4.2.6.6 Lost User Password Scenario

This scenario describes how a User Services representative would help a user who has forgotten his password to reestablish a temporary password via a policy driven user verification procedure.

A user calls User Services because he has forgotten his password. The representative clicks on the User Profile icon to start the application. The representative enters the user's name to display the current profile and the application queries the management server for the user profile information. When the information is displayed, the representative performs appropriate Policy driven verification procedures to verify the User's Identity via the user profile information. Upon verification, the representative clicks on the security server icon, changes the user's password to a temporary password. The application submits the updated password to the security server. The representative conveys the temporary password to the user in an appropriate Policy driven manner.

Refer to Figure 4.2.6.6-1 for a pictorial description and Table 4.2.6.6-1 for a sequence of events of the Lost User Password Scenario

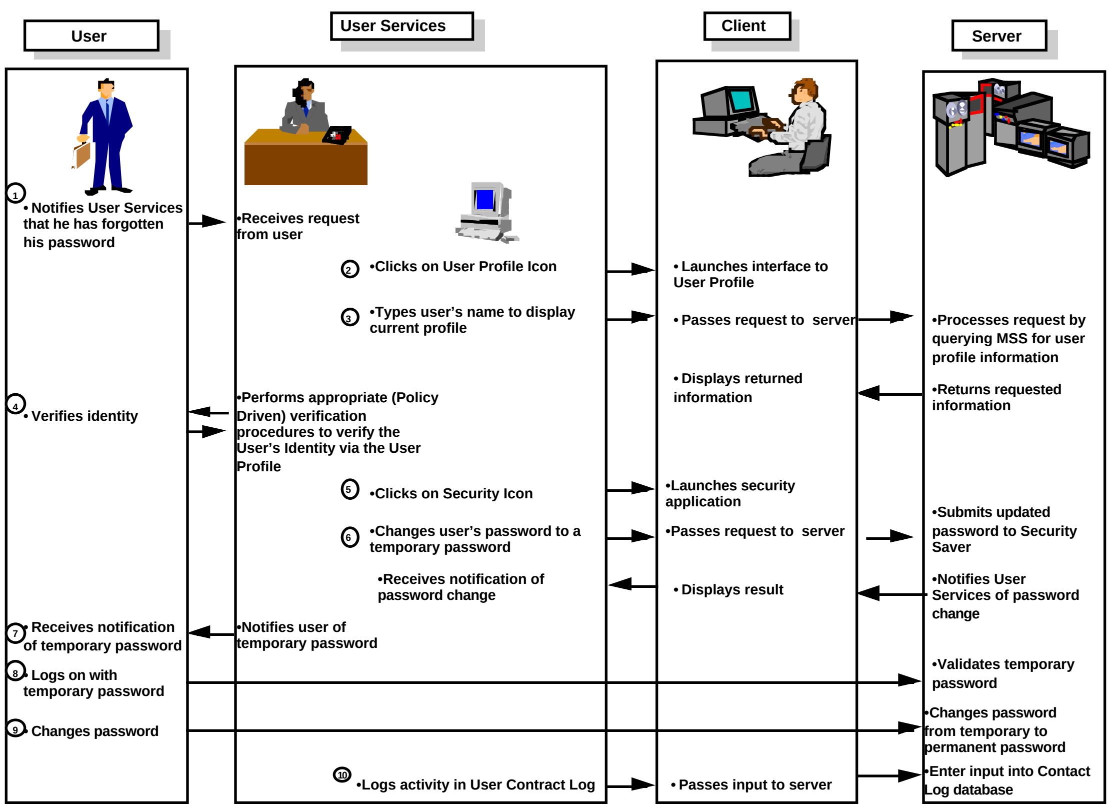

Figure 4.2.6.6-1 Lost User Password Scenario

Table 4.2.6.6-1 Lost User Password Scenario

Step	Operator/User	System	Purpose
1	User notifies User Services that he has forgotten his password	N/A	User providing request for password to User Services
2	User Services Representative clicks on User Profile icon	User Profile application starts up on the client	Make user profile information accessible
3	User Services Representative enters User's Name to display current profile	Application queries MSS for user profile information and displays the information	Make requested information accessible
4	User Services representative performs appropriate (Policy Driven) verification procedures to verify the User's Identity via the user profile.	N/A	Validate user
5	User Services Representative clicks on Security icon	Security application starts up on the client	Access to GUI for changing passwords
6	The representative changes user's password to a temporary password	Application submits updated password to Security Server	Allow user to logon with changed password
7	Representative conveys the temporary password to user in an appropriate (Policy Driven) manner	N/A	Provide password to user
8	User logs in with temporary password	Security server validates user with temporary password	Allow user access
9	User changes password	Security server updates password	Permanently change password
10	User Services records activity in User Contact Log	Accept inputs and write record to database	Provide permanent record of work performed

4.2.6.7 Cross DAAC Referrals Scenario

This scenario describes how User Services personnel at a DAAC provides other DAACs with information in response to user inquiries. The scenario illustrates how User Services at two different DAACs can coordinate to respond to a single user inquiry.

The scenario involves a user's request for data. The User Services representative first globally searches ECS inventories to determine whether the requested data are available, and from which DAAC(s). When it is determined that the requested data items are available, The User Services representative then mails the query along with a textual description of the problem and a transcription of the user request to the DAAC holding the requested data. The receiving DAAC User Services representative has all the background information in hand to research and solve the problem, and if necessary work with the user. The DAAC holding the data can use the ESST to open and complete the query sent from the first DAAC. The query is submitted, and from the results an order is submitted on behalf of the user. Refer to scenario 4.2.6.4, Place an Order for a

Potential User, for a more details on submission of order for users. Refer to Figure 4.2.6.7-1 for a pictorial description and Table 4.2.6.7-1 for a sequence of events of the Cross DAAC Referrals Scenario.

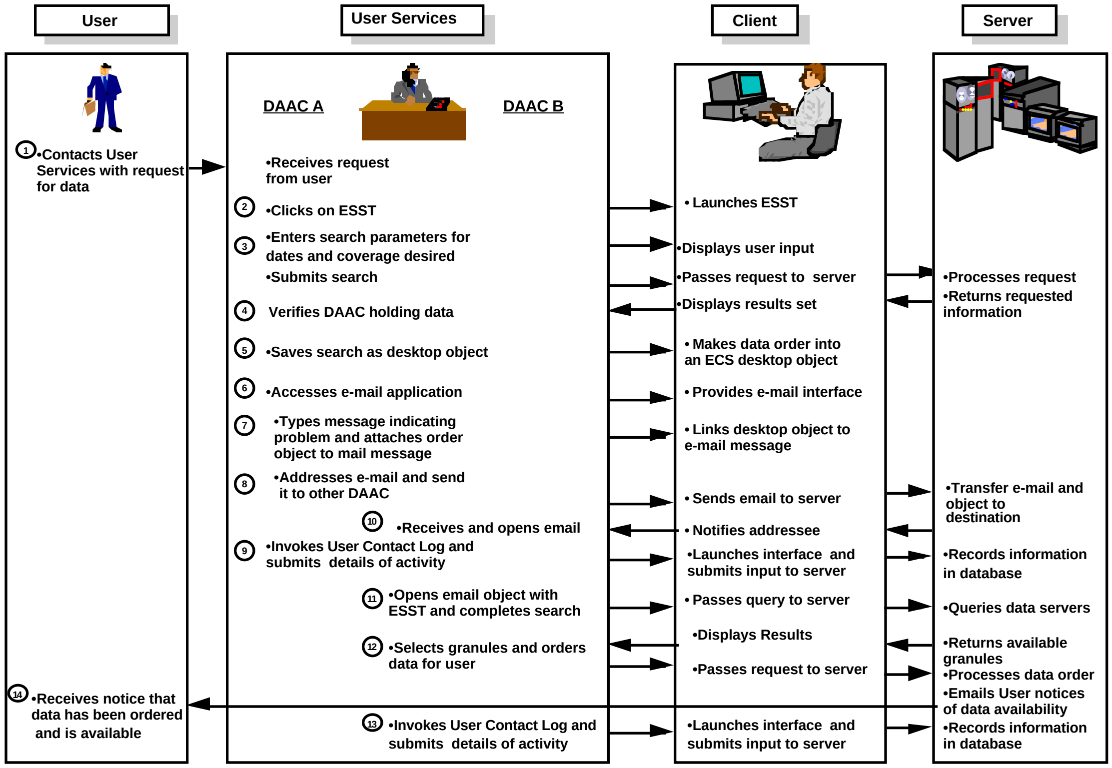

Figure 4.2.6.7-1 Cross DAAC Referral Scenario

Table 4.2.6.7-1 Cross DAAC Referral Scenario

Step	Operator/User	System	Purpose
1	User contacts User Services with request for data	N/A unless e-mail is used	N/A
2	User Services representative click on ESST	Launch ESST	Search ECS inventory
3	User Services enter search parameters for dates and coverage desired and submits search	Cross-DAAC query of inventory at data servers	Identify DAAC which holds the data
4	User services confirms which DAAC holds the data from the search results	Displays query results	Confirm the appropriate DAAC
5	User Services saves search as desktop icon	Makes query into an ECS desktop object	Ready object for transmission
6	User Services access e-mail application	Provides e-mail interface	Allow user to create e-mail message
7	User Services types message indicating problem and attaches object to mail message	Links desktop object to email message	Allow user to e-mail object as part of the e-mail message
8	User Services address e-mail and sends it to other DAAC	Transfer e-mail and object to destination	Provide other DAAC with query and associated information
9	User Services records activity in User Contact Log	Accept inputs and write record to database	Provide permanent record of work performed
10	User Services at other DAAC receives email with attached object	Notification of receipt of e-mail	Notify
11	User Services at other DAAC opens attached object with ESST and completes query parameters	ESST application starts with the transferred query object;	Allow second DAAC to display work done at first DAAC
12	User Services at other DAAC selects granules for order from returned results	Queries data servers and returns query result	Determine available granules
13	User Services records activity in User Contact Log	Accept inputs and write record to database	Provide permanent record of work performed
14	User receives notification that data has been is available	Emails notification of completion of order	Let user know data order has been processed

4.2.7 Science Software Integration and Test Activities

Discussion is provided for the Release B science software integration and testing process along with a definition of the processes which follow. The unique aspects of this activity are identified: staff members using tools tied together by procedures, rather than an automated system. The added value of Release B functionality is emphasized while demonstrating the system activity (Release A & B).

Initial Delivery

Discussion is provided for the Release B Initial Delivery of Launch Ready Science Data Production Software. The major phases of Inspection, Integration, and Testing are highlighted, and the roles of the participants are discussed. A graphic depiction of the process is included.

Release B operations process is illustrated including steps taken by the instrument team prior to delivery are listed. The delivery mechanism is discussed, including the contents of the delivery and procedures acknowledging the interaction between the instrument team and the DAAC-ECS. Inspection, integration, and acceptance test procedures are all listed, including the software tools needed for each task. Some examples of tests that are included are standards checking, verifying that all required files are present, and verifying that the software runs in a DAAC environment. Finally, the path to production implementation is shown along with the process for making scheduled major science software deliveries as well as the process for delivering accelerated science software fixes.

Science Software Update

The inspection and integration for the updated portion of an operating science software are identical to those of a new science software. Depending on the duration the science software has been in operation, a parallel testing the old and updated versions of the science software may have to be conducted to check if the intended changes have been accomplished before the updated science software can be accepted. After the software upgrade has been accepted, meetings have to be conducted to access the impacts of the software updates on the data products generated using the science software under consideration. Plans for reprocessing are then made accordingly.

Goals of SSI&T

Because the science data production software (SDP Software) is developed independently of ECS at other facilities (Science Computing Facilities, or SCFs), which may employ different computing hardware and different operating systems, the SSI&T process is mandated. The principal goals of the I&T of the SDP Software, are to integrate the software within a homogeneous environment, to test its ability to run to normal completion repeatedly over the normal range of data inputs and run-time conditions, and to ensure that the SDP Software executes without interfering with other software executing at the DAAC, or with DAAC operations. SSI&T will be performed at each DAAC responsible for its respective product generation.

Subordinate goals of SSI&T include

- Refining the process to arrive at efficient and effective procedures, reviews, organizational responsibilities, support and use of tools (Ir-1 and later ECS releases).
- Demonstrating the portability of the SDP Software through the adherence to standards and the use of the Science Data Processing (SDP) Toolkit (Ir-1 and later ECS releases).

- Determining the production resource requirements for the SDP Software such as CPU time, RAM, and temporary storage (ECS TRMM Release and later).
- Testing of SDP Software interfaces external to the DAAC such as communications, log files and QA data with the SCF. Another important interface is the input of ancillary data to the SDP Software (ECS TRMM Release and later).

SSI&T Procedures

In general, the SDP Software is developed by an Instrument Team (IT) or other investigator at their own Science Computing Facility (SCF) to be run at a DAAC. The SDP Software will eventually need to be transferred to the DAAC and undergo the SSI&T process before being placed into production. The detailed steps will vary from DAAC to DAAC, and will most likely be specifically tailored to the science software. The following steps, however, will be performed as part of any SSI&T efforts:

a. The IT and DAAC will coordinate the SSI&T schedule to ensure that adequate staff and system resources are available to support the delivery of the science software.

b. The IT transfers the SDP Software and associated materials to the DAAC. The ITs deliver their source code, coefficient files, test data, and documentation to the DAAC.

c. The SDP Software is placed under SSI&T software configuration management after the software delivery to the DAAC. This is necessary to maintain traceability between what was delivered and any changes made to the software during the SSI&T process.

d. The SDP Software must be compiled and linked with the DAAC version of the SDP Toolkit. The DAAC version of the SDP toolkit contains actual links with the ECS processing software which were only “stubs” in the toolkit version available to the SCF. The calling sequences are identical between the DAAC and SCF toolkit versions, however.

e. Standalone test cases will be run employing the suite of test data provided by the IT. This step verifies that the output of the science software at the DAAC is the same as that obtained at the SCF. Resource usage is measured during these tests.

f. The SDP Software information is entered into the Planning Data Base. This information includes Product Generation Executive (PGE) identifier and version number, input and ancillary data dependencies, activation rules, and resource performance profiles.

g. Operational testing will be performed. Prior to launch, simulated data supplied by the IT will be used. For post-launch deliveries of SDP Software upgrades, a period of testing in parallel with the current production version will be performed.

Steps (a) through (e) will have been performed for SDP Software tested with Ir-1. Steps (f) and (g) are introduced as part of the SSI&T process concurrent with the ECS TRMM Release and beyond.

Schedule and Expected State of SDP SW Development

The CERES and LIS instruments are to be flown on the TRMM spacecraft, and product generation using the observed data from these instruments is to begin under ECS TRMM Release. The expected schedule and status for delivery of the SDP Software of these instruments is summarized in Table 4.2.7-1.

Table 4.2.7-1. TRMM Instrument SDP Software Deliveries

Instrument	SSI&T DAAC Site	Status of Science Software at TRMM Release
CERES	LaRC	The CERES IT will have the Release 2 of their SDP Software, with the SDP Toolkit fully integrated into their software—including HDF or extensive error and exception handling. Pre-launch testing will employ two month's worth of test data (each 17 GB in size).
LIS	GSFC	The LIS IT expects to have their program for the generation of Level 1-3 Standard Products essentially done by the Ir-1 Delivery. Therefore, their Version 2 Software will be fairly "operational robust". Simulated Level 0 data will be based on raw data from the Optical Transient Detector (OTD) Instrument, an engineering prototype of LIS, flown earlier.

MODIS, MISR, ASTER and MOPIT instruments are to be flown on the AM-1 spacecraft, and product generation using the observed data from these instruments is to begin under ECS AM-1 Release. The expected schedule and status for delivery of the SDP Software of these instruments is summarized in Table 4.2.7-2.

Table 4.2.7-2. AM-1 Instrument SDP Software Deliveries

Instrument	DAAC	Status of Science Software at TRMM Release
ASTER	EDC	The ASTER Version 1 delivery will have all of their Level 2 Modules ready at Ir-1., and include HDF, extensive error handling and most of the interfaces to external data sets.
MISR	LaRC	The MISR Team's Version 1 delivery will consist of the overall structure of the MISR processing system, and the individual PGE elements which work within the overall shell, including error handling and EOS-HDF.
MODIS	GSFC, EDC	MODIS Team will have integrated software for generating Level 1, 2 and 3 products with their Version 1 delivery.
MOPITT	LaRC	MOPITT Team will have all of their Level 2 Software ready with their Version 1 delivery. They will have simulated MOPITT data (aircraft sensor data), and they will also have ancillary data (e.g., NMC analysis data).

In addition to the above, the SAGE III instrument, to be flown on a METEOR spacecraft shortly after the launch of AM-1, will have a Version 1 delivery to the LaRC DAAC for SSI&T. The details of this are yet to be developed as of the time of this publication.

SSI&T Tools

SSI&T is a manually intensive process. Many tools will be provided, however, to assist in performing the SSI&T steps.

Although many of the needed capabilities (see Table 4.2.7-3) will have already been provided by Ir-1, it will be necessary to revisit the tool selections prior to the fielding of the TRMM Release or the AM-1 Release. At the time COTS tool selections were made for Ir-1, the hardware vendors' transition from a 32 bit processing hardware architecture to 64 bits was not complete and so no third-party COTS products were available. Consequently, heavy reliance for the Ir-1 selections was made on the tools provided by the selected hardware vendors. By the time of TRMM Release, additional, third-party COTS products should be available for 64-bit hardware platforms.

Table 4.2.7-3. SSI&T Tool Capabilities

Service	User Capability Enabled by Tools	Release First Provided
Data Ingest	receive science software delivery*	TRMM
Management	configuration manage delivered science software	Ir-1
	problem tracking	TRMM
	manipulate Science Software Archive Packages	AM-1
Data Processing	examine delivery for completeness	Ir-1
	check for compliance to standards	Ir-1,TRMM
	compile and link delivered source files	Ir-1
	run test cases	Ir-1
	examine test outputs, including metadata	Ir-1,TRMM
	detect errors	Ir-1
	collect resource requirements statistics	Ir-1
	update system databases	TRMM
	write reports and maintain logs	Ir-1
	write additional ad hoc tools	TRMM

4.2.7.1 Transitioning To and From and Testing Scenario

The following operational scenario (Table 4.2.7.1 and Figure 4.2.7.1) is intended to provide a description of how the science software integration and test process will be done, as well as illustrating where in the process the AITTL tools might be used by the SCF and DAAC I&T personnel. In this scenario the Launch-ready version of AM-1 science software package is being integrated and tested. More information on other approaches or models to performing I&T of SDPS/W can be found in Reference 205-CD-002-002.

SCF sends 200 8-mm tapes containing test data files, expected test results and associated metadata file. These tapes contain 11,000 files averaging 50 MB each. DAAC Ingest - Distribution Technician mounts the delivered tapes and transfers these files to the SSI&T

segment of the Ingest Data Server. DAAC operations Supervisor has an Investigator Account opened for the SCF, an Investigator Directory created, and a CM storage pool allocated specifically for the use in SSI&T. Receipt of the tapes is recorded using their bar codes through MSS Inventory Management Tracking Service. The SCF transfers the science software (e.g. via ftp) to the Investigator Directory, and checks the source, includes, makefiles, scripts and libraries into the CM storage pool.

DAAC staff responsible for AM-1 Instrument support performs the required inspections on the science software package. These include checking the completeness of all the required files as well as reviewing the AM-1 documentation and the update pages. Inspection results are documented in appropriate reports. The software associated with different PGEs are compiled successfully by the DAAC staff using the compilation tools of the DAAC version of the SDP Toolkit. The DAAC staff also checks the delivered software for compliance with established standards and guidelines using AITTL tools. Two prohibited function calls are detected and the results are recorded in a DDTS bug report. Test reports are sent to the SCF using email. The SCF staff fixes the detected problems and updates the appropriate files in the Investigator Directory and the CM storage pool. The DAAC staff checks the updated delivery and finds no prohibited practices. DAAC Resource Planner reserves 1 CPU of a SSI&T cluster during day shift for use by SSI&T for the duration.

SCF remotely (e.g. via telnet) performs stand alone testing of individual PGEs and PGE chains, employing the various AITTL tools in a "batch" mode (e.g. the data visualization tool is used to generate a graphics file, which is then transferred to the local site for display). Test data files are requested as needed from the Data Server/Archive. Upon completion of the standalone testing, SCF labels the "Delivery" elements in the SSI&T CM storage pool. The DAAC CM Administrator builds binary executables, checks out PGE scripts and submits these to Data Server along with appropriate metadata. The DAAC Production Planner/Scheduler enters the test PGE information (e.g. PGE ID and Version No., resource profiles, inputs, activation rules) into the Planning Data Base using an AITTL tool.

The SCF then subscribes to the test PGE outputs. The DAAC Production Planner/Scheduler schedules the PGE in the production system, processing is performed, and the PGE output and processing files are automatically sent to the SCF. SCF then verifies PGE output and sends the DAAC QA notices for delivered data products. The final test report is completed with all results and recommendations, and is sent to the appropriate SCF and DAAC personnel. An acceptance test review telecon is held, and the DAAC manager verbally accepts the report and recommendations. This is followed by a written acceptance sent via electronic mail. The SCF checks the "Delivery" items out from the CM storage pool and transfers these elements (employing a DCE client) from the investigator Directory to the SCF. The DAAC CM Administrator copies the "Delivery" elements from SSI&T CM storage pool to a Master CM storage pool and deletes the SSI&T CM storage pool. The DAAC CM Administrator then creates Science Software Archive entries at the Data Server for the PGEs, their associated documentation, test data, and expected results. The Production Planner/Scheduler enters Production Requests for production generation using the Launch-ready PGEs. At this point, the DAAC and SCF complete the operations readiness activities, and the new PGE is promoted to production status.

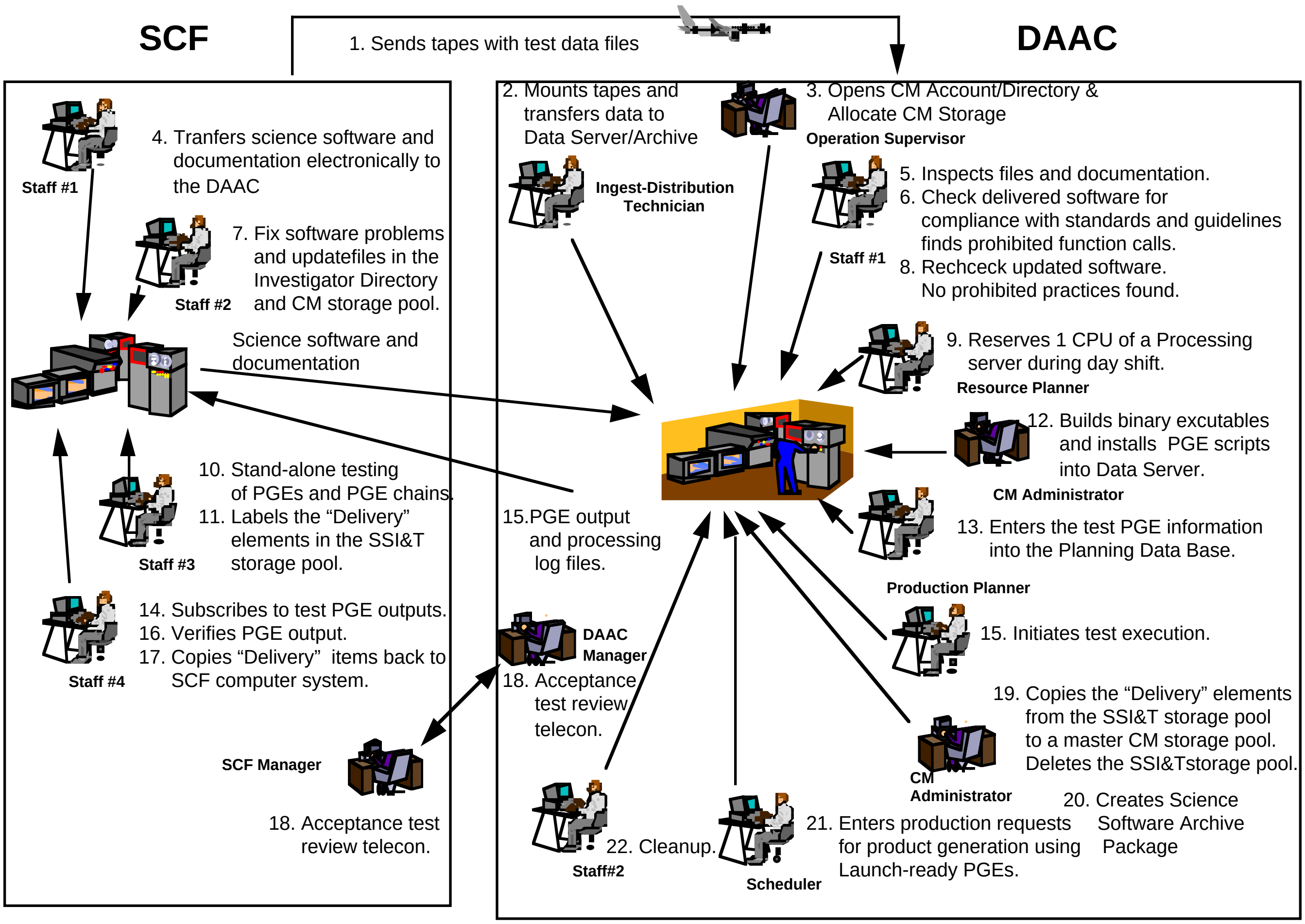

Figure 4.2.7.1-1. Transition To and From Testing Scenario

Table 4.2.7.1-1. Transition To and From Testing Scenario (1 of 3)

Step	Operator/User	System	Purpose
1	SCF sends tapes containing test data files to the DAAC.	Receipt of test data tapes recorded through MSS Inventory Management Tracking Service.	Prepare data for test runs of science software.
2	DAAC Ingest - Distribution Technician mounts the data tapes delivered by the SCF and transfers the test data files contained in them to the Ingest Data Server.	Test data files saved in the Ingest Data Server.	Save test data.
3	DAAC Operations Supervisor has a Investigator Account opened for the SCF, an Investigator Directory created, and a CM storage pool allocated specifically for use in SSI&T.	Investigator Directory created. CM storage pool and processing resource allocated.	Reserve computer memory space for the I&T task.

Table 4.2.7.1-1. Transition To and From Testing Scenario (2 of 3)

Step	Operator/User	System	Purpose
4	SCF transfers the science software and documentation via ftp to the Investigator Directory, and checks the source, includes, make files, scripts and libraries into the CM storage pool.	Delivered science software archive package saved in CM storage pool.	Save delivered science software archive package,
5	DAAC staff inspects all the delivered files of the science software and documentation for completeness and integrity, and document results in reports.	Documentation viewing and generation tools executed. Inspection reports saved.	Inspection of files and software documentation.
6	DAAC staff checks the delivered software for compliance with established standards and guidelines. Two prohibited function calls are detected and the results are recorded in DDTS bug report. Test reports are sent to the SCF using email.	Software Standards Checkers, Static and Dynamic Checkers executed. Inspection reports saved. CM Tools. DDTS.	Check if the delivered science software satisfy all the standards and guidelines. Update I&T records.
7	SCF staff fixes the problem and updated the modified files in the Investigator Directory and the CM storage pool.	CM Tools.	Fix software problem. Update Science Software files. Update I&T records.
8	DAAC checks the updated software and finds no prohibited practices. Test reports are generated.	(same as in #6)	(same as in #6)
9	DAAC Resource Planner reserves 1 CPU of a Processing Server during day shift for use by SSI&T for the test duration.	Processing resource reserved.	To minimize the chance of interruptions.
10	SCF remotely via telnet performs stand-alone testing of individual PGEs and PGE chains. Test data are requested as needed from the Data Sever/Archive.	Various AITTL tools executed in "batch" mode.	Testing of science software.
11	Standalone testing completes successfully, SCF labels the "Delivery" elements in the SSI&T storage pool.	Status of delivered science software updated.	Register the level of completion of the current SSI&T process.
12	DAAC CM Administrator builds binary executables, checks out PGE scripts and submits these to Data Sever along with appropriate metadata.	Using CM tools.	Test run preparation.
13	DAAC Production Planner/Scheduler enters the test PGE information into the Planning Data Base.	Prepare the delivered PGEs for test runs.	Test run preparation.
14	The SCF subscribes to the test PGE outputs.	Initiate test runs.	Test run execution.

Table 4.2.7.1-1. Transition To and From Testing Scenario (2 of 3)

Step	Operator/User	System	Purpose
15	DAAC Production Planner/Scheduler schedules execution of test run, processing is performed, and the PGE output and processing log files are automatically sent to the SCF with a data quality request notification.	Science products delivered	Science product delivery.
16	SCF verifies PGE output and sends a QA notice for the subsystem test product.	SCF checks if the products generated are satisfactory and QA notice sent..	Product inspection and QA report on the test product.
17	The SCF checks the "Delivery" items out from the CM storage pool and transfers these elements from the Investigator Directory to the SCF.	SCF keeps a archival copy of the delivered science software.	Archiving of the delivered science software.
18	Final SSI&T report is generated and distributed. An acceptance test review telecon is held, and the DAAC manager verbally accepts the report and recommendations. This is followed by a written acceptance sent via electronic mail.	CM tools.	Update CM history of Science Software.
19	The DAAC CM Administrator copies the "Delivery" elements from the SSI&T CM storage pool to a master CM storage pool. Then deletes the SSI&T CM storage pool.	PGEs ready for regular production requests.	Prepare the system for the generation of the de-signaled science products.
20	The DAAC CM Administrator creates a Science Software Archive Package at the Data Server.	AITTL tool.	All items of the algorithms, source code, documentation, test data and results are stored in a complete package for later reference and retrieval.
21	The Production Planner/Scheduler enters Production Requests for product generation using the Launch-ready PGEs.	System ready for subscription of products from the delivered PGEs.	Prepare the system for the generation of the de-signaled science products.
22	DAAC performs cleanup work.		

4.2.7.2 Production Calibration-Validation Scenario

Scenario Description

This scenario describes calibration and validation (CAL/VAL) activities during the post-launch "shake-down" phase. The scenario is intended to portray events during the period when the performance of an instrument and it's associated science algorithms are being evaluated. These are two separate but interrelated activities. *Calibration* is insuring that the raw instrument data has been properly converted to radiances as received at the spacecraft sensor (Level 0 to Level 1). *Validation* is insuring that the conversion of those radiances to geophysical parameters (Level 1 to Level 2) is being done correctly. These are the definitions as used in this scenario; other uses of these terms exist.

The validation phase assumes proper calibration of the raw instrument data, but evaluation of the geophysical products can also feed back to the instrument calibration. Calibration of the instrument is carried out by an instrument engineer while validation of the geophysical products is carried out by a member of the science team.

Following launch and initial instrument checkout, the instrument engineer inspects instrument diagnostic and engineering data at an Instrument Support Terminal (IST). All pre-established criteria are satisfied so a message is sent to the DAAC to initiate production. After data from several orbits have been processed, the instrument engineer begins evaluation of Level 0 (L0) data at the IST. In-flight calibrations verify the pre-launch radiance conversion coefficients. Again, everything checks out and a message is sent to the science team to begin checking the L2 science data being produced.

An instrument scientist logs onto an ECS client at her SCF and begins browsing L2 science data using EOSView. After inspecting several days worth of data she notices that in some swaths there is a slight bias towards lower values at the outermost scan position. She inspects corresponding Level 1 data and finds no evidence of a bias and so suspects an improper correction for viewing angle in the science algorithm. She uses EOSView to create several cross-track composites and sends the results along with an e-mail to the algorithm developer asking him to look into the problem.

After reviewing the data sent to him the algorithm developer thinks the problem may lie with the assumed vertical distribution of CO which is used in the viewing-angle-dependent atmospheric correction. Since validated CO profiles from MOPITT are not yet available, he decides to try a new profile based on a recently published paper. His calculations produce a set of new viewing angle correction coefficients. He calls the instrument scientist to tell her he may have a fix and gives her the location on his machine where she can ftp-get the new coefficients.

The instrument scientist contacts the DAAC Science Coordinator to arrange for the transfer and installation of the new coefficients. A request for a special processing run is submitted to see if the new coefficients remove the biases. The DAAC scheduler submits to the planner a special request for processing 3 days of data with the new coefficients while normal processing using the old coefficients continues. The resulting data are browsed by the instrument scientist but the scan-position bias is still present in some of the data.

The scientist now suspects there is a problem with the instrument that is not apparent with simple visual inspection of the L1 data. She sends a message to the instrument engineer describing what has been found so far along with the date and time of the scans where the problem was first identified.

The instrument engineer undertakes a careful examination of L1 radiance data and discovers there is a slight bias that occurs only during a particular earth-sun-satellite configuration which produces and uneven heating of the detector cavity. This is verified by examination of instrument diagnostic data. The instrument engineer derives a scan-position and ephemeris dependent correction to the radiance calibration coefficients as a potential solution. (Alternatively, he might devise a correction that involved reprogramming the on-board processor. This would entail uplinking new commands to the spacecraft.) He sends an e-mail to the instrument scientist informing her of the solution and ftp's a file containing the new radiance calibration coefficients to the algorithm development workstation at the SCF.

The instrument scientist first tests the new coefficients at the SCF by running the algorithms using simulated data. Once satisfied that the new coefficients do not introduce new errors under normal operating conditions, she transfers the coefficients to the DAAC for incorporation into production system.

The instrument scientist requests and the DAAC schedules a special request to reprocess one week of data through Level 2. The scientist inspects the L2 data and finds the problem is fixed. A request is then submitted to reprocess all L1 and higher data using the new coefficients.

Scenario Assumptions

For the purpose of this scenario, it is assumed that there are no cross-DAAC dependencies in the L1 or L2 production algorithms. The scenario as written does not preclude use of existing calibrated data from other DAACs sets in the production algorithm. However, a cross-DAAC dual calibration process would introduce scheduling complexities that are beyond the scope of this scenario.

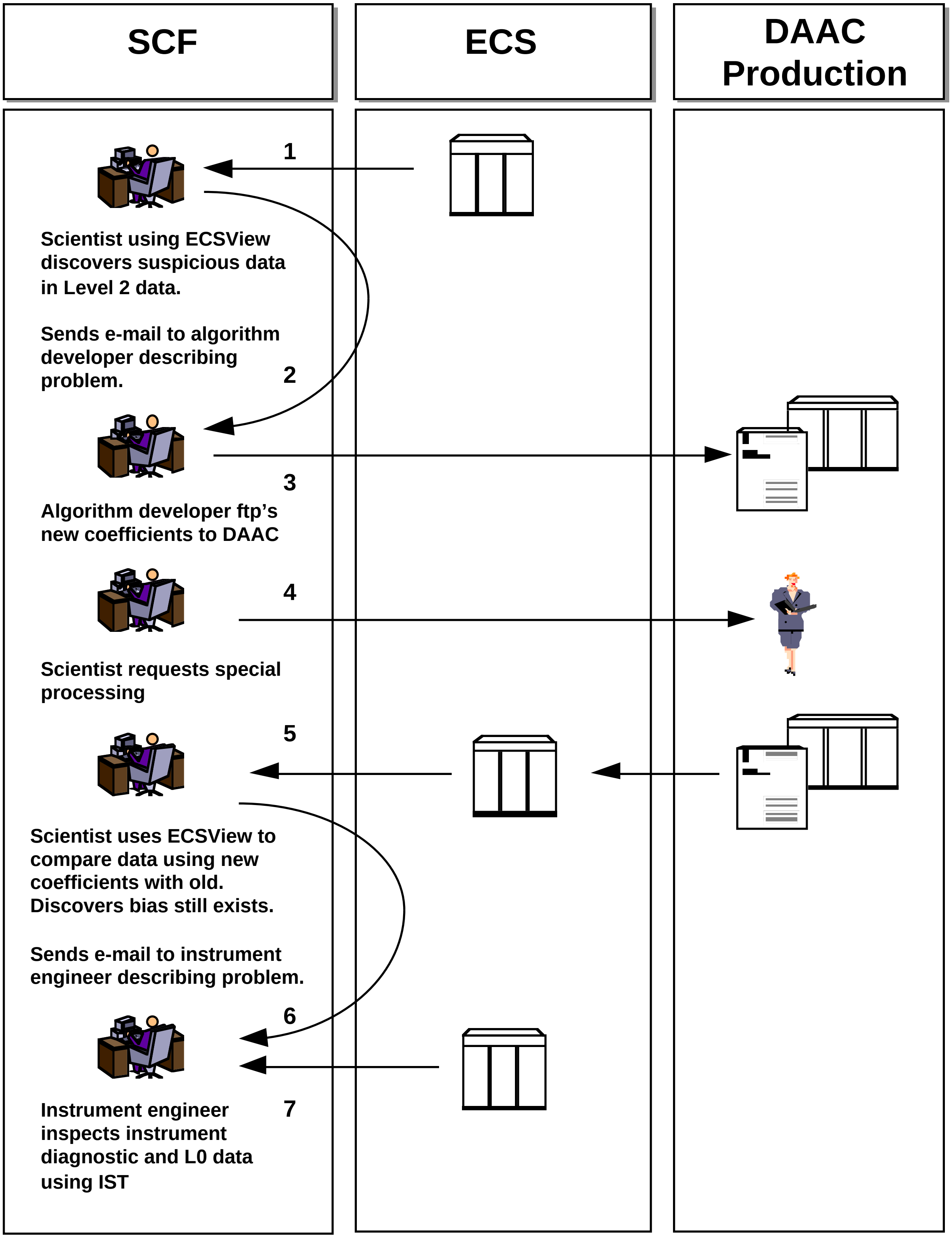

Figure 4.2.7.2-1. Production Calibration-Validation Scenario (1 of 2)

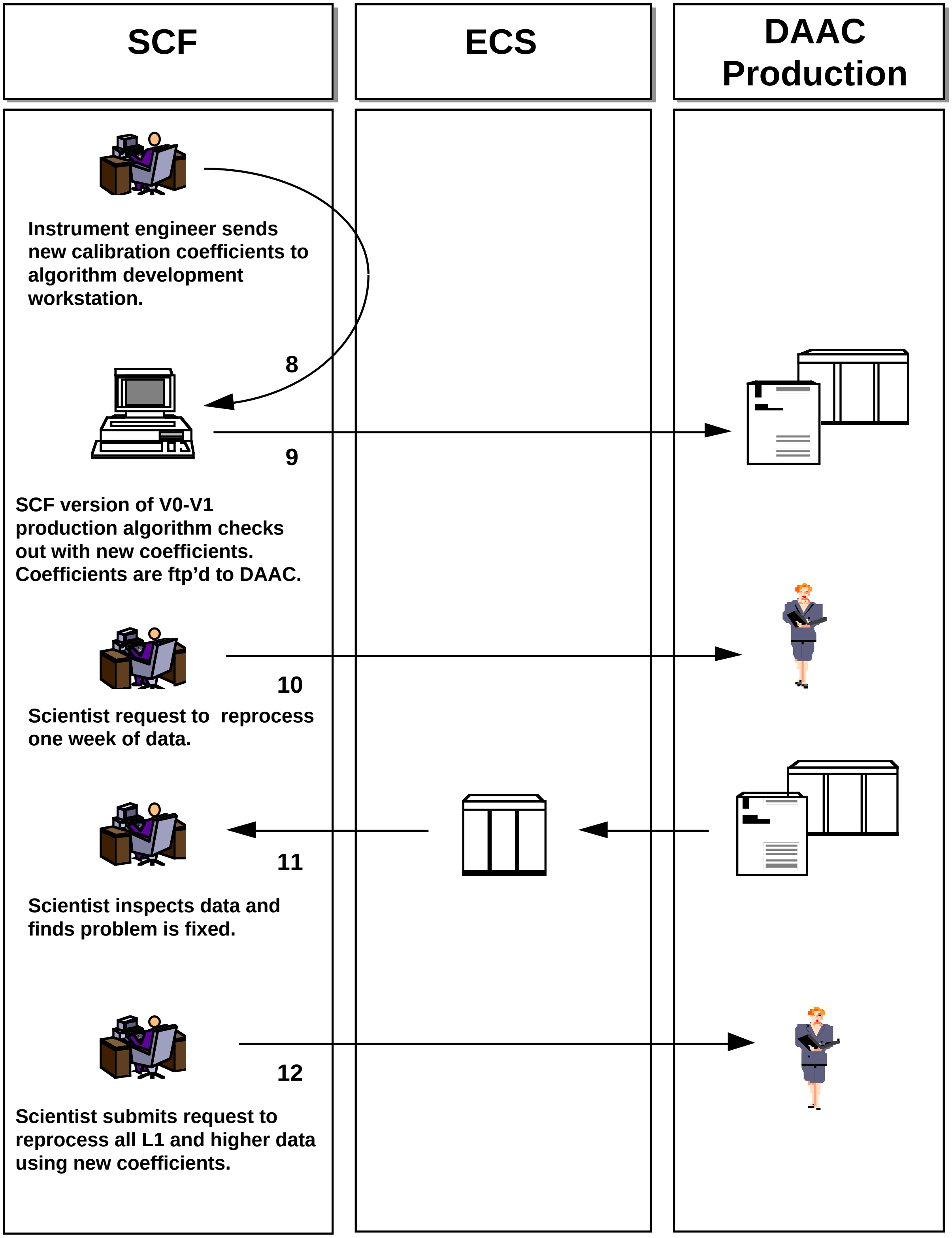

Figure 4.2.7.2-1 Production Calibration-Validation Scenario (2 of 2)

Table 4.2.7.2-1. Production Calibration-Validation Scenario

Step	Operator/User	System	Purpose
1	Instrument scientist uses EOSView to create swath composites showing suspicious bias at outermost scan positions.	Level 2 data accessed and manipulated using ECS Client	Evaluate science products
2	Instrument scientist attaches results to e-mail asking algorithm developer look into bias problem	Message sent via ISN	Inform algorithm developer of problem
3	Algorithm developer computes new atmospheric correction and informs instrument scientist who transfers new coefficients to the DAAC	New coefficients are ftp'd to DAAC.	Attempt to correct problem in L2 data
4	Instrument scientist requests special processing in SSI&T mode using new coefficients. Results are stored in multi-type collection with special QA flag restricting access.	Special processing of L2 data is scheduled. Normal processing continues.	Generate new data for comparison
5	Instrument scientist uses EOSView to compare data processed using new coefficients with those using old. Discovers that bias still exists.	EOS View used to display swath data from two runs side by side.	Evaluate science products
6	Instrument scientist sends message to instrument engineer identifying suspicious periods in data record.	Message sent via ISN	Inform instrument engineer of problem.
7	Instrument engineer uses IST to inspect instrument diagnostic and L0 data.	Instrument diagnostic and L0 data accessed using IST.	Look for source of bias problem
8	Instrument engineer derives new radiance calibration coefficients which are ftp'd to algorithm development workstation at SCF.	New coefficients transferred to SCF.	Devise possible correction to L1 data
9	New coefficients are checked out with test version of algorithm at SCF, then transferred to DAAC. A abbreviated SSI&T procedure is performed at the DAAC.	New coefficients transferred to DAAC.	Attempt to correct problem in L1 data
10	Instrument scientist requests special processing in SSI&T mode using new coefficients. Results are stored in multi-type collection with special QA flag restricting access.	One week of L1 and L2 data are reprocessed.	Generate new data for comparison
11	Instrument scientist inspects reprocessed L2 data and finds bias problem has been fixed.	Level 2 data accessed and manipulated using ECS Client	Verify that correction has fixed problem in L2 data
12	Instrument scientist submits a validated reprocessing request to reprocess all L1 and higher data using new coefficients. See 4.2.4.4, Planning Reprocessing Requests Scenarioand 6.2.3, Push Recovery Scenario.	Job scheduled to reprocess all L1 and higher data.	Reprocess to remove error introduced by instrument