DAAC - ASTER GDS Interface Confidence Test - ICT12

The ASTER GDS and ECS combine to provide ground support for mission operations and science data processing for the ASTER instrument on board the EOS AM-1 spacecraft. Ground support includes the following: science data processing, distribution, and archival; and ground systems communication and management. Unless otherwise noted, elements that support the ECS ASTER GDS interface are located at the Earth Resources Observation System (EROS) Data Center (EDC) DAAC in Sioux Falls, South Dakota.

Test Objectives:

- Verify interfaces between ECS and the ASTER GDS.
- Verify data transfer protocols between ECS and the ASTER GDS.
- Verify interoperability between ECS and the ASTER GDS.

Test Configuration:

Hardware and software configurations at the ASTER GDS and each ECS site are managed and tracked by the M&O organization at that site. The most current configuration status report will be obtained prior to the start of testing and be referenced in the test report. Exhibit ICT12.1 depicts the ECS/ASTER GDS Context Diagram, and Exhibit ICT12.2 depicts the ECS/ASTER Test Configuration.

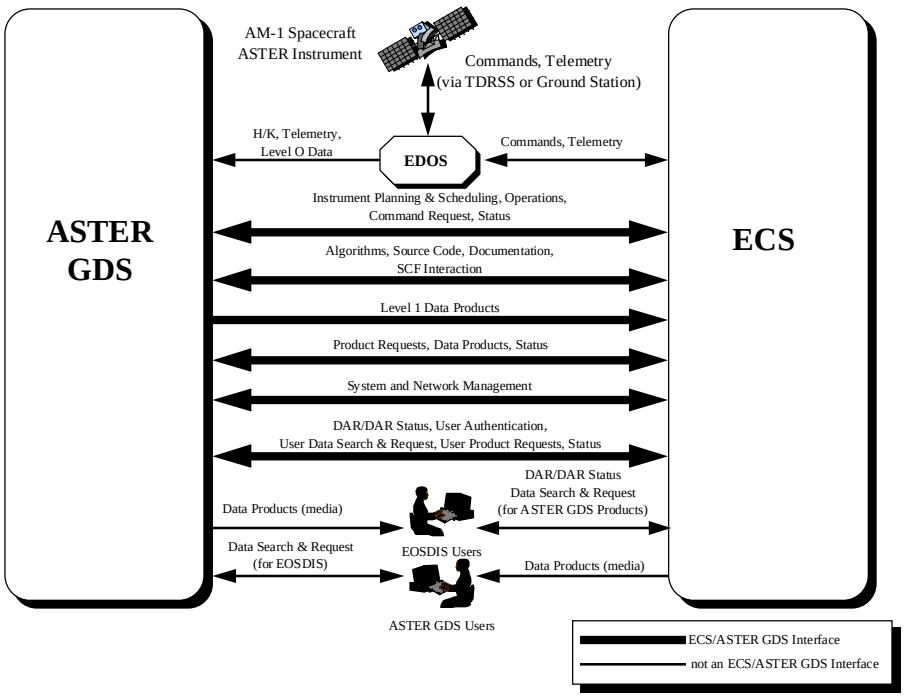

Exhibit ICT12.1 - ECS/ASTER GDS Context Diagram

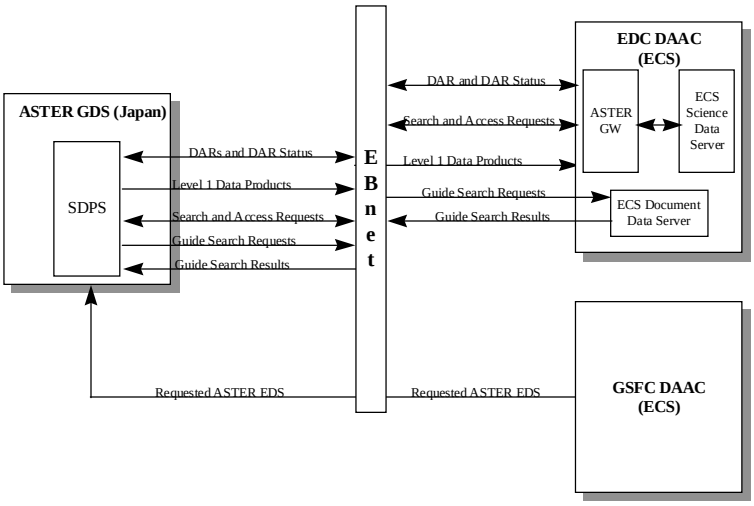

Exhibit ICT12.2 - ECS/ASTER GDS Test Configuration

<u>Participants and Support Requirements</u>:

Participants:

M&O Support at the ASTER GDS and ECS (EDC and GSFC) DAACs
SDPS user to supply data for ingest

Communications:

Voice - Telephone
Data - EBnet (ECS to Trans Pacific Link)
ASTER Data Network (ADN) (ASTER GDS to Trans Pacific Link)

Equipment and Software:

TBD

Test Tools:

TBD

Test Data:

TBD

Functional Thread Test Case

Thread ID: V2.0-ICT-12 **Modified:** 1/10/97 **Description:** DAAC - ASTER GDS Interface Confidence Test

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Test Objectives:

· Verify interfaces between ECS and the ASTER GDS.
· Verify data transfer protocols between ECS and the ASTER GDS.
· Verify interoperability between ECS and the ASTER GDS.

Test Case ID: V2.0-ICT-12.001 **Modified:** 1/10/97 **Description:** This test verifies the internetworking protocols supporting ECS-ASTER GDS data exchanges. They are based on protocols and standards corresponding to the Open Systems Interconnection (OSI) reference model. The tests are as follows:

· Verify the Internet Protocol (IP) connection between ECS and ASTER GDS via ECS network monitoring software (HP OpenView, Tivoli).

· Verify guaranteed data deliveries between host computers via the Transmission Control Protocol (TCP) connection between ECS and ASTER GDS.

· Verify file transfer capabilities between ECS and ASTER GDS via File Transfer Protocol (ftp).

· Verify e-mail and e-mail transfer capabilities between ECS and ASTER GDS via the Simple Mail Transfer Protocol (SMTP).

· Verify ASTER GDS connection to ECS bulletin board services via the Network News Transfer Protocol (NNTP).

Objectives:

Configuration:

Verified Requirements:
ASTER-1030
ASTER-1045
ASTER-1060
ASTER-1065

Data Inputs:

Methods for Results Analysis:

Assumptions/Constraints:

Step ID	Test Station	Operator Actions/ Equipment Operation:	Expected Results / Evaluation Criteria:	Comments	Verified Reqs:	Last Modified:

Step ID	Test Station	Operator Actions/ Equipment O	Expected Results / Evaluation	Comments	Verified Reqs:	Last Modified:
1.001		TBS				2/12/97

Actions Required after Program Stop/Indicated Error:

Procedures for Reducing/Analyzing Results:

Functional Thread Test Case

Thread ID: V2.0-ICT-12 **Modified:** 1/10/97 **Description:**

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Test Objectives:

· Verify interfaces between ECS and the ASTER GDS.
· Verify data transfer protocols between ECS and the ASTER GDS.
· Verify interoperability between ECS and the ASTER GDS.

Test Case ID: V2.0-ICT-12.002 **Modified:** 1/10/97 **Description:**

The objective of this test is to verify various electronic data exchanges between the ECS SDPS and the ASTER GDS SDPS. The data exchanges tested are as follows: 1) Catalog Interoperability; 2) Data Acquisition Requests (DARs); 3) Data Shipping Notices; and 4) SDPS Data Products Delivery. The tests are as follows:

· Verify the following data flows between ASTER SDPS and the (ECS) ASTER Gateway:

1. Directory Search Requests and Results
2. Inventory Search Requests and Results
3. Acknowledge
4. Guide Search Request/Guide Search Results
5. Browse Requests and Results
6. Product Requests and Results
7. Quit
8. Statistics
9. Pong
10. Product Delivery and Billing (TBR)

· Verify the following data flow between ASTER SDPS and the ECS Document Data Server:

1. Guide Search Request/Guide Search Results

· Verify that the ASTER GDS SDPS and ECS SDPS for Data Acquisition Requests (DARs) can exchange data via Application Programming Interfaces (APIs). Verify that the APIs provide interface between the ECS SDPS Client GUI and the ASTER GDS DAR Client application.

· Verify the proper media, format and storage rules of Level 1 data products delivered to the ECS SDPS. Verify that the ASTER GDS sends a Data Shipping Notices to ECS via e-mail when the tapes for delivery have been completed.

Objectives:

Configuration:

Verified Requirements:
ASTER-0010
ASTER-0020
ASTER-0030

Step ID	Test Station	Operator Actions/ Equipment O	Expected Results / Evaluation	Comments	Verified Reqs:	Last Modified:
						ASTER-0100 ASTER-0110 ASTER-0120 ASTER-0130 ASTER-0700 ASTER-0760 ASTER-0770 ASTER-0800 ASTER-0805 ASTER-0810 ASTER-0815 ASTER-0820 ASTER-0825 ASTER-0830 ASTER-0835 ASTER-0840 ASTER-0845 ASTER-0850 ASTER-0855 ASTER-0860 ASTER-0865 ASTER-0870 ASTER-0875 ASTER-0880 ASTER-0885 ASTER-0890 ASTER-0895 ASTER-0900 ASTER-0905 ASTER-0910 ASTER-0915 ASTER-0920 ASTER-0925 ASTER-0930 ASTER-0935 ASTER-0940 ASTER-0945 ASTER-0950 ASTER-0955 ASTER-0960 ASTER-0965

Data Inputs:

Methods for Results Analysis:

Assumptions/Constraints:

Step ID	Test Station	Operator Actions/ Equipment Operation:	Expected Results / Evaluation Criteria:	Comments	Verified Reqs:	Last Modified:

Step ID	Test Station	Operator Actions/ Equipment O	Expected Results / Evaluation	Comments	Verified Reqs:	Last Modified:
1.001		TBS				2/12/97

Actions Required after Program Stop/Indicated Error:

Procedures for Reducing/Analyzing Results:

Functional Thread Test Case

Thread ID: V2.0-ICT-12 **Modified:** 1/10/97 **Description:** DAAC - ASTER GDS Interface Confidence Test

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Test Objectives:

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· Verify data transfer protocols between ECS and the ASTER GDS.
· Verify interoperability between ECS and the ASTER GDS.

Test Case ID: V2.0-ICT-12.003 **Modified:** 1/10/97 **Description:** This test verifies the network and system status exchange interfaces between GSFC DAAC and the ASTER GDS. The tests are as follows:

· Verify the exchange of Expedited L0 from GSFC DAAC to ASTER GDS.

Objectives:

Configuration:

Verified Requirements:

Data Inputs:

Methods for Results Analysis:

Assumptions/Constraints:

Step ID	Test Station	Operator Actions/ Equipment Operation:	Expected Results / Evaluation Criteria:	Comments	Verified Reqs:	Last Modified:
1.001		TBS				2/12/97

Actions Required after Program Stop/Indicated Error:

Procedures for Reducing/Analyzing Results:

Functional Thread Test Case

Thread ID: V2.0-ICT-12 **Modified:** 1/10/97 **Description:** DAAC - ASTER GDS Interface Confidence Test

The ASTER GDS and ECS combine to provide ground support for mission operations and science data processing for the ASTER instrument on board the EOS AM-1 spacecraft. Ground support includes the following: spacecraft and instrument mission operations (planning, scheduling, control, monitoring, and analysis); science data processing, distribution, and archival; and ground systems communication and management. Unless otherwise noted, elements that support the ECS ASTER GDS interface are located at the Earth Resources Observation System (EROS) Data Center (EDC) DAAC in Sioux Falls, South Dakota.

Test Objectives:

· Verify interfaces between ECS and the ASTER GDS.
· Verify data transfer protocols between ECS and the ASTER GDS.
· Verify interoperability between ECS and the ASTER GDS.

Test Case ID: V2.0-ICT-12.004 **Modified:** 1/10/97 **Description:** This test verifies system performance parameters between ECS and the ASTER GDS. The tests are as follows:

TBS

Objectives:

Configuration:

Verified Requirements:

Data Inputs:

Methods for Results Analysis:

Assumptions/Constraints:

Step ID	Test Station	Operator Actions/ Equipment Operation:	Expected Results / Evaluation Criteria:	Comments	Verified Reqs:	Last Modified:
1.001		TBS				2/12/97

Actions Required after Program Stop/Indicated Error:

Procedures for Reducing/Analyzing Results: