide an API to limit the time after which a login context will expire.	EOSD2480#A	ECS elements shall require unique sessions when security controlled data are being manipulated.
			EOSD2480#B	ECS elements shall require unique sessions when security controlled data are being manipulated.
			EOSD2640#B	ECS elements shall relinquish a connection between the element and a user when the user has not been active for a configurable period of time.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			EOSD2640#A	ECS elements shall relinquish a connection between the element and a user when the user has not been active for a configurable period of time.
C-CSS-21050	A	The CSS Security Service shall provide an API to refresh login contexts before they expire.	ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			EOSD2480#B	ECS elements shall require unique sessions when security controlled data are being manipulated.
			EOSD2480#A	ECS elements shall require unique sessions when security controlled data are being manipulated.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-21060	A	The CSS Security Service shall provide an API to accept server keys associated with services interactively at the startup of a service.	ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOISDIS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOISDIS users.
			ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
C-CSS-21070	A	The CSS Security Service shall provide an API to store server keys associated with servers to a disk file.	ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSSDIS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSSDIS users.
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
C-CSS-21080	A	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.	ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSSDIS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
C-CSS-21090	A	The CSS Security Service shall provide an API to change the identity of an application process through server keys.	ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			EOSD2480#B	ECS elements shall require unique sessions when security controlled data are being manipulated.
			EOSD2480#A	ECS elements shall require unique sessions when security controlled data are being manipulated.
C-CSS-21100	IR1	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	SMC-5330#Ir1	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			SMC-5330#A	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking and control of site and element internal privileges.
			EOSD2480#A	ECS elements shall require unique sessions when security controlled data are being manipulated.
			SMC-5330#B	The SMC shall provide support, manage, maintain, and request security testing that includes, at a minimum, password checking and control of site and element internal privileges.
			EOSD2480#B	ECS elements shall require unique sessions when security controlled data are being manipulated.
C-CSS-21105	A	The CSS Security Service shall notify the MSS Management Agent Service upon a predetermined number of unsuccessful login attempts.	EOSD2620#A	ECS elements shall disconnect a user/element after a predetermined number of unsuccessful attempts to access data.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			EOSD2510#A	ECS elements shall maintain an audit trail of: a. All accesses to the element security controlled data b. Users/processes/elements requesting access to element security controlled data c. Data access/manipulation operations performed on security controlled data d. Date and time of access to security controlled data e. Unsuccessful access attempt to the element security controlled data by unauthorized users/elements/processes f. Detected computer system viruses and worms g. Actions taken to contain or destroy a virus
			EOSD2510#B	ECS elements shall maintain an audit trail of: a. All accesses to the element security controlled data b. Users/processes/elements requesting access to element security controlled data c. Data access/manipulation operations performed on security controlled data d. Date and time of access to security controlled data e. Unsuccessful access attempt to the element security controlled data by unauthorized users/elements/processes f. Detected computer system viruses and worms g. Actions taken to contain or destroy a virus
			EOSD2620#B	ECS elements shall disconnect a user/element after a predetermined number of unsuccessful attempts to access data.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-21110	A	The CSS Security service shall authenticate the principal before checking whether the principal is authorized to access a service/resources.	ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1400#A	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-21120	A	The CSS Security service shall provide an API to check the authorization privileges of principals to access/control services/resources.	ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-0590#A	The ESN Directory Service shall be protected by access control capabilities.
			ESN-1400#A	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			ESN-0600#A	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			IMS-0080#A	The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ESN-0590#B	The ESN Directory Service shall be protected by access control capabilities.
			ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			ESN-0600#B	The ESN Directory service shall include services and supporting mechanisms to authenticate the credentials of a user for the purpose of granting access rights and authorizing requested operations.
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			IMS-0080#B	The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.
C-CSS-21130	A	The CSS Security Service shall provide an API to define the permission schema associated with a server/resource.	IMS-0080#B	The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSDIS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSDIS users.
			ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-1400#A	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			IMS-0080#A	The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-21140	A	The CSS Security Service shall provide an API to create and maintain the ACLs associated with the server/resource in a database.	ESN-1380#A	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-1400#A	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			IMS-0080#A	The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOSSDIS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOSSDIS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			IMS-0080#B	The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.
C-CSS-21150	A	The CSS Security Service shall provide an API to save/retrieve the ACL database onto persistent store.	IMS-0080#B	The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			ASTER-0880#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication requests for ASTER GDS privileges of EOISDIS users.
			ASTER-0885#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication information specifying ASTER GDS privileges for EOISDIS users.
			ASTER-0890#B	ASTER GDS shall have the capability to send and ECS shall have the capability to receive user authentication requests for ECS privileges of ASTER GDS users.
			ASTER-0895#B	ECS shall have the capability to send and ASTER GDS shall have the capability to receive user authentication information specifying ECS privileges for ASTER GDS users.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1380#A	<p>The ESN shall provide countermeasures for the following security threats related to data communications:</p> <ul style="list-style-type: none"> a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			IMS-0080#A	<p>The IMS shall maintain a list of authorized ECS services for each user and shall update the list with information supplied by the SMC.</p>
			ESN-1400#A	<p>The following security functions and services, at a minimum, shall be provided:</p> <ul style="list-style-type: none"> a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-21160	A	<p>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.</p> <ul style="list-style-type: none"> 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. 	ESN-1380#A	<p>The ESN shall provide countermeasures for the following security threats related to data communications:</p> <ul style="list-style-type: none"> a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1400#A	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-21170	A	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	EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
			ESN-1380#B	The ESN shall provide countermeasures for the following security threats related to data communications: a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			EOSD2400#B	ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1400#B	<p>The following security functions and services, at a minimum, shall be provided:</p> <ul style="list-style-type: none"> a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			EOSD1990#A	<p>The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.</p>
			EOSD2400#A	<p>ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.</p>
			ESN-1380#A	<p>The ESN shall provide countermeasures for the following security threats related to data communications:</p> <ul style="list-style-type: none"> a. modification of data (i.e., manipulation) while in transit over the network b. disclosure of authentication information c. degradation in network or processing resource performance through denial of service attack d. Impersonation of authentication credentials or authorization privileges.
			ESN-1400#A	<p>The following security functions and services, at a minimum, shall be provided:</p> <ul style="list-style-type: none"> a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			EOSD2100#A	<p>The ECS technical security policy planning shall be comprehensive and shall cover at least the following areas:</p> <ul style="list-style-type: none"> a. Applicability of the C2 Level of Trustedness as defined by the NSA b. Applicability of the C2 Object Reuse capability c. Discretionary control and monitoring of user access d. ECS communications, network access, control, and monitoring e. Computer system "virus" monitoring, detection, and remedy f. Data protection controls g. Account/privilege management and user session tailoring h. Restart/recovery i. Security audit trail generation j. Security analysis and reporting k. Risk analysis

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD2100#B	<p>The ECS technical security policy planning shall be comprehensive and shall cover at least the following areas:</p> <ul style="list-style-type: none"> a. Applicability of the C2 Level of Trustedness as defined by the NSA b. Applicability of the C2 Object Reuse capability c. Discretionary control and monitoring of user access d. ECS communications, network access, control, and monitoring e. Computer system "virus" monitoring, detection, and remedy f. Data protection controls g. Account/privilege management and user session tailoring h. Restart/recovery i. Security audit trail generation j. Security analysis and reporting k. Risk analysis
C-CSS-21180	A	<p>The CSS Security service shall provide an API to encrypt and send the data passing between processes at the following three levels:</p> <ul style="list-style-type: none"> a. connect level b. request level c. packet level 	EOSD2100#A	<p>The ECS technical security policy planning shall be comprehensive and shall cover at least the following areas:</p> <ul style="list-style-type: none"> a. Applicability of the C2 Level of Trustedness as defined by the NSA b. Applicability of the C2 Object Reuse capability c. Discretionary control and monitoring of user access d. ECS communications, network access, control, and monitoring e. Computer system "virus" monitoring, detection, and remedy f. Data protection controls g. Account/privilege management and user session tailoring h. Restart/recovery i. Security audit trail generation j. Security analysis and reporting k. Risk analysis
			EOSD2100#B	<p>The ECS technical security policy planning shall be comprehensive and shall cover at least the following areas:</p> <ul style="list-style-type: none"> a. Applicability of the C2 Level of Trustedness as defined by the NSA b. Applicability of the C2 Object Reuse capability c. Discretionary control and monitoring of user access d. ECS communications, network access, control, and monitoring e. Computer system "virus" monitoring, detection, and remedy f. Data protection controls g. Account/privilege management and user session tailoring h. Restart/recovery i. Security audit trail generation j. Security analysis and reporting k. Risk analysis

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD1990#A	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
			EOSD2400#A	ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.
			EOSD2400#B	ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
C-CSS-21190	A	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	EOSD2510#B	ECS elements shall maintain an audit trail of: a. All accesses to the element security controlled data b. Users/processes/elements requesting access to element security controlled data c. Data access/manipulation operations performed on security controlled data d. Date and time of access to security controlled data e. Unsuccessful access attempt to the element security controlled data by unauthorized users/elements/processes f. Detected computer system viruses and worms g. Actions taken to contain or destroy a virus
			EOSD2510#A	ECS elements shall maintain an audit trail of: a. All accesses to the element security controlled data b. Users/processes/elements requesting access to element security controlled data c. Data access/manipulation operations performed on security controlled data d. Date and time of access to security controlled data e. Unsuccessful access attempt to the element security controlled data by unauthorized users/elements/processes f. Detected computer system viruses and worms g. Actions taken to contain or destroy a virus
C-CSS-21200	A	The CSS Security service shall support the Data Encryption Standard (DES) to encrypt and decrypt data.	ESN-1400#A	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD2100#A	<p>The ECS technical security policy planning shall be comprehensive and shall cover at least the following areas:</p> <ul style="list-style-type: none"> a. Applicability of the C2 Level of Trustedness as defined by the NSA b. Applicability of the C2 Object Reuse capability c. Discretionary control and monitoring of user access d. ECS communications, network access, control, and monitoring e. Computer system "virus" monitoring, detection, and remedy f. Data protection controls g. Account/privilege management and user session tailoring h. Restart/recovery i. Security audit trail generation j. Security analysis and reporting k. Risk analysis
			EOSD2100#B	<p>The ECS technical security policy planning shall be comprehensive and shall cover at least the following areas:</p> <ul style="list-style-type: none"> a. Applicability of the C2 Level of Trustedness as defined by the NSA b. Applicability of the C2 Object Reuse capability c. Discretionary control and monitoring of user access d. ECS communications, network access, control, and monitoring e. Computer system "virus" monitoring, detection, and remedy f. Data protection controls g. Account/privilege management and user session tailoring h. Restart/recovery i. Security audit trail generation j. Security analysis and reporting k. Risk analysis
			ESN-1400#B	<p>The following security functions and services, at a minimum, shall be provided:</p> <ul style="list-style-type: none"> a. authentication b. access (authorization) control c. data integrity d. data confidentiality
			EOSD2400#B	<p>ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.</p>
			EOSD1990#A	<p>The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.</p>

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD2400#A	ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
C-CSS-21210	A	<p>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:</p> <ul style="list-style-type: none"> 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 	EOSD2100#A	<p>The ECS technical security policy planning shall be comprehensive and shall cover at least the following areas:</p> <ul style="list-style-type: none"> a. Applicability of the C2 Level of Trustedness as defined by the NSA b. Applicability of the C2 Object Reuse capability c. Discretionary control and monitoring of user access d. ECS communications, network access, control, and monitoring e. Computer system "virus" monitoring, detection, and remedy f. Data protection controls g. Account/privilege management and user session tailoring h. Restart/recovery i. Security audit trail generation j. Security analysis and reporting k. Risk analysis
			EOSD2100#B	<p>The ECS technical security policy planning shall be comprehensive and shall cover at least the following areas:</p> <ul style="list-style-type: none"> a. Applicability of the C2 Level of Trustedness as defined by the NSA b. Applicability of the C2 Object Reuse capability c. Discretionary control and monitoring of user access d. ECS communications, network access, control, and monitoring e. Computer system "virus" monitoring, detection, and remedy f. Data protection controls g. Account/privilege management and user session tailoring h. Restart/recovery i. Security audit trail generation j. Security analysis and reporting k. Risk analysis

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD2510#A	ECS elements shall maintain an audit trail of: a. All accesses to the element security controlled data b. Users/processes/elements requesting access to element security controlled data c. Data access/manipulation operations performed on security controlled data d. Date and time of access to security controlled data e. Unsuccessful access attempt to the element security controlled data by unauthorized users/elements/processes f. Detected computer system viruses and worms g. Actions taken to contain or destroy a virus
			EOSD2510#B	ECS elements shall maintain an audit trail of: a. All accesses to the element security controlled data b. Users/processes/elements requesting access to element security controlled data c. Data access/manipulation operations performed on security controlled data d. Date and time of access to security controlled data e. Unsuccessful access attempt to the element security controlled data by unauthorized users/elements/processes f. Detected computer system viruses and worms g. Actions taken to contain or destroy a virus
C-CSS-21220	B	The CSS Security Service shall provide a mechanism to authenticate client/server applications using the socket protocol for inter-process communications.	ESN-1365#B	The ESN shall isolate FOS with secure interfaces.
C-CSS-22000	A	The CSS Message service shall provide an API for senders to send messages to receivers asynchronously without waiting for the receivers to receive it.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-22010	A	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.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-22040	A	The CSS Message Service shall provide an API for the sender to designate multiple receivers for asynchronous messages.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-22050	A	The CSS Message Service shall support multiple message queues so different groups of processes can use different message queues.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-22060	A	The CSS Message Service shall purge a message from the message queue after a user specified time irrespective of its delivery to the receivers.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-22065	A	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.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-22070	A	The CSS Message Service shall store undeliverable messages and retrieve and transmit them later.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-22080	B	The CSS Message Service shall provide an API for the receiver to register interest in receiving messages from a certain sender.	ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-22090	A	The CSS Message Service shall provide the capability to locate and send (push model) the messages to receivers.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-22100	A	The CSS Message Service shall provide a non blocking API for the receiver to contact the message queue and get (pull model) the message.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-22110	A	The CSS Message service shall support guaranteed delivery of the message to the receiver.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-22120	A	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.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-22130	A	The CSS Message service shall associate the receiver to a returned value and maintain that information locally until the sender requests that information.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-22140	A	The CSS Message Service shall provide an API for the sender of the message to receive return information stored at the message queue.	ESN-0450#A	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-22150	A	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 a set interval of time until the receiver is active.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-22180	B	The CSS Message Service shall provide an API that will allow thread processes to be scheduled.	ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-22190	B	In deferred synchronous mode, the CSS Message Service shall provide an API that will allow a user to retrieve the results of the execution of a thread.	ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-22200	B	The CSS Message Service shall provide an API that will supply the status of a thread process.	ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-22210	B	The CSS Message Service shall provide an API that will inform the user when a thread process has finished executing.	ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-24010	B	The CSS Lifecycle Service shall provide a generic instantiation capability that creates a new object for a client.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-24020	B	The CSS Lifecycle Service shall provide an API that accepts state initialization information.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-24030	B	The CSS Lifecycle Service shall provide an API that accepts resource preference information.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-24040	B	The CSS Lifecycle Service shall provide an API that returns an object invocation handle.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-24050	B	The CSS Lifecycle Service shall ensure that a server is available to service a user request.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-24060	B	The CSS Lifecycle Service shall act as an intermediary during the client server connection phase.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-24070	A	The CSS Lifecycle Service shall provide a way to shutdown an application process.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-24080	A	The CSS Lifecycle Service shall provide a way to suspend an application process.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-24090	A	The CSS Lifecycle Service shall provide a way to resume a suspend application process.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-24100	A	The CSS Lifecycle Service shall provide a way for server applications to construct an object (if it is not already running) and dispatch the incoming call to the object.	EOSD3000#B	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.
C-CSS-25010	A	The CSS Time Service shall adjust the time kept by the operating system at every node.	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-25020	A	The CSS Time Service shall be used to obtain timestamps that are based on Coordinated Universal Time (UTC).	ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25030	A	The CSS Time Service shall provide an API to retrieve timestamp information.	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25040	A	The CSS Time Service shall provide an API for converting between binary timestamps that use different time structures.	ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25050	A	The CSS Time Service shall provide an API for converting between binary timestamps and ASCII representations.	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25060	A	The CSS Time Service shall provide an API for converting between UTC time and local time.	ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25070	A	The CSS Time Service shall provide an API for manipulating binary timestamps.	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25080	A	The CSS Time Service shall provide an API for comparing two binary time values.	ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25090	A	The CSS Time Service shall provide an API for calculating binary time values.	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25100	A	The CSS Time Service shall provide an API for obtaining time zone information.	ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-25110	A	The CSS Time Service shall utilize a UTC based time provider.	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25120	A	The CSS Time Service shall provide the utilities required to synchronize system time across all components.	ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25130	A	The CSS Time Service shall have the capability to synchronize it's time to one or more external time sources.	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25140	A	The CSS Time Service shall maintain an accuracy of 500 milliseconds within all ECS distributed components.	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-25150	B	The CSS Time Service shall be interoperable with the time service provided within DCE environment	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-25160	B	The CSS Time Service shall support remote time access	ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
C-CSS-26010	A	The CSS Thread Service shall allow the option that each invocation of a server operation to run as a distinct thread.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-26020	A	The CSS Thread Service shall protect against conflicts between different threads accessing the same data.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-26030	A	The CSS Thread Service shall take into account the possibility that other threads may change shared data at any point. Code that will function correctly when executed by multiple concurrent threads is called thread-safe.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-26040	A	The CSS Thread Service shall provide an API that synchronizes the access of shared data between concurrent threads.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-26050	A	The CSS Thread Service shall provide a synchronizing object that is in one of two states: locked or unlocked.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-26060	A	The CSS Thread Service shall provide an API that allows each thread to lock the synchronizing object before it accesses the shared data.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-26065	A	The CSS Thread Service shall provide an API to release locks associated with resources.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-26070	A	The CSS Thread Service shall provide an API that allows each thread to unlock the synchronizing object when it is finished accessing that data.	ESN-0450#A	The ESN shall provide process-to-process communication service.
			ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-26080	A	The CSS Thread Service shall if the synchronizing object is locked by another thread, block the thread requesting the lock.	ESN-0450#B	The ESN shall provide process-to-process communication service.
			ESN-0450#A	The ESN shall provide process-to-process communication service.
C-CSS-28000	IR1	CSS Event Logger Service shall provide capability to record event and history data to a application specific log file.	ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0840#lr1	The ESN shall have error reporting and event logging.
			ESN-0910#lr1	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0900#lr1	Errors and events to be detected shall include at least: b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			PGS-0360#B	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			PGS-0360#A	The PGS shall generate a PGS processing log that accounts for all data processing activities.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0360#Ir1	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
C-CSS-28010	IR1	CSS Event Logger Service shall accept and record event time (when the event was generated, obtained from the Time Service) information.	ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			PGS-0360#A	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			PGS-0360#Ir1	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			PGS-0360#B	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
C-CSS-28020	IR1	CSS Event Logger Service shall accept and record the application information (name and version of the calling application).	PGS-0360#A	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			PGS-0360#B	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			PGS-0360#1r1	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-28025	A	CSS Event Logger Service shall support predetermined logging levels that provide different levels of information.	ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
C-CSS-28030	IR1	CSS Event Logger Service shall accept and record event message information.	ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0360#Ir1	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			PGS-0360#A	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			PGS-0360#B	The PGS shall generate a PGS processing log that accounts for all data processing activities.
C-CSS-28040	IR1	CSS Event Logger Service shall accept and record the event type information. (Type of the event: fault, performance)	PGS-0360#A	The PGS shall generate a PGS processing log that accounts for all data processing activities.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0360#B	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			PGS-0360#lr1	The PGS shall generate a PGS processing log that accounts for all data processing activities.
			ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
C-CSS-28060	IR1	CSS Event Logger Service shall inform M&O staff if the event disposition narrative by the application demands so.	ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-0840#Ir1	The ESN shall have error reporting and event logging.
			ESN-0910#Ir1	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: c. enable and disable event reports within a system d. manage error and event logging files

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0900#Ir1	Errors and events to be detected shall include at least: b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
C-CSS-28070	IR1	CSS Event Logger Service shall record the operator/principle information that is relevant for the generated event.	ESN-0840#Ir1	The ESN shall have error reporting and event logging.
			ESN-0910#Ir1	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0900#Ir1	Errors and events to be detected shall include at least: b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
C-CSS-28080	IR1	CSS Event Logger Service shall record the environment information for the generated event.	ESN-0840#A	The ESN shall have error reporting, event logging and generation of alerts.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0910#A	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0900#A	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
			ESN-1430#A	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#A	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
			ESN-0910#B	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: a. set, view, and change alert threshold values b. enable and disable alert notifications (alarms) within a system c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0900#B	Errors and events to be detected shall include at least: a. communications software version or configuration errors b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1430#B	The ESN shall provide the following security event functions: a. Event detection b. Event reporting c. Event logging
			ESN-1000#B	The ESN network management function shall have the capability to build histories for different types of errors and events, and the capability to analyze errors and recommend corrective action wherever practical.
			ESN-0840#lr1	The ESN shall have error reporting and event logging.
			ESN-0910#lr1	The ESN fault management shall provide the capability to perform the following functions, at a minimum, both locally and at the ESN network management facility: c. enable and disable event reports within a system d. manage error and event logging files
			ESN-0900#lr1	Errors and events to be detected shall include at least: b. communications hardware errors c. protocol errors d. performance degradation conditions e. telecommunications errors and failures
C-CSS-29000	B	The CSS Transaction Processing Service shall be object oriented.	ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-29010	B	The CSS Transaction Processing Service shall use the CSS Security services.	EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
C-CSS-29020	B	The CSS Transaction Processing Service shall support the management of OODCE-based servers.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-29030	B	The CSS Transaction Processing Service shall provide to the client and server the following features: a. Atomicity - All components of the transaction shall succeed or fail as a unit. b. Consistency - The actions performed by a transaction shall take data from one consistent state to another consistent state. c. Isolation - Transactions performed simultaneously shall not interfere with each other. d. Durability - The effect of committed transactions shall be permanent. Subsequent system failures shall not cause the unrecoverable loss of data.	ESN-1070#B	The ESN shall provide the capability to perform the following functions, at a minimum: a. generate/collect network statistics b. control collection/generation of network statistics c. store system statistics and statistical histories d. display the system statistics e. track end-to-end transaction performance
C-CSS-29040	B	The CSS Transaction Processing Service shall provide load balancing for OODCE-based servers.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-29050	B	The CSS Transaction Processing Service shall provide for the integrity of data by means of component rollback in the event of system failure.	EOSD2990#B	The ECS elements shall support the recovery from a system failure due to a loss in the integrity of the ECS data or a catastrophic violation of the security system.
C-CSS-29060	B	The CSS Transaction Processing Service shall provide client request queuing during data server unavailability.	ESN-1070#B	The ESN shall provide the capability to perform the following functions, at a minimum: a. generate/collect network statistics b. control collection/generation of network statistics c. store system statistics and statistical histories d. display the system statistics e. track end-to-end transaction performance

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-29070	B	The CSS Transaction Processing Service shall provide client request dequeuing of queued requests when data server has rebooted.	ESN-1070#B	The ESN shall provide the capability to perform the following functions, at a minimum: a. generate/collect network statistics b. control collection/generation of network statistics c. store system statistics and statistical histories d. display the system statistics e. track end-to-end transaction performance
C-CSS-29080	B	The CSS Transaction Processing Service shall provide the capability of recovering from multiple failures without loss of data.	EOSD2990#B	The ECS elements shall support the recovery from a system failure due to a loss in the integrity of the ECS data or a catastrophic violation of the security system.
C-CSS-60300	A	The CSS File Access Service shall provide transparent access to remote files.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0350#B	The Electronic Messaging Service, shall be capable of exchanging binary data.
			ESN-0290#B	The file transfer and management service shall be available in interactive and non-interactive services.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0290#A	The file transfer and management service shall be available in interactive and non-interactive services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0350#A	The Electronic Messaging Service, shall be capable of exchanging binary data.
C-CSS-60310	A	The CSS File Access Service shall support access control for the remote files.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0350#A	The Electronic Messaging Service, shall be capable of exchanging binary data.
			ESN-0290#A	The file transfer and management service shall be available in interactive and non-interactive services.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0290#B	The file transfer and management service shall be available in interactive and non-interactive services.
			ESN-0350#B	The Electronic Messaging Service, shall be capable of exchanging binary data.
			EOSD1990#A	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
C-CSS-60320	A	The CSS File Access Service shall provide location independent naming for the remote files.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0290#B	The file transfer and management service shall be available in interactive and non-interactive services.
			ESN-0350#B	The Electronic Messaging Service, shall be capable of exchanging binary data.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0350#A	The Electronic Messaging Service, shall be capable of exchanging binary data.
			ESN-0290#A	The file transfer and management service shall be available in interactive and non-interactive services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-60330	B	The CSS File Access Service shall provide uninterrupted file access in the event of single failure of the server.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-60340	B	The CSS File Access Service shall guarantee the accessed file to be in its most recent version.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-60350	B	The CSS File Access Service shall provide capability to change directory (cd) on the remote host.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-60500	IR1	The CSS File Access Service shall provide functionality for interactive and non-interactive transfer of files (send and receive) between two host systems.	PGS-0900#B	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			PGS-0900#A	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			DADS0190#A	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			NI-0400#Ir1	ECS shall have the capability to interface with NASA Data Processing Facilities (including the GSFC SDPF) via NOLAN to receive the following data (at a minimum): a. Science data b. Ancillary data c. Orbit data
			NI-0400#B	ECS shall have the capability to interface with NASA Data Processing Facilities (including the GSFC SDPF) via NOLAN to receive the following data (at a minimum): a. Science data b. Ancillary data c. Orbit data

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			DADS0190#B	<p>Each DADS shall receive from the SCF, at a minimum, the following:</p> <ul style="list-style-type: none"> a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			SCF-0120#B	<p>The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.</p>
			SCF-0120#A	<p>The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.</p>
			SCF-0120#lr1	<p>The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.</p>
			SCF-0110#B	<p>The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.</p>
			SCF-0110#A	<p>The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.</p>
			SCF-0110#lr1	<p>The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.</p>

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0100#A	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#Ir1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			PGS-0900#Ir1	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			SCF-0330#B	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#A	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#Ir1	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0100#B	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			NI-0400#A	ECS shall have the capability to interface with NASA Data Processing Facilities (including the GSFC SDPF) via NOLAN to receive the following data (at a minimum): a. Science data b. Ancillary data c. Orbit data

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			TRMM4110#Ir1	Communications between TSDIS and the ECS systems at the GSFC DAAC to transport the VIRS standard products, metadata, GPI, GPCP, and NMC ancillary data, and algorithms and documentation shall be provided by ESDIS.
			TRMM4110#B	Communications between TSDIS and the ECS systems at the GSFC DAAC to transport the VIRS standard products, metadata, GPI, GPCP, and NMC ancillary data, and algorithms and documentation shall be provided by ESDIS.
			TRMM4110#A	Communications between TSDIS and the ECS systems at the GSFC DAAC to transport the VIRS standard products, metadata, GPI, GPCP, and NMC ancillary data, and algorithms and documentation shall be provided by ESDIS.
			TRMM3120#Ir1	Communications between TSDIS and the ECS systems at the MSFC DAAC to transport the PR, TMI, and GV standard products, metadata, SSM/I ancillary data, algorithms, and documentation shall be provided by ESDIS.
			TRMM3120#B	Communications between TSDIS and the ECS systems at the MSFC DAAC to transport the PR, TMI, and GV standard products, metadata, SSM/I ancillary data, algorithms, and documentation shall be provided by ESDIS.
			TRMM3120#A	Communications between TSDIS and the ECS systems at the MSFC DAAC to transport the PR, TMI, and GV standard products, metadata, SSM/I ancillary data, algorithms, and documentation shall be provided by ESDIS.
			TRMM2060#B	The ECS systems at the MSFC DAAC shall, after notification by SPDF, retrieve LIS Level 0 production and quick-look data by an agreed upon file transfer protocol.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			TRMM2060#A	The ECS systems at the MSFC DAAC shall, after notification by SPDF, retrieve LIS Level 0 production and quick-look data by an agreed upon file transfer protocol.
			TRMM1060#lr1	The ECS systems at the LaRC DAAC shall, after notification by SDPF, retrieve CERES Level 0 production by an agreed-upon file transfer protocol.
			TRMM1060#B	The ECS systems at the LaRC DAAC shall, after notification by SDPF, retrieve CERES Level 0 production by an agreed-upon file transfer protocol.
			TRMM1060#A	The ECS systems at the LaRC DAAC shall, after notification by SDPF, retrieve CERES Level 0 production by an agreed-upon file transfer protocol.
			ESN-0290#A	The file transfer and management service shall be available in interactive and non-interactive services.
			DADS0190#lr1	Each DADS shall receive from the SCF, at a minimum, the following: g. Algorithms
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0290#B	The file transfer and management service shall be available in interactive and non-interactive services.
			ESN-0290#lr1	The file transfer and management service shall be available in interactive and non-interactive services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#Ir1	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services
C-CSS-60510	IR1	The CSS File Access Service shall be capable of transferring ASCII and binary files.	ESN-0280#B	The ESN shall provide file transfer and management service and as a minimum shall include the capability to transfer the following data types: a. Unstructured Text b. Binary Unstructured c. Binary Sequential d. Sequential Text
			DADS0190#A	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			ESN-0280#Ir1	The ESN shall provide file transfer and management service and as a minimum shall include the capability to transfer the following data types: a. Unstructured Text b. Binary Unstructured c. Binary Sequential d. Sequential Text
			PGS-0900#Ir1	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0100#Ir1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#B	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0110#A	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0120#Ir1	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#B	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0330#B	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#A	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#Ir1	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0120#B	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0120#A	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#lr1	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0100#A	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			PGS-0900#B	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			PGS-0900#A	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			SCF-0070#lr1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			SCF-0060#lr1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			DADS0190#B	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			ESN-0280#A	The ESN shall provide file transfer and management service and as a minimum shall include the capability to transfer the following data types: a. Unstructured Text b. Binary Unstructured c. Binary Sequential d. Sequential Text
C-CSS-60520	IR1	The CSS File Access Service shall support the File Transfer Protocol (FTP).	DADS0190#Ir1	Each DADS shall receive from the SCF, at a minimum, the following: g. Algorithms
			ESN-1170#A	The ESN shall provide necessary translation within supported file transfer and e-mail services.
			TRMM3120#A	Communications between TSDIS and the ECS systems at the MSFC DAAC to transport the PR, TMI, and GV standard products, metadata, SSM/I ancillary data, algorithms, and documentation shall be provided by ESDIS.
			TRMM3120#Ir1	Communications between TSDIS and the ECS systems at the MSFC DAAC to transport the PR, TMI, and GV standard products, metadata, SSM/I ancillary data, algorithms, and documentation shall be provided by ESDIS.
			TRMM4110#B	Communications between TSDIS and the ECS systems at the GSFC DAAC to transport the VIRS standard products, metadata, GPI, GPCP, and NMC ancillary data, and algorithms and documentation shall be provided by ESDIS.
			TRMM4110#A	Communications between TSDIS and the ECS systems at the GSFC DAAC to transport the VIRS standard products, metadata, GPI, GPCP, and NMC ancillary data, and algorithms and documentation shall be provided by ESDIS.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			TRMM4110#Ir1	Communications between TSDIS and the ECS systems at the GSFC DAAC to transport the VIRS standard products, metadata, GPI, GPCP, and NMC ancillary data, and algorithms and documentation shall be provided by ESDIS.
			TRMM3120#B	Communications between TSDIS and the ECS systems at the MSFC DAAC to transport the PR, TMI, and GV standard products, metadata, SSM/I ancillary data, algorithms, and documentation shall be provided by ESDIS.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			EOSD1750#Ir1	ECS elements shall receive data including the following types of supporting information from the ECS science community (TLs, TMs, PIs, and Co-Is): a. Algorithms b. Software fixes d. Integration support requests
			EOSD1607#Ir1	ECS shall receive data from near term Earth Probe missions to include the following as a minimum: a). TRMM data for temporary storage for testing purposes only.
			EOSD0500#Ir1	ECS shall perform the following major functions: d. Communications and Networking e. Data Input f. Data Processing
			SCF-0110#Ir1	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0110#B	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0120#A	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0330#lr1	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#B	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#A	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0120#B	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0120#lr1	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#A	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0100#B	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#A	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#lr1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			EOSD1760#A	The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is): a. Software Problem Reports b. Documentation c. Metadata (copies of inventories) d. Browse data e. Archived data f. Accounting information
			EOSD1750#A	ECS elements shall receive data including the following types of supporting information from the ECS science community (TLs, TMs, PIs, and Co-Is): a. Algorithms b. Software fixes c. Instrument calibration data d. Integration support requests e. Metadata for Special Products archiving f. Data transfer requests (inventories, directories, and browse) g. Data Quality/Instrument assessment h. Instrument operations information i. Ancillary data
			EOSD1607#A	ECS shall receive data from near term Earth Probe missions to include the following as a minimum: a). TRMM data for archive and distribution b). Landsat 7 data for archive and distribution including IGS metadata and browse.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0060#lr1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			DADS0190#A	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			SCF-0070#lr1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			DADS0190#B	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1170#B	The ESN shall provide necessary translation within supported file transfer and e-mail services.
			EOSD1750#B	ECS elements shall receive data including the following types of supporting information from the ECS science community (TLs, TMs, PIs, and Co-Is): a. Algorithms b. Software fixes c. Instrument calibration data d. Integration support requests e. Metadata for Special Products archiving f. Data transfer requests (inventories, directories, and browse) g. Data Quality/Instrument assessment h. Instrument operations information i. Ancillary data
			EOSD1760#B	The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is): a. Software Problem Reports b. Documentation c. Metadata (copies of inventories) d. Browse data e. Archived data f. Accounting information
			EOSD1607#B	ECS shall receive data from near term Earth Probe missions to include the following as a minimum: a). TRMM data for archive and distribution b). Landsat 7 data for archive and distribution including IGS metadata and browse.
			EOSD1760#lr1	The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is): a. Software Problem Reports

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-60530	A	The CSS File Access Service shall support the kerberized version of File Transfer Protocol for secured file transfers.	EOSD1750#A	ECS elements shall receive data including the following types of supporting information from the ECS science community (TLs, TMs, Pls, and Co-Is): a. Algorithms b. Software fixes c. Instrument calibration data d. Integration support requests e. Metadata for Special Products archiving f. Data transfer requests (inventories, directories, and browse) g. Data Quality/Instrument assessment h. Instrument operations information i. Ancillary data
			EOSD1990#A	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
			EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			TRMM3120#B	Communications between TSDIS and the ECS systems at the MSFC DAAC to transport the PR, TMI, and GV standard products, metadata, SSM/I ancillary data, algorithms, and documentation shall be provided by ESDIS.
			TRMM4110#B	Communications between TSDIS and the ECS systems at the GSFC DAAC to transport the VIRS standard products, metadata, GPI, GPCP, and NMC ancillary data, and algorithms and documentation shall be provided by ESDIS.
			TRMM4110#A	Communications between TSDIS and the ECS systems at the GSFC DAAC to transport the VIRS standard products, metadata, GPI, GPCP, and NMC ancillary data, and algorithms and documentation shall be provided by ESDIS.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			TRMM3120#A	Communications between TSDIS and the ECS systems at the MSFC DAAC to transport the PR, TMI, and GV standard products, metadata, SSM/I ancillary data, algorithms, and documentation shall be provided by ESDIS.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			EOSD1750#B	ECS elements shall receive data including the following types of supporting information from the ECS science community (TLs, TMs, PIs, and Co-Is): a. Algorithms b. Software fixes c. Instrument calibration data d. Integration support requests e. Metadata for Special Products archiving f. Data transfer requests (inventories, directories, and browse) g. Data Quality/Instrument assessment h. Instrument operations information i. Ancillary data
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-60600	IR1	The CSS File Access Service shall provide connection oriented operation for file transfers.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			PGS-0900#A	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			DADS0190#A	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			PGS-0900#Ir1	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			SCF-0100#Ir1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0100#B	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0110#A	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#lr1	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0330#B	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#A	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#lr1	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0120#B	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0120#A	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0120#lr1	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#B	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0100#A	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			SCF-0060#lr1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#lr1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0900#B	<p>The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			DADS0190#B	<p>Each DADS shall receive from the SCF, at a minimum, the following:</p> <ul style="list-style-type: none"> a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
C-CSS-60610	IR1	The CSS File Access Service shall allow selection of the file type (ASCII or binary).	ESN-0280#B	<p>The ESN shall provide file transfer and management service and as a minimum shall include the capability to transfer the following data types:</p> <ul style="list-style-type: none"> a. Unstructured Text b. Binary Unstructured c. Binary Sequential d. Sequential Text
			DADS0190#A	<p>Each DADS shall receive from the SCF, at a minimum, the following:</p> <ul style="list-style-type: none"> a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			ESN-0280#Ir1	<p>The ESN shall provide file transfer and management service and as a minimum shall include the capability to transfer the following data types:</p> <ul style="list-style-type: none"> a. Unstructured Text b. Binary Unstructured c. Binary Sequential d. Sequential Text

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0900#Ir1	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			SCF-0100#Ir1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#B	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0110#A	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0120#Ir1	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#B	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0330#B	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#A	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0330#Ir1	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0120#B	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0120#A	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#Ir1	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0100#A	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			PGS-0900#B	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			PGS-0900#A	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0280#A	The ESN shall provide file transfer and management service and as a minimum shall include the capability to transfer the following data types: a. Unstructured Text b. Binary Unstructured c. Binary Sequential d. Sequential Text
			DADS0190#B	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
C-CSS-60620	IR1	The CSS File Access Service shall support proxy mode of operation which enables transfer of files between two remote hosts.	DADS0190#B	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0900#B	<p>The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			ESN-0010#A	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			PGS-0900#lr1	<p>The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			SCF-0330#A	<p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p>
			SCF-0330#lr1	<p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p>
			SCF-0120#B	<p>The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.</p>

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0120#A	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0120#I1	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#B	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#A	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#I1	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0330#B	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0100#B	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#A	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#I1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			DADS0190#A	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			PGS-0900#A	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
C-CSS-60630	IR1	The CSS File Access Service shall provide capability to list remote files	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0900#A	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			DADS0190#A	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			SCF-0330#B	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#A	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0330#lr1	The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.
			SCF-0120#B	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0120#A	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0120#lr1	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#B	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#A	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#lr1	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0100#B	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#A	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#lr1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			PGS-0900#lr1	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			PGS-0900#B	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			DADS0190#B	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
C-CSS-60640	IR1	The CSS File Access Service shall support wildcards in files on the remote host.	DADS0190#B	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0900#B	<p>The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			ESN-0010#A	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			SCF-0330#B	<p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p>
			SCF-0330#A	<p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p>
			SCF-0330#I1	<p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p>
			SCF-0120#B	<p>The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.</p>

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0120#A	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0120#I1	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#B	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#A	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#I1	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0100#B	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#A	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.
			SCF-0100#I1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0900#Ir1	<p>The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			ESN-0010#B	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			PGS-0900#A	<p>The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			DADS0190#A	<p>Each DADS shall receive from the SCF, at a minimum, the following:</p> <ul style="list-style-type: none"> a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
C-CSS-60650	IR1	The CSS File Access service shall support anonymous FTP which allows read access to all users.	ESN-0290#B	The file transfer and management service shall be available in interactive and non-interactive services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			DADS0190#A	<p>Each DADS shall receive from the SCF, at a minimum, the following:</p> <ul style="list-style-type: none"> a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
			PGS-0900#A	<p>The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			SCF-0100#B	<p>The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.</p>
			SCF-0100#A	<p>The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.</p>
			SCF-0330#B	<p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p>
			SCF-0330#A	<p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p>
			SCF-0330#lr1	<p>The ECS shall have the capability to receive a Calibration Coefficient Update Package from the SCF. This package shall include a calibration coefficient file and other documentation needed to implement the updated coefficients.</p>

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0120#B	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0120#A	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0120#lr1	The ECS shall have the capability to receive Data Production Software Updates from the SCF. These Data Production Software Updates include modifications to any data production software already submitted to the ECS by the SCF. The Data Production Software Updates may include some or all the items required in the Data Production Software Delivery Package.
			SCF-0110#B	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#A	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0110#lr1	The ECS shall have the capability to receive Test Product Reviews from the SCF. These reviews shall include the comments and recommendations of the scientist at the SCF who has reviewed the Test Products.
			SCF-0100#lr1	The ECS shall have the capability to forward Test Products to the SCF. These products generated by the science software at the ECS will require the review of the scientist at the SCF who submitted the software.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			PGS-0900#1r1	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			ESN-0290#A	The file transfer and management service shall be available in interactive and non-interactive services.
			PGS-0900#B	The PGS shall send test products to the SCF for analysis. These shall contain the results of algorithm testing and shall contain the following information at a minimum: a. Algorithm identification b. Test time(s) c. Processor identification d. Test results
			DADS0190#B	Each DADS shall receive from the SCF, at a minimum, the following: a. Special products (L1-L4) b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents g. Algorithms
C-CSS-60800	A	The CSS File Access Service shall provide an option for scheduling file transfers in a batch mode.	ESN-0300#A	The file transfer and management non-interactive services shall be able to be scheduled.
			ESN-0300#B	The file transfer and management non-interactive services shall be able to be scheduled.
C-CSS-60810	A	The CSS File Access Service shall log results of the non-interactive operations to operator specified log files.	ESN-0300#B	The file transfer and management non-interactive services shall be able to be scheduled.
			ESN-0300#A	The file transfer and management non-interactive services shall be able to be scheduled.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-60820	A	The CSS File Access Service shall provide an option to send alarms and generate events if a scheduled operation fails.	ESN-0300#A	The file transfer and management non-interactive services shall be able to be scheduled.
			ESN-0300#B	The file transfer and management non-interactive services shall be able to be scheduled.
C-CSS-60900	A	The CSS File Access Service shall provide an API which allows applications to transfer files.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-60910	A	The CSS File Access Service shall allow for file type selection (ASCII or Binary).	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-60920	A	The CSS File Access Service shall accept authentication information for file transfers.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61010	A	The CSS Electronic Mail Service shall interoperate and exchange messages with external mail systems based on SMTP and X.400 protocols.	ESN-0340#B	The ESN shall interoperate and exchange messages and data with external SMTP and X.400 mail systems.
			ESN-0340#A	The ESN shall interoperate and exchange messages and data with external SMTP and X.400 mail systems.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61020	A	The CSS Electronic Mail Service shall be capable of sending and receiving the Multi-purpose Internet Mail Extensions (MIME) messages.	ESN-0345#A	The ESN shall be capable of transparently transmitting Multi-purpose Internet Mail Extensions (MIME) messages.
			ESN-0345#B	The ESN shall be capable of transparently transmitting Multi-purpose Internet Mail Extensions (MIME) messages.
C-CSS-61030	A	The CSS Electronic Mail Service shall use the existing X.400 gateway available at GSFC to support X.400 operations.	ESN-0340#B	The ESN shall interoperate and exchange messages and data with external SMTP and X.400 mail systems.
			ESN-0340#A	The ESN shall interoperate and exchange messages and data with external SMTP and X.400 mail systems.
C-CSS-61040	IR1	The CSS Electronic Mail Service shall provide translation between SMTP and X.400 protocol.	ESN-1170#B	The ESN shall provide necessary translation within supported file transfer and e-mail services.
			ESN-1170#Ir1	The ESN shall provide necessary translation within supported file transfer and e-mail services.
			ESN-1170#A	The ESN shall provide necessary translation within supported file transfer and e-mail services.
C-CSS-61050	IR1	The CSS Electronic Mail Service shall be accessible in interactive mode.	EOSD1750#Ir1	ECS elements shall receive data including the following types of supporting information from the ECS science community (TLs, TMs, PIs, and Co-Is): a. Algorithms b. Software fixes d. Integration support requests
			EOSD0500#Ir1	ECS shall perform the following major functions: d. Communications and Networking e. Data Input f. Data Processing
			SMC-2405#B	The LSM shall coordinate with the SMC in managing the training program for its element.
			SMC-2415#B	The LSM shall receive from the SMC descriptions and schedules for training courses.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD1750#A	<p>ECS elements shall receive data including the following types of supporting information from the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ul style="list-style-type: none"> a. Algorithms b. Software fixes c. Instrument calibration data d. Integration support requests e. Metadata for Special Products archiving f. Data transfer requests (inventories, directories, and browse) g. Data Quality/Instrument assessment h. Instrument operations information i. Ancillary data
			EOSD1760#A	<p>The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ul style="list-style-type: none"> a. Software Problem Reports b. Documentation c. Metadata (copies of inventories) d. Browse data e. Archived data f. Accounting information
			SMC-2450#B	<p>The SMC shall support the evaluation of the effectiveness of the training programs.</p>
			ESN-0010#A	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			SMC-2450#A	The SMC shall support the evaluation of the effectiveness of the training programs.
			SMC-2415#A	The LSM shall receive from the SMC descriptions and schedules for training courses.
			SMC-2405#A	The LSM shall coordinate with the SMC in managing the training program for its element.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			EOSD1760#B	The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is): a. Software Problem Reports b. Documentation c. Metadata (copies of inventories) d. Browse data e. Archived data f. Accounting information

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD1750#B	<p>ECS elements shall receive data including the following types of supporting information from the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ul style="list-style-type: none"> a. Algorithms b. Software fixes c. Instrument calibration data d. Integration support requests e. Metadata for Special Products archiving f. Data transfer requests (inventories, directories, and browse) g. Data Quality/Instrument assessment h. Instrument operations information i. Ancillary data
			EOSD1760#Ir1	<p>The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ul style="list-style-type: none"> a. Software Problem Reports
			ESN-0010#Ir1	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services
C-CSS-61060	IR1	The CSS Electronic Mail Service shall be accessible in non-interactive mode via API.	EOSD1760#Ir1	<p>The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ul style="list-style-type: none"> a. Software Problem Reports
			ESN-0010#Ir1	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD1760#B	<p>The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ul style="list-style-type: none"> a. Software Problem Reports b. Documentation c. Metadata (copies of inventories) d. Browse data e. Archived data f. Accounting information
			ESN-0010#B	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			EOSD1760#A	<p>The ECS elements shall send the following types of data at a minimum to the ECS science community (TLs, TMs, PIs, and Co-Is):</p> <ul style="list-style-type: none"> a. Software Problem Reports b. Documentation c. Metadata (copies of inventories) d. Browse data e. Archived data f. Accounting information

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61070	B	The CSS Electronic Mail Service shall support the Post Office Protocol (POP).	ESN-0340#B	The ESN shall interoperate and exchange messages and data with external SMTP and X.400 mail systems.
C-CSS-61290	A	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	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61310	A	The CSS Electronic Mail Service shall provide a MAILBOX where all incoming messages for operators will be stored.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61320	A	The CSS Electronic Mail Service shall provide operator defined folders to store messages for long term archive.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61330	A	The CSS Electronic Mail Service shall allow copying and/or moving messages from the MAILBOX to the operator specified folders.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61360	A	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	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61370	A	The CSS Electronic Mail Service shall provide an editor to compose a message.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61380	A	The CSS Electronic Mail Service shall provide a title/subject field for a message.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61390	A	The CSS Electronic Mail Service shall allow a message to be sent to multiple destinations.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61397	B	The CSS Electronic Mail Service shall provide on-line help functionality.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61400	A	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 consists of several operators.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61410	A	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.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61420	A	The CSS Electronic Mail Service shall provide a capability to maintain private mailing lists (each list may contain multiple destination) for individual operators.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61430	A	The CSS Electronic Mail Service shall allow attaching either text or binary files to a message.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0350#A	The Electronic Messaging Service, shall be capable of exchanging binary data.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0350#B	The Electronic Messaging Service, shall be capable of exchanging binary data.
C-CSS-61440	A	The CSS Electronic Mail Service shall allow discarding message(s) from the MAILBOX without saving.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61450	A	The CSS Electronic Mail Service shall have the capability to forward a message.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61460	A	The CSS Electronic Mail Service shall allow cut/copy/paste/delete/undo operations in the editor.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61470	A	The CSS Electronic Mail Service shall provide navigation methods to go the next or previous message in the MAILBOX or selected folder.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61490	A	The CSS Electronic Mail Service shall provide the capability to search for keywords in messages.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61500	A	The CSS Electronic Mail Service shall provide the capability to search the MAILBOX or a folder for keywords in title text.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61510	A	The CSS Electronic Mail Service shall provide the capability to search the MAILBOX or folders for a specific author.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61520	A	The CSS Electronic Mail Service shall accept mailing lists as valid destinations.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61800	A	The CSS Electronic Mail Service shall provide the capability to send an electronic mail message non-interactively from an application.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61810	A	The CSS Electronic Mail Service shall allow attaching multiple text or binary files to the mail message.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0350#A	The Electronic Messaging Service, shall be capable of exchanging binary data.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0350#B	The Electronic Messaging Service, shall be capable of exchanging binary data.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-61820	A	The CSS Electronic Mail Service shall accept a file name as input for the message text.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61840	A	The CSS Electronic Mail Service shall be capable of sending a message to multiple destinations.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-61850	A	The CSS Electronic Mail Service shall accept mailing lists as valid destinations.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62000	IR1	The CSS Bulletin Board Service shall be based on the following standards: a. TCP/IP b. NNTP c. SMTP d. Usenet message standard (RFC 850)	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
C-CSS-62010	IR1	The CSS Bulletin Board Service shall support multiple (configurable) bulletin boards (newsgroups).	SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SCF-0060#lr1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#lr1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62030	IR1	The CSS Bulletin Board Service shall provide concurrent access to multiple users (registered or non-registered).	EOSD0040#B	ECS shall provide users without prior approved accounts access to the system for descriptive information about ECS and the types of data it contains.
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			EOSD0040#A	ECS shall provide users without prior approved accounts access to the system for descriptive information about ECS and the types of data it contains.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
C-CSS-62040	IR1	The CSS Bulletin Board Service shall allow multiple messages for each bulletin board.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62050	A	The CSS Bulletin Board Service shall host the user registration service.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62060	A	The CSS Bulletin Board Service shall provide the capability for copying files.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62070	A	The CSS Bulletin Board Service shall support download of ECS toolkits.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			AM1-0220#A	The ECS shall have the capability to provide and the MISR, MOPITT, MODIS, and CERES PIs/TLs shall have the capability to receive IST toolkit software, IST toolkit software upgrades, and IST toolkit documentation.
			AM1-0220#B	The ECS shall have the capability to provide and the MISR, MOPITT, MODIS, and CERES PIs/TLs shall have the capability to receive IST toolkit software, IST toolkit software upgrades, and IST toolkit documentation.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2120#A	The SMC shall make available for automated distribution to authorized users all unlicensed toolkit software, toolkit software upgrades, and toolkit documentation.
			SMC-2120#B	The SMC shall make available for automated distribution to authorized users all unlicensed toolkit software, toolkit software upgrades, and toolkit documentation.
C-CSS-62080	A	The CSS Bulletin Board Service shall collect and maintain access history and statistical information for the service.	SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62100	IR1	The CSS Bulletin Board Service shall provide capabilities to authorized users (M&O staff) for: a. creating new bulletin board b. deleting existing bulletin board c. deleting message(s) from a bulletin board d. backing up bulletin boards e. forcing users off a bulletin board or the entire bulletin board service for backup f. collecting access history and/or statistical information. g. backing up bulletin boards.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62120	IR1	The CSS Bulletin Board Service shall provide the capability to respond to a posted message on a bulletin board by sending the response message to: a. the bulletin board (follow up) b. author of the original message (respond to author) c. named destinations (forward).	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62130	A	The CSS Bulletin Board Service shall provide a "What's new" feature which informs the user of the new information available on the bulletin boards.	SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62300	IR1	The CSS Bulletin Board Service shall be available to the users in interactive mode.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62305	IR1	The CSS Bulletin Board Service shall allow user to subscribe to bulletin boards.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62310	IR1	The CSS Bulletin Board Service shall allow user to unsubscribe bulletin boards.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62314	B	The CSS Bulletin Board Service shall allow the user to withdraw a message from bulletin board after posting.	ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-62317	B	The CSS Bulletin Board Service shall provide on-line help functionality.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-62320	IR1	The CSS Bulletin Board Service shall allow user to select a subscribed bulletin board for viewing summary of all messages in it.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62330	IR1	The CSS Bulletin Board Service shall provide the capability to respond to a message by sending the response to the bulletin board and/or to the author of the message and/or any other operator specified destination.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62340	IR1	The CSS Bulletin Board Service shall provide capability: a. to search for a string in message headers or in message text. b. to search by author c. to search by subject.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0060#lr1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SCF-0070#lr1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62350	IR1	The CSS Bulletin Board Service shall provide a catch-up feature which excludes user specified messages from appearing in the bulletin board when it is viewed next time.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62360	IR1	The CSS Bulletin Board Service shall allow the users to post messages to bulletin board(s).	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SCF-0070#Ir1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			SCF-0060#Ir1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62380	IR1	The CSS Bulletin Board Service shall allow users to copy/save a message to their local system.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			SCF-0070#lr1	The ECS shall have the capability to provide Integration and Test Specifications to the scientist at the SCF. These specifications are defined by the Data Processing Focus Team. These specifications are implemented in the Data Production Software Delivery Package and support smooth integration of the data production software into the ECS production environment.
			SCF-0060#lr1	The ECS shall have the capability to provide to the SCF the Toolkit Delivery and Update Package. This package includes the PGS toolkit which supplies tools for the emulation of the ECS production environment and contains a ECS-standardized software routines to aid in science data production software development.
			SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62390	A	The CSS Bulletin Board Service shall allow attaching ASCII or binary files to a message.	SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62800	A	The CSS Bulletin Board Service shall interface for the applications to post a message to bulletin boards.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
C-CSS-62810	A	The CSS Bulletin Board Service shall allow attaching ASCII and binary files to a message.	SMC-2610#B	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.
			SMC-2610#A	The SMC shall provide and maintain a bulletin board service with information on ECS status, events, and news.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
C-CSS-62820	A	The CSS Bulletin Board Service shall allow a message to be posted to multiple bulletin boards.	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#A	The ESN shall provide an ECS Bulletin Board capability.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-1181#B	The ESN shall provide an ECS Bulletin Board capability.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-63000	IR1	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.	ESN-0370#Ir1	The ESN shall provide interactive virtual terminal services.
			ESN-0010#Ir1	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0370#B	The ESN shall provide interactive virtual terminal services.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0370#A	The ESN shall provide interactive virtual terminal services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0080#A	The ECS shall have the capability to provide an Interactive Session Dialog with the SCF. This dialog, to aid integration and test of the data production software into the ECS production environment, shall support, at a minimum, general communications between the ECS and the SCF that include logins, mail messages, status reports, test coordination, test execution scripts, and solutions to minor problems.
			SCF-0080#Ir1	The ECS shall have the capability to provide an Interactive Session Dialog with the SCF. This dialog, to aid integration and test of the data production software into the ECS production environment, shall support, at a minimum, general communications between the ECS and the SCF that include logins, mail messages, status reports, test coordination, test execution scripts, and solutions to minor problems.
			SCF-0080#B	The ECS shall have the capability to provide an Interactive Session Dialog with the SCF. This dialog, to aid integration and test of the data production software into the ECS production environment, shall support, at a minimum, general communications between the ECS and the SCF that include logins, mail messages, status reports, test coordination, test execution scripts, and solutions to minor problems.
C-CSS-63010	IR1	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).	ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0370#A	The ESN shall provide interactive virtual terminal services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0370#B	The ESN shall provide interactive virtual terminal services.
			ESN-0010#Ir1	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services
			ESN-0370#Ir1	The ESN shall provide interactive virtual terminal services.
C-CSS-63020	IR1	The CSS Virtual Terminal shall be based on industry standard and accepted protocols (telnet and ktelnet).	ESN-0370#Ir1	The ESN shall provide interactive virtual terminal services.
			ESN-0010#Ir1	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0500#B	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
			ESN-0370#B	The ESN shall provide interactive virtual terminal services.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0370#A	The ESN shall provide interactive virtual terminal services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SCF-0080#A	The ECS shall have the capability to provide an Interactive Session Dialog with the SCF. This dialog, to aid integration and test of the data production software into the ECS production environment, shall support, at a minimum, general communications between the ECS and the SCF that include logins, mail messages, status reports, test coordination, test execution scripts, and solutions to minor problems.
			SCF-0080#Ir1	The ECS shall have the capability to provide an Interactive Session Dialog with the SCF. This dialog, to aid integration and test of the data production software into the ECS production environment, shall support, at a minimum, general communications between the ECS and the SCF that include logins, mail messages, status reports, test coordination, test execution scripts, and solutions to minor problems.
			SCF-0080#B	The ECS shall have the capability to provide an Interactive Session Dialog with the SCF. This dialog, to aid integration and test of the data production software into the ECS production environment, shall support, at a minimum, general communications between the ECS and the SCF that include logins, mail messages, status reports, test coordination, test execution scripts, and solutions to minor problems.
			EOSD0500#Ir1	ECS shall perform the following major functions: d. Communications and Networking e. Data Input f. Data Processing
C-CSS-63040	IR1	The CSS Virtual Terminal shall provide guest access to non-registered users to log into the ECS guest server.	EOSD0040#A	ECS shall provide users without prior approved accounts access to the system for descriptive information about ECS and the types of data it contains.
			ESN-0010#A	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0370#A	The ESN shall provide interactive virtual terminal services.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD0040#B	ECS shall provide users without prior approved accounts access to the system for descriptive information about ECS and the types of data it contains.
			ESN-0370#B	The ESN shall provide interactive virtual terminal services.
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
			ESN-0370#r1	The ESN shall provide interactive virtual terminal services.
			ESN-0010#r1	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services
C-CSS-63050	A	The CSS Virtual Terminal shall support kerberized version of the telnet protocol for secure authentication of users.	EOSD0500#A	ECS shall perform the following major functions: a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD1990#A	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
			EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
			EOSD0500#B	<p>ECS shall perform the following major functions:</p> <ul style="list-style-type: none"> a. EOS Mission Planning and Scheduling b. EOS Mission Operations c. Command and Control d. Communications and Networking e. Data Input f. Data Processing g. Data Storage h. Data Distribution i. Information Management j. End-to-End Fault Management k. System Management
C-CSS-63060	A	The CSS Virtual Terminal shall support X applications.	ESN-0010#A	<p>ESN shall provide the following standard services:</p> <ul style="list-style-type: none"> a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-64000	B	The CSS Dial-Up Access Service shall provide remote Internet access.	ESN-0010#B	ESN shall provide the following standard services: a. Data Transfer and Management Services b. Electronic Messaging Service c. Remote Terminal Service d. Process to Process Communication Service e. Directory and User Access Control Service f. Network Management Service g. Network Security and Access Control Service h. Internetwork Interface Services i. Bulletin Board Service
C-CSS-65000	B	The CSS Secure Web service shall support the Kerberos standard.	EOSD1990#B	The ECS system and elements shall employ security measures and techniques for all applicable security disciplines which are identified in the preceding documents. These documents shall provide the basis for the ECS security policy.
C-CSS-65010	B	The CSS Secure Web service shall support POSIX compliant Access Control List (ACL).	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65020	B	The CSS Secure Web service shall support at a minimum the GET and POST HTTP methods.	EOSD5030#B	ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.
C-CSS-65030	B	The CSS Secure Web service shall provide a registration interface for the user to register documents to the web server.	EOSD5030#B	ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-65040	B	Documents ACL on the web server shall be editable with any standard ACL editor.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65050	B	The CSS Secure service Web shall use DCE RPC's that will allow the server to use DCE provided services.	ESN-0450#B	The ESN shall provide process-to-process communication service.
C-CSS-65060	B	The CSS Secure Web service shall support the Data Encryption Standard (DES) to encrypt and decrypt data.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65070	B	The CSS Secure Web service shall support encryption of the HTTP protocol.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65080	B	The CSS Secure Web service shall support private keys.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65090	B	The CSS Secure Web service shall provide an interface for the administration of the web server.	ESN-0640#B	The ESN shall include management functions at each ECS element, equipment or gateway within the ESN.
C-CSS-65100	B	The CSS Secure Web service shall provide an API that will support the porting of existing applications to the DCE environment.	EOSD5030#B	ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-65110	B	The CSS Secure Web service shall support a two-way authentication and authorization for the use by the web server.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65120	B	The CSS Secure Web service shall authenticate and authorize DCE users using the web server.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65130	B	The CSS Secure Web service must provide HTML formatted error messages to the web browser.	ESN-0840#B	The ESN shall have error reporting, event logging and generation of alerts.
C-CSS-65140	B	The CSS Secure Web service shall provide a mechanism for non- DCE browsers to view non- secured documents on the web server.	EOSD5030#B	ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.
C-CSS-65150	B	The CSS Secure Web service shall provide a mechanism or DCE capable browser to view non- secured and secured documents on the web server.	EOSD5030#B	ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.
C-CSS-65160	B	The CSS Secure Web service shall support the X.500 standard for naming and locating DCE cells.	ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
C-CSS-65170	B	The CSS Secure Web service shall support the Domain Name Service specification.	ESN-0490#B	The ESN shall provide a name-to-attribute mapping Directory Service at a minimum.
C-CSS-65180	B	The CSS Secure Web service shall provide the capability to support encryption to keep data exchange between the browser and the server confidential.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-65190	B	All requests from a client shall provide the web server with the individual user name.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65200	B	The CSS Secure Web service shall use DCE's ACLs to protect all documents on the web server.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65210	B	The CSS Secure Web service shall use the Extended Generic Security Service API for message passing applications to use DCE security .	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality
C-CSS-65220	B	The CSS Secure Web service shall be based on the HTTP protocol for message passing.	EOSD5030#B	ECS shall enable the addition of information search and retrieval services, e.g. WAIS, WWW.
C-CSS-65230	B	The CSS Secure Web service shall support the browser used by the Client subsystem.	IMS-0120#B	The IMS shall provide, dependent upon the user's display device capabilities, a user-friendly interface with the following features at a minimum: a. Multiple window display b. Buttons and pull down menus c. Valid lists for all variables d. An information base of associations between variables (e.g., between instruments and geophysical parameters) e. Ability to restore a session after interruption f. Context-sensitive help g. Minimal and consistent use of non-standard keys h. Random movement through fields i. Capability to save and restore the contents of a menu or form j. Standardized use of commands and terminology across screens k. Self-explanatory, meaningful error messages l. Automatic acronym expansion, which can be enabled and disabled interactively m. Availability of a menu tree diagram n. Command language

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-CSS-65240	B	The CSS Secure Web service shall provide attributes to the browser indicating documents with special security restrictions.	ESN-1400#B	The following security functions and services, at a minimum, shall be provided: a. authentication b. access (authorization) control c. data integrity d. data confidentiality

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-21000	A	The Enterprise Communications Server shall be physically and functionally identical to the Enterprise Monitoring Server in supporting the CSMS requirements.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-HRD-21005	A	The Enterprise Communications Server shall share data with the Local Communications Server in supporting the CSMS requirements.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-HRD-21010	A	The Enterprise Communications Server shall preserve DAAC autonomy of operations.		
C-HRD-21015	A	The Enterprise Communications Server shall host the CSS software configuration items to create, with the Enterprise Monitoring Server and Management Workstations, an enterprise monitoring and coordination center for the ECS.	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-HRD-21100	A	The Enterprise Communications Server processor shall include a dedicated terminal to be used as a local systems operations console.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-21105	A	The Enterprise Communications Server processor shall be capable of expansion with additional quantities and types of peripherals.	SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-HRD-21110	A	The Enterprise Communications Server processor shall be upgradeable/replaceable within the same product family without major software modification or replacement of any peripheral or attached component.	SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-21115	IR1	The Enterprise Communications Server processor shall have the capability to support a POSIX compliant IEEE 1003.1 operating system (UNIX).	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#Ir1	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-HRD-21120	A	The Enterprise Communications Server processor terminal shall be compatible with the Management Workstation display device.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-21300	IR1	The Enterprise Communications Server data storage shall be compatible with POSIX compliant operating systems from several vendors.	EOSD5020#Ir1	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-HRD-21310	A	The Enterprise Communications Server data storage shall be compatible with the Communications Server short-term data storage.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-21315	A	The Enterprise Communications Server data storage shall support RAID level-5: striping with interleaved parity.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD4036#A	The operational availability of individual ESN segments shall be consistent with the specified operational availability of the supported ECS functions.
C-HRD-21320	A	The Enterprise Communications Server data storage shall have the following hot swappable components: a. Disks b. Power Supplies c. Fans d. Disk-array controllers	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
			EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-21325	A	The Enterprise Communications Server data storage shall be cross-strapped with the Enterprise Monitoring Server data storage in supporting the CSMS requirements.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
			EOSD4036#A	The operational availability of individual ESN segments shall be consistent with the specified operational availability of the supported ECS functions.
C-HRD-21335	A	The Enterprise Communications Server data storage shall be capable of archiving data to the ECS Data Server archive for data archive.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
			EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-21345	A	The Enterprise Communications Server data archive shall adhere to ECS data server archival requirements for data storage and retrieval.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
			EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-21505	A	The Enterprise Communications Server peripheral disk drives shall be capable of retrieving data stored from both the Enterprise Communications server data storage and data archive.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-21530	A	The Enterprise Communications Server peripherals shall support at least one tape drive.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
			EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-21535	A	The Enterprise Communications Server peripheral tape drive shall have the following characteristics: a. 4mm Digital Audio Tape format b. Accept industry standard magnetic 4mm DAT (i.e. DDS-90) c. Data transfer rate of 200KB/sec	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
			EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-21540	A	The Enterprise Communications Server tape drives shall be upgradeable/replaceable within the same product family.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
			SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-HRD-21565	A	The Enterprise Communications Server peripherals shall support at least one CD-ROM drive.	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-HRD-21570	A	The Enterprise Communications Server peripheral CD-ROM drive shall have the following characteristic: a. Accept 600MB Compact Disk	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-21575	A	The Enterprise Communications Server peripheral CD-ROM drives shall be upgradeable/replaceable within the same product family.	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-HRD-22000	A	The Local Communications Server shall be physically and functionally identical to the Local Management Server in supporting the CSMS requirements.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-HRD-22005	A	The Local Communications Server shall share data with the Enterprise Communications Server in supporting the CSMS requirements.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-HRD-22010	A	The Local Communications Server shall be configurable according to local DAAC user authentication/authorization policy and preserve other DAAC autonomy of operations.		
C-HRD-22015	A	The Local Communications Server shall host the CSS software configuration items to create, with the Local Management Server and Management Workstations, a local system management center for each ECS DAAC.	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-HRD-22100	A	The Local Communications Server processor shall include a dedicated terminal to be used as a local systems operations console.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-22105	A	The Local Communications Server processor shall be capable of expansion with additional quantities and types of peripherals.	SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-22110	A	The Local Communications Server processor shall be upgradeable/replaceable within the same product family without major software modification or replacement of any peripheral or attached component.	SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-HRD-22115	A	The Local Communications Server processor shall have the capability to support a POSIX compliant IEEE 1003.1 operating system (UNIX).	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-HRD-22120	A	The Local Communications Server processor terminal shall be compatible with the Management Workstation display device.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-22300	A	The Local Communications Server data storage shall be compatible with POSIX compliant operating systems from several vendors.	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-HRD-22310	A	The Local Communications Server short-term data storage shall be compatible with the Enterprise Communications Server intermediate-term data storage.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-HRD-22315	A	The Local Communications Server data storage shall support RAID level-5: striping with interleaved parity.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
			EOSD4036#A	The operational availability of individual ESN segments shall be consistent with the specified operational availability of the supported ECS functions.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-22320	A	The Local Communications Server data storage shall have the following hot swappable components: a. Disks b. Power Supplies c. Fans d. Disk-array controllers	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-HRD-22325	A	The Local Communications Server data storage shall be cross-strapped with the Local Management Server short-term data storage in supporting the CSMS requirements.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
			EOSD4036#A	The operational availability of individual ESN segments shall be consistent with the specified operational availability of the supported ECS functions.
C-HRD-22335	A	The Local Communications Server data storage shall be capable of archiving data to the ECS Data Server archive.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
			EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-HRD-22345	A	The Local Communications Server data archive shall adhere to ECS Data Server archival requirements for data storage and retrieval.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
			EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-22505	A	The Local Communications Server peripheral disk drives shall be capable of retrieving data stored from both the Local Communications server data storage and data archive.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-22530	A	The Local Communications Server peripherals shall support at least one tape drive.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
			EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-22535	A	The Local Communications Server peripheral tape drive shall have the following characteristics: a. 4mm Digital Audio Tape format b. Accept industry standard magnetic 4mm DAT (i.e. DDS-90) c. Data transfer rate of 200KB/sec	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
			EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-HRD-22540	A	The Local Communications Server tape drives shall be upgradeable/replaceable within the same product family.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-HRD-22565	A	The Local Communications Server peripherals shall support at least one CD-ROM drive.	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-HRD-22570	A	The Local Communications Server peripheral CD-ROM drive shall have the following characteristic: a. Accept 600MB Compact Disk	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-HRD-22575	A	The Local Communications Server peripheral CD-ROM drives shall be upgradeable/replaceable within the same product family.	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-HRD-23000	A	The Bulletin Board Server shall share data with the Enterprise Communications Server in supporting the CSMS requirements.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-HRD-23005	A	The Bulletin Board Server shall preserve DAAC autonomy of operations and aggregate all ECS DAAC authentication/authorization policies by user type and DAAC, to provide a integrated view of ECS for user registration, account administration, and authentication/authorization to ECS services.	ESN-1360#A	The ESN shall control access of processes and users through an authentication and authorization service that meets GNMP standards.
C-HRD-23010	A	The Bulletin Board Server shall host the CSS software configuration items to create a single, secure unified access to all ECS services.	SMC-2620#A	The SMC shall maintain via the ECS bulletin board service, the SMC toolkit consisting of a list of SDPS approved CASE tools and references to standards for exchanging data for scientist use.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-23015	A	The Bulletin Board Server shall host ECS client software and toolkits for ECS-external distribution.	SMC-2620#A	The SMC shall maintain via the ECS bulletin board service, the SMC toolkit consisting of a list of SDPS approved CASE tools and references to standards for exchanging data for scientist use.
C-HRD-23100	A	The Bulletin Board Server processor shall include a dedicated terminal to be used as a local systems operations console.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance
C-HRD-23105	A	The Bulletin Board Server processor shall be upgradeable/expandable with additional quantities and types of peripherals.	SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-HRD-23110	A	The Bulletin Board Server processor shall be upgradeable/replaceable within the same product family without the need for any perturbation of any software or replacement of any peripheral or attached component.	SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.
C-HRD-23115	IR1	The Bulletin Board Server processor shall have the capability to support a POSIX compliant IEEE 1003.1 operating system (UNIX).	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#Ir1	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-HRD-23120	A	The Bulletin Board Server processor terminal shall be compatible with the Management Workstation display device.	EOSD1703#A	ECS shall provide maintenance and operations interfaces to the DAACs to support the functions of: a). System Management b). Science Algorithm Integration c). Product Generation d). Data Archive/Distribution e). User Support Services f). System Maintenance

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-23300	IR1	The Bulletin Board Server data storage shall be compatible with POSIX compliant operating systems from several vendors.	EOSD5020#Ir1	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
C-HRD-23310	A	The Bulletin Board Server data storage shall be capable of archiving data to the ECS data server archive for long-term storage and software/toolkit safestore.	EOSD4035#A	The ESN shall have no single point of failure for functions associated with network databases and configuration data.
C-HRD-23320	A	The Bulletin Board Server data archive shall adhere to ECS data server archival requirements for data storage and retrieval.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-HRD-23530	A	The Bulletin Board Server peripherals shall support at least one tape drive.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-HRD-23535	A	The Bulletin Board Server peripheral tape drive shall have the following characteristics: a. 4mm Digital Audio Tape format b. Accept industry standard magnetic 4mm DAT (i.e. DDS-90) c. Data transfer rate of 200KB/sec	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
C-HRD-23540	A	The Bulletin Board Server tape drives shall be upgradeable/replaceable within the same product family.	EOSD0030#A	ECS shall, during its lifetime, ingest, archive distribute and provide search and access for EOS TRMM, Landsat 7 (including IGS metadata and browse) and related non-EOS data and products.
			SMC-2510#A	The SMC shall provide at a minimum system-wide configuration management for the operational hardware, scientific and system software, and the SMC toolkit contained within ECS. The management system shall support the migration of hardware and software upgrades into the operational environment.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-23565	A	The Bulletin Board Server peripherals shall support at least one CD-ROM drive.	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-HRD-23570	A	The Bulletin Board Server peripheral CD-ROM drive shall have the following characteristic: a. Accept 600MB Compact Disk	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-HRD-23575	A	The Bulletin Board Server peripheral CD-ROM drives shall be upgradeable/replaceable within the same product family.	SMC-2320#A	The SMC shall monitor the consumable inventory within each element for items used by the system including, at a minimum: a. Computer tapes b. Computer disks c. Computer paper
C-HRD-26000	A	The Enterprise Communications Server shall be capable of 100 percent growth in the processing speed specified in Appendix A of the current version of 304-CD-003 without modifications or upgrade to software.	SMC-0300#A	The SMC shall be designed to accommodate 100 percent growth in processing speed without requiring modifications or upgrades to existing applications software.
C-HRD-26005	A	The Enterprise Communications Server shall be capable of 100 percent growth in the storage capacity specified in Appendix A of the current version of 304-CD-003 without modifications or upgrade to software.	SMC-0310#A	The SMC shall be designed to accommodate 100 percent growth in storage capacity without requiring modifications or upgrades to existing applications software.
C-HRD-26010	A	The Local Communications Server shall be capable of 100 percent growth in the processing speed specified in Appendix A of the current version of 304-CD-003 without modifications or upgrade to software.	SMC-0300#A	The SMC shall be designed to accommodate 100 percent growth in processing speed without requiring modifications or upgrades to existing applications software.

Communications Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
C-HRD-26015	A	The Local Communications Server shall be capable of 100 percent growth in the storage capacity specified in Appendix A of the current version of 304-CD-003 without modifications or upgrade to software.	SMC-0310#A	The SMC shall be designed to accommodate 100 percent growth in storage capacity without requiring modifications or upgrades to existing applications software.
C-HRD-26020	A	The Enterprise Communications Server shall be capable of meeting the capacity and performance characteristics of Appendix A of the current version of 304-CD-003.	EOSD4030#A	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.
C-HRD-26025	A	The Local Communications Server shall be capable of meeting the capacity and performance characteristics of Appendix A of the current version of 304-CD-003.	EOSD4030#A	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.
C-HRD-26030	A	The Bulletin Board Server shall be capable of meeting the capacity and performance characteristics of Appendix A of the current version of 304-CD-003.	EOSD4030#A	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.
C-HRD-27000	A	The CSS-DCHCI hardware selection criteria shall meet overall ECS security policies and system requirements.	EOSD2200#A	Selection criteria meeting overall ECS security policies and system requirements shall be applied when selecting hardware.
C-HRD-27005	A	The CSS-DCHCI Bulletin Board Server shall provide a security perimeter for ECS.	EOSD2200#A	Selection criteria meeting overall ECS security policies and system requirements shall be applied when selecting hardware.
C-HRD-27010	A	The CSS-DCHCI Enterprise and Local Communications Servers shall be configured to provide autonomous DAAC security perimeters, FOS isolation, and an Iso-cell ECS security perimeter.	EOSD2200#A	Selection criteria meeting overall ECS security policies and system requirements shall be applied when selecting hardware.
C-HRD-28000	IR1	The CSS-DCHCI Enterprise Communications Server shall maintain one backup of all software and key data items in a separate physical location.	EOSD3200#A	A minimum of one backup which is maintained in a separate physical location (i.e., different building) shall be maintained for ECS software and key data items (including security audit trails and logs).

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L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD3200#Ir1	A minimum of one backup which is maintained in a separate physical location (i.e., different building) shall be maintained for ECS software.
C-HRD-28005	A	The CSS-DCHCI Local Communications Server shall maintain one backup of all software and key data items in a separate physical location.	EOSD3200#A	A minimum of one backup which is maintained in a separate physical location (i.e., different building) shall be maintained for ECS software and key data items (including security audit trails and logs).
C-HRD-28020	A	The CSS DCHCI Enterprise Communications Server at the SMC shall be configured to support the SMC function of Gathering and Disseminating System Management Information's availability requirement of .998 and a mean down time of <= 20 minutes during times of staffed operation.	EOSD4030#A	The SMC function of gathering and disseminating system management information shall have an operational availability of .998 at a minimum (.999998 design goal) and an MDT of 20 minutes or less (5 minutes design goal), for critical services.

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