

16. User Services

16.1 Spatial Subscription Server

User Services and Science Data Specialists use the Spatial Subscription Server (SSS) GUI to create subscriptions for inserting data into the Data Pool and to perform other tasks necessary to manage the Data Pool. Table 16.1-1 provides an activity checklist for tasks using the Spatial Subscription Server GUI for Data Pool Management.

Table 16.1-1. Spatial Subscription Server GUI - Activity Checklist (1 of 2)

Order	Role	Task	Section	Complete?
1	User Services/ Science Data Specialist	Launch the Spatial Subscription Server GUI	(P) 16.1.1.1	
2	User Services/ Science Data Specialist	Shut Down the Spatial Subscription Server GUI	(P) 16.1.1.2	
3	User Services/ Science Data Specialist	List Subscribable Events	(P) 16.1.2.1	
4	User Services/ Science Data Specialist	View Subscriptions in the NBSRV Database	(P) 16.1.3.1	
5	User Services/ Science Data Specialist	Update a Subscription in the NBSRV Database	(P) 16.1.3.2	
6	User Services/ Science Data Specialist	Delete (Cancel) a Subscription in the NBSRV Database	(P) 16.1.3.3	
7	User Services/ Science Data Specialist	Add a Subscription to the NBSRV Database	(P) 16.1.4.1	
8	User Services/ Science Data Specialist [capability]	List Subscriptions Associated with a Theme	(P) 16.1.5.1	
9	User Services/ Science Data Specialist	View Bundling Orders	(P) 16.1.6.1	

Table 16.1-1. Spatial Subscription Server GUI - Activity Checklist (2 of 2)

Order	Role	Task	Section	Complete?
10	User Services/ Science Data Specialist	Cancel Bundling Orders and Its Associated Subscriptions	(P) 16.1.6.2	
11	User Services/ Science Data Specialist	Add a Bundling Order	(P) 16.1.6.3	
12	User Services/ Science Data Specialist	Update a Bundling Order	(P) 16.1.6.4	
13	User Services/ Science Data Specialist	Configure Bundling Order Completion Criteria Default Values	(P) 16.1.6.5	
14	User Services/ Science Data Specialist	View the Acquire and Notification Actions Being Processed	(P) 16.1.7.1	
15	User Services/ Science Data Specialist	View and Remove Failed Actions	(P) 16.1.7.2	
16	User Services/ Science Data Specialist	View Statistics on Processing of Events and Actions by the NBSRV	(P) 16.1.7.3	
17	User Services/ Science Data Specialist	Prepare Input Files for Use with the SSS CLI	(P) 16.1.8.1	
18	User Services/ Science Data Specialist	View a Subscription Using the SSS CLI	(P) 16.1.8.2	
19	User Services/ Science Data Specialist	Add a New Subscription Using the SSS CLI	(P) 16.1.8.3	
20	User Services/ Science Data Specialist	Update a Subscription Using the SSS CLI	(P) 16.1.8.4	
21	User Services/ Science Data Specialist	Delete a Subscription Using the SSS CLI	(P) 16.1.8.5	

16.1.1 Spatial Subscription Server GUI

The procedure for launching the GUI is provided separately here and is referenced in other procedures. It applies to both full-capability and limited-capability operators.

16.1.1.1 Launch the Spatial Subscription Server GUI

- 1 At the UNIX command shell prompt, type **setenv DISPLAY *clientname*:0.0** and then press the **Return/Enter** key.
 - For *clientname*, use either the local terminal/workstation IP address or its machine name.
- 2 Start the log-in to a Firefox host by typing **/tools/bin/ssh *hostname*** (e.g., x4oml01,) at the UNIX command shell prompt, and press the **Return/Enter** key.
 - If you receive the message, **Host key not found from the list of known hosts. Are you sure you want to continue connecting (yes/no)?** type **yes** (“y” alone does not work).
 - If you have previously set up a secure shell passphrase and executed **sshremote**, a prompt to **Enter passphrase for RSA key '<user@localhost>'** appears; continue with Step 3.
 - If you have not previously set up a secure shell passphrase, go to Step 4.
- 3 If a prompt to **Enter passphrase for RSA key '<user@localhost>'** appears, type your **Passphrase** and then press the **Return/Enter** key. Go to Step 5.
- 4 At the **<user@remotehost>'s password:** prompt, type your **Password** and then press the **Return/Enter** key.
 - You are logged in and a UNIX command shell prompt is displayed.
- 5 Type **firefox &** then press **Return/Enter**.
 - It may be necessary to type the path as well as the firefox command (e.g., **/tools/bin/firefox &**).
 - It may be necessary to respond to dialogue boxes, especially if the browser is already being used by someone else who has logged in with the same user ID.
 - The Firefox web browser is displayed.
- 6 If a bookmark has been created for the **Spatial Subscription Server GUI**, select the appropriate bookmark from those listed on the browser's **Bookmarks** button (or the **Communicator** → **Bookmarks** pull-down menu).
 - The security login **Prompt** is displayed.
- 7 If no bookmark has been created for the **Spatial Subscription Server GUI**, type **http://<host>:<port>/<path>/** in the browser's **Location (Go To)** field then press **Return/Enter**.
 - For example:
 - **http:// f4oml01.hitc.com:22200/cgi-bin/EcNbHomePage.pl**
 - The security login **Prompt** is displayed.
- 8 Type the appropriate user name in the **User Name** box of the security login **Prompt**.
- 9 Type the appropriate password in the **Password** box of the security login **Prompt**.

NOTE: If the security login prompt reappears after the first time the user name and password have been entered (and the **OK** button has been clicked), it may not be due to a data entry problem. Try again to log in using the same user name and password. Sometimes it is necessary to enter the user name and password for the GUI more than once.

- 10 Click on the appropriate button from the following selections:
- **OK** - to complete the log-in and dismiss the dialogue box.
 - The dialogue box is dismissed.
 - The **NBSRV Home Page** is displayed (see Figure 16.1-1).
 - **Cancel** - to dismiss the dialogue box without logging in.
 - The dialogue box is dismissed.
 - The Firefox web browser is displayed.

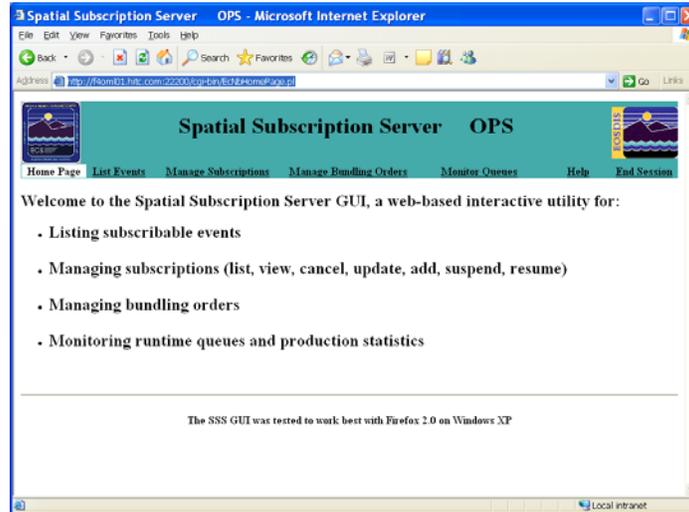


Figure 16.1-1. Spatial Subscription Server GUI Home Page

16.1.1.2 Shut Down the Spatial Subscription Server GUI

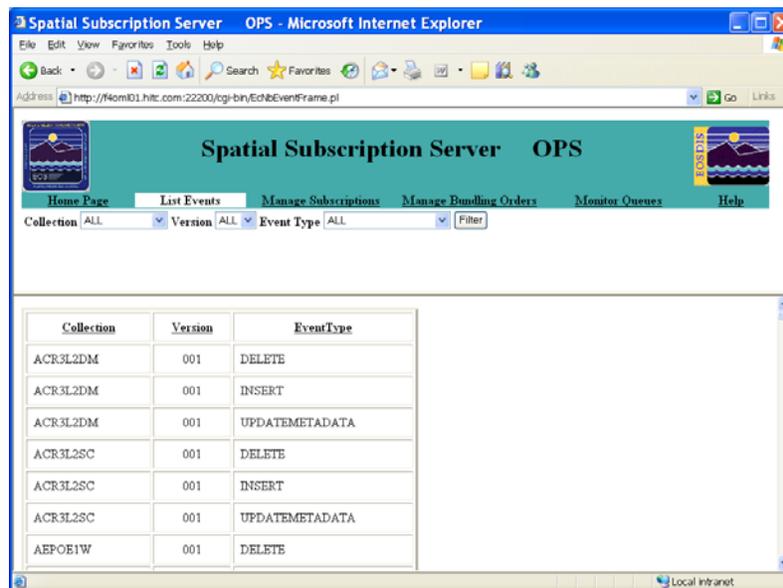
- 1 Click on the **Home Page** link at the top of the **Spatial Subscription Server GUI**.
 - The **Home Page** is displayed.
 - 2 Click on the **End Session** link at the top of the **Spatial Subscription Server GUI**.
 - A log-out page containing the message “Click on Button Below to End Session: NOTE: THIS WOULD ALSO SHUT DOWN THE BROWSER:” is displayed.
- NOTE:** To abort the log-out and return to the **Home Page**, click on the browser **Back** button.
- 3 Click on the **ShutDown** button.
 - The Firefox browser is dismissed.
-

16.1.2 List Subscribable Events

Suppose you want to obtain and examine a list of events for which subscriptions may be established, and to find insert events for MOD01 data. Use the procedure that follows, which is applicable to both full-capability and limited-capability operators.

16.1.2.1 List Subscribable Events

- 1 Launch the Spatial Subscription Server GUI.
 - The **Spatial Subscription Server Home Page** is the displayed.
- 2 Click on the **List Events** link.
 - The **List Events** page is displayed with a table of all events for which a subscription can be created (see Figure 16.1-2).



Collection	Version	EventType
ACR3L2DM	001	DELETE
ACR3L2DM	001	INSERT
ACR3L2DM	001	UPDATEMETADATA
ACR3L2SC	001	DELETE
ACR3L2SC	001	INSERT
ACR3L2SC	001	UPDATEMETADATA
AEPOE1W	001	DELETE

Figure 16.1-2. List Events Page

- 3 Observe information displayed on the Manage Subscriptions page.
 - The table on the **List Events** page has columns containing the following types of subscription information:
 - **Collection.**
 - **Version.**
 - **Event Type.**
 - The column headers in the table are links for sorting the list. There are also buttons for filtering the list.
 - There are option lists for filtering the table data by **Collection**, **Version**, and/or **Event Type**.
 - Event Type options include **ALL**, **DELETE**, **INSERT**, and **UPDATEMETADATA**.

- 4 To **sort** the list click on the appropriate column header link (i.e., **Collection**, **Version**, or **Event Type**).
 - If the list were sorted by **Event Type**, it would display events grouped by type: **DELETE** events would be listed first, followed by **INSERT** events, etc.
 - 5 To **filter** the list to display certain types of information only, click on the appropriate option button (i.e., **Collection**, **Version**, or **Event Type**) and then click to select the desired option from the option list.
 - The selected choice is displayed in the option field.
 - 6 Repeat Step 5 to select an additional filter, if applicable.
 - 7 Click on the **Filter** button to implement the selected filter.
 - A list is displayed showing selected information only.
 - 8 Return to Step 3.
-

16.1.3 Manage Subscriptions

Suppose that you now want to view subscriptions related to MOD01 data, and then to review detailed information about a particular subscription. To obtain the list you will need to use the **Manage Subscriptions** link, filter on **Collection**, and then select and apply an option to **View** the particular subscription. Use the following procedure, which is applicable to both full-capability and limited-capability operators. On occasion, it may be necessary to modify or delete existing subscriptions in the NBSRV database. The **Spatial Subscription Server GUI** web access supports these requirements. However, only full-capability operators can modify or delete existing subscriptions using the **Spatial Subscription Server GUI**. Limited-capability operators can view subscriptions but may not modify or delete them.

16.1.3.1 View Subscriptions in the NBSRV Database

- 1 Launch the Spatial Subscription Server GUI
 - The **Spatial Subscription Server Home Page** is the displayed.
- 2 Click on the **Manage Subscriptions** link.
 - The **Manage Subscriptions** page is displayed (see Figure 16.1-3) with a table listing all subscriptions in the NBSRV database.

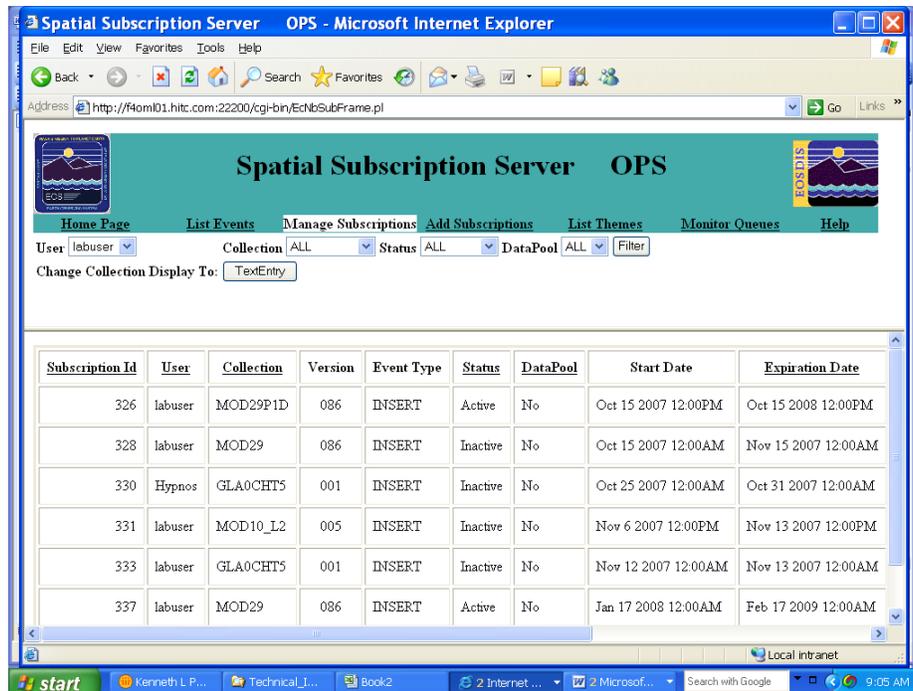


Figure 16.1-3. Manage Subscription

- 3 Observe information displayed on the **Manage Subscriptions** page.
 - The table on the **Manage Subscriptions** page has columns containing the following types of subscription information:
 - **Subscription Id.**
 - **User.**
 - **Collection.**
 - **Version.**
 - **Event Type.**
 - **Status.**
 - **Data Pool.**
 - **Start Date.**
 - **Expiration Date.**
 - **Time Last Updated.**
 - **Choose Subscription Action.**
 - The column headers in the table, except for **Version**, **Event Type**, **Start Date**, and **Choose Subscription Action** are links for sorting the list.
 - The **Choose Subscription Action** column has radio buttons for taking the following actions with respect to the corresponding subscription:
 - **View.**
 - **Update.**
 - **Cancel.**
 - There are option lists for filtering the table data by **User**, **Collection**, **Status**, and/or **Data Pool**.

- There is a “**Change Collection Display to**” option button for switching the display between **TextEntry** and **SelectableList**.
- 4** To filter the list to display certain types of subscriptions only, click on the appropriate option button (i.e., **User**, **Collection**, **Status**, or **Data Pool**) and then click to select the desired option from the option list.
- The selected choice is displayed in the option field.
- 5** Repeat Step 4 to select an additional filter, if applicable.
- 6** Click on the **Filter** button to implement the selected filter.
- A list is displayed showing subscriptions that meet the filter criteria only.
- 7** To view a particular subscription first click on the **View** radio button in the **Choose Subscription Action** column for the subscription.
- The button is filled to indicate selection of the option.
- 8** To implement the selected action with respect to the particular subscription click on the **Apply** button in the **Choose Subscription Action** column for the subscription.
- A **View Subscriptions** page is displayed.
- 9** Observe information displayed on the **View Subscriptions** page.
- The table on the **Manage Subscriptions** page has columns containing the following types of subscription information:
 - **User.**
 - **Status.**
 - **Start Date.**
 - **Expiration Date.**
 - **Short Name.**
 - **Version.**
 - **Event Type.**
 - **Science Granules and/or Metadata** (if applicable).
 - **Data Pool Action is associated with theme x** (if applicable).
-

16.1.3.2 Update a Subscription in the NBSRV Database

1 Launch the Spatial Subscription Server GUI.

- The **Home Page** is displayed).

NOTE: At various points in this procedure, you may encounter a security information warning. Unless you know of a specific potential danger that you must avoid, click on the **Continue submission** button when the warning is displayed.

2 Click on the **Manage Subscriptions** link.

- The **Manage Subscriptions** page is displayed.

3 Find the subscription to be updated in the list of subscriptions on the **Manage Subscriptions** page.

- Scroll, sort, and/or filter the list as necessary.

4 Click on the **Update** radio button in the **Choose Subscription Action** column for the subscription to be updated.

- The button is filled to indicate selection of the option.

5 To implement the “update” action with respect to the subscription click on the **Apply** button in the **Choose Subscription Action** column for the subscription.

- An **Update Subscriptions** page is displayed (see Figure 16.1-4).

The screenshot shows the 'Update Subscription' page in Microsoft Internet Explorer. The browser title is 'Update Subscription - Microsoft Internet Explorer'. The address bar shows the URL: http://f40m01.hitc.com:22200/cgi-bin/EdNoSubscriptionChoose.pl. The page has a green header with the title 'Spatial Subscription Server OPS' and a navigation menu with links: Home Page, List Events, Manage Subscriptions (selected), List Themes, Monitor Queues, and Help. The main content area contains the following fields and sections:

- User Id: lebuser, Status: Active
- Start Date (MM/DD/YYYY HH:MM): 10/15/2007 12:00
- Expiration Date (MM/DD/YYYY HH:MM): 10/15/2008 12:00
- Subscribe to Event
- Short Name / Version / Event Type: MOD29PID 086 INSERT
- Subscription Qualifiers
- Logical Basis: AND
- Integer / Float / Date

Attribute Name/Type	Min Value	Max Value

Figure 16.1-4. Update Subscription

- 6 To change the User Id (if applicable) type the User Id for the requesting user in the **User Id** text entry field.
 - The entered User Id must be a valid registered user (i.e., must be listed in the User Profile database).
 - The typed entry is displayed in the User Id field.
 - 7 To change the status (if applicable) click on the appropriate choice from the **Status** option list.
 - Active.
 - Inactive.
 - 8 To change the start date for the subscription (if applicable) type the appropriate date and time in the **Start Date (mm/dd/yyyy hh:mm)** text entry box.
 - The date and time should be entered in *mm/dd/yyyy hh:mm* format
 - 9 To change the expiration date for the subscription (if applicable) type the appropriate date and time in the **Expiration Date (mm/dd/yyyy hh:mm)** text entry box.
 - The date and time should be entered in *mm/dd/yyyy hh:mm* format.
- NOTE:** It is not possible to update the subscription event [**Short Name/Version/Event Type** (e.g., **MOD04_L2 003 INSERT**)].
- NOTE:** Option buttons and fields are displayed to permit the entry of data in two general categories; i.e., **Subscription Qualifiers** and **Action Information**. In the **Subscription Qualifiers** section it is possible to select **Attribute Name/Type** and enter **Min Value** and **Max Value** for any valid **Integer/Float/Date** qualifiers, string **Value** qualifiers, and **Latitude** and **Longitude** coordinates to define a bounding rectangle spatial qualifier for the subscription to be created. In the **Action Information** section there is a button to specify that the subscription is to be associated with a bundling order; if that button is not selected, one has the choice of one or more of three actions (i.e., **Acquire**, **E-Mail Notification**, or **Data Pool**). There are blocks with option lists and text entry fields for defining the selected action(s) to be taken upon occurrence of the event for which the subscription was created.
- 10 To select a different **Logical Basis** option (if applicable) click on the appropriate choice (e.g., **AND**) from the option list.
 - 11 To change, add, or delete an integer, float, or date **Attribute Name/Type** option (if applicable) click on the appropriate choice from the **Integer/Float/Date Attribute Name/Type** option list.
 - 12 To change, add, or delete a minimum value for an integer, float, or date attribute (if applicable) type (or delete, if necessary) the appropriate value in the **Integer/Float/Date Min Value** text entry box.
 - 13 To change, add, or delete a maximum value for an integer, float, or date attribute (if applicable) type (or delete, if necessary) the appropriate value in the **Integer/Float/Date Max Value** text entry box.
 - 14 Repeat Steps 11 through 13 as necessary to change, add, or delete integer, float, or date attributes.
 - 15 To change, add, or delete a string **Attribute Name/Type** option (if applicable) click on the appropriate choice from the **String Attribute Name/Type** option list.

- 16** To change, add, or delete a value for a string attribute (if applicable) type (or delete, if necessary) the appropriate value in the **String Value** text entry box.
- 17** Repeat Steps 15 and 16 as necessary to change or specify additional string attributes.
- 18** To change, add, or delete spatial coordinates of intersecting LLBox (if applicable) type (or delete, if necessary) the appropriate values in the following text entry boxes (as necessary).
- North Latitude.
 - West Longitude.
 - East Longitude.
 - South Latitude.

NOTE: Every subscription must have at least one action specified and may have more than one.

- 19** To associate the subscription with a bundling order (if applicable) first click in the **Bundling Order** box.
- 20** To continue the process of associating a subscription with a bundling order (if applicable) click on the appropriate choice from the **Bundling Order Selection** option list.
- If a subscription is associated with a bundling order, skip Steps 21 through 24 and go to Step 25.
- 21** To select or deselect subscription action(s) click in the following boxes as applicable (a check mark in a box indicates that the action has been selected):
- Acquire – to request shipment of the data specified in the subscription.
 - E-Mail Notification - to request e-mail notification of the event specified in the subscription.
 - Data Pool - to request insertion of data specified in the subscription into the Data Pool.

NOTE: Multiple actions can be selected.

- 22** If **Acquire** was selected in Step 21, change or add shipment data (if applicable) by either typing the appropriate data or clicking on the appropriate choice from the option list in the relevant fields of the **Acquire Information** block:
- **First Name** **M.I.** **Last Name**
 - **Phone Number**
 - **User Profile.**
 - **User String [if applicable (to distinguish the subscription from others)].**
 - **Email Address.**
 - **Media Type.**
 - **Priority.**
 - **User** [applicable to ftp push or secure copy distributions only].
 - **Password** [applicable to ftp push or secure copy distributions only].
 - Enter password again for verification [applicable to ftp push or secure copy distributions only].
 - **Host** [applicable to ftp push or secure copy distributions only].
 - **Directory** [applicable to ftp push or secure copy distributions only].

- 23 If **E-Mail Notification** was selected in Step 21, change or add e-mail notification data by either typing the appropriate data or clicking on the appropriate choice from the option list in the relevant fields of the **E-Mail Notification Information** block:
- **Action Address.**
 - **User String** [if applicable (to distinguish the subscription from others)].
 - **Metadata.**
- 24 If **Data Pool** was selected in Step 21, change or add Data Pool insertion data either by typing the appropriate data or clicking on the appropriate choice from the option list in the relevant fields of the **Data Pool Information** block:
- **Science Granules** and/or Metadata.
 - Click here to add theme: [click in the box if the granules to be added to the Data Pool as a result of the subscription are to be associated with a theme].
 - Enter first few characters of name [optional - if associating the granules from the subscription with a theme].
- 25 Click on the **Update Subscription** button.
- If the Click here to add theme: box was checked, a Select Theme for Data Pool Action page is displayed.
 - If the Click here to add theme: box was not checked, a message is displayed confirming that “Subscription x was updated” to the database and buttons permit Update another subscription or Return to Home Page.
- 26 To select a theme for Data Pool action (if applicable) first click on the appropriate choice from the **Select Theme for Data Pool Action** option list.
- 27 To make the theme association retroactive (if applicable) first click in the **To make theme association retroactive check here:** box.
- 28 To implement the theme association (if applicable) click on the **Apply** button on the **Select Theme for Data Pool Action** page.
- A message is displayed confirming that “Subscription x was updated/added” to the database and buttons permit **Add another subscription** or **Return to Home Page**.
- 29 Click on the appropriate link from the following selections:
- Add... another subscription.
 - The Manage Subscriptions page is displayed.
 - Update another subscription.
 - The Manage Subscriptions page is displayed.
 - Return to Home Page.
 - The Home Page is displayed.
-

16.1.3.3 Delete (Cancel) a Subscription in the NBSRV Database

- 1 Launch the Spatial Subscription Server GUI.
 - The **Home Page** is the displayed,
 - 2 Click on the **Manage Subscriptions** link.
 - The **Manage Subscriptions** page is displayed, providing a table of subscription information showing 11 columns: **Subscription Id, User, Collection, Version, Event Type, Status, Data Pool, Start Date, Expiration Date, Time Last Updated,** and **Choose Subscription Action** (containing radio buttons for selecting an action to take and **Apply** buttons for implementing the selected actions).
 - 3 To filter the list to display certain types of subscriptions only, click on the appropriate option button and then click to select the desired option from the option list.
 - The selected choice is displayed in the option field.
 - 4 Repeat Step 4 to select an additional filter, if applicable.
 - 5 Click on the **Filter** button to implement the selected filter.
 - A list is displayed showing subscriptions that meet the filter criteria only.
 - 6 Click on the **Cancel** radio button in the **Choose Subscription Action** column for the subscription to be canceled (deleted).
 - The button is filled to indicate selection of the option.
 - 7 Click on the **Apply** button in the **Choose Subscription Action** column for the subscription to be canceled (deleted).
 - A confirmation page is displayed with the message “Are you sure that you want to cancel subscription x?”
 - 8 Click on the appropriate link from the following selections:
 - **Yes-** to confirm the deletion.
 - A “Subscription x was canceled” message is displayed.
 - **No-** to abort the deletion.
 - 9 Click on the appropriate link from the following selections:
 - **Cancel another subscription.**
 - The **Manage Subscriptions** page is displayed.
 - **Return to Home Page.**
 - The **Home Page** is displayed.
-

16.1.4 Add a Subscription to the NBSRV Database

A user who wants to have data made available for downloading through the Data Pool must contact the DAAC to request that a subscription be placed so that when data of the specified type are inserted in ECS, a copy is inserted in the Data Pool. User Services or Science Data Specialists then create the subscription, adding Data Pool qualification to meet the user's requirement within any constraints imposed for the Data Pool at the DAAC.

Suppose that a registered user requests Data Pool insert for MOD04_L2 003 data, specifying that the data granules inserted during the next two years be kept in the Data Pool for a period of 30 days. The user requests granules from daytime collection, in a geographic area bounded by 0

degrees North Latitude, -50 degrees East Longitude, -20 degrees South Latitude, and -70 degrees West Longitude. The user also requests notification as well as the Data Pool insert. Full-capability operators (only) can use the procedure that follows to create the necessary subscription.

16.1.4.1 Add a Subscription to the NBSRV Database

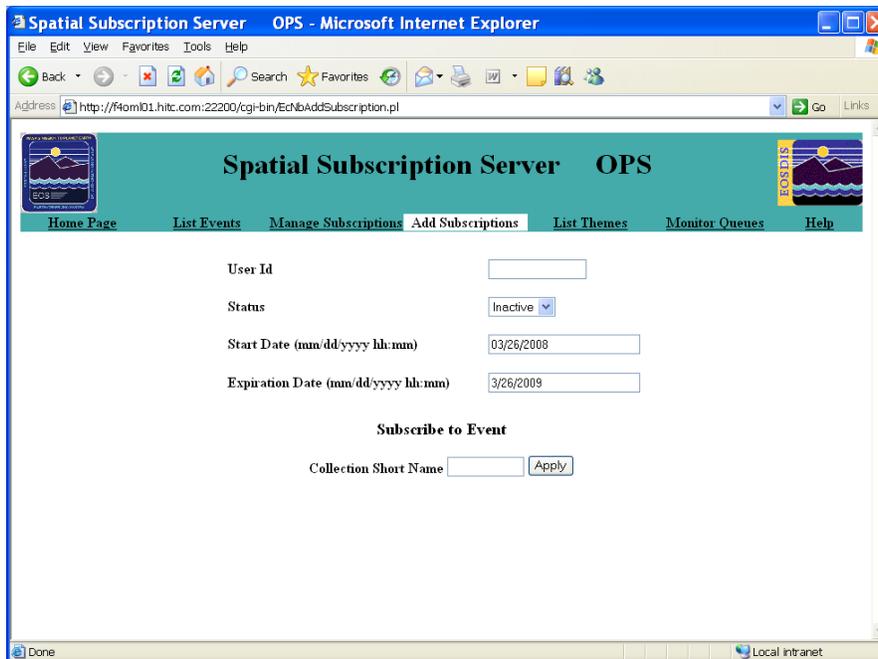
1 Launch the Spatial Subscription Server GUI.

- The **Home Page** is displayed.

NOTE: At various points in this procedure, you may encounter a security information warning. Unless you know of a specific potential danger that you must avoid, click on the **Continue submission** button when the warning is displayed.

2 Click on the **Add Subscriptions** link.

- The **Add Subscriptions** page is displayed (see Figure 16.1-5).



The screenshot shows a web browser window titled "Spatial Subscription Server OPS - Microsoft Internet Explorer". The address bar shows the URL "http://f4om101.hitc.com:22200/cgi-bin/EcNbAddSubscription.pl". The page content includes a navigation menu with the following items: Home Page, List Events, Manage Subscriptions, Add Subscriptions, List Themes, Monitor Queues, and Help. The main form area contains the following fields and controls:

- User Id:
- Status:
- Start Date (mm/dd/yyyy hh:mm):
- Expiration Date (mm/dd/yyyy hh:mm):
- Subscribe to Event section:
 - Collection Short Name:
 - Apply:

Figure 16.1-5. Add Subscription

3 Type the User Id for the requesting user in the **User Id** text entry field.

- The entered User Id must be a valid registered user (i.e., must be listed in the User Profile database).
- The typed entry is displayed in the **User Id** field.

4 To select a **Status** option click on the appropriate choice from the option list.

- **Active.**
- **Inactive.**

- 5 If the start date for the subscription is different from the default (current date and time) type the appropriate date and time in the **Start Date (mm/dd/yyyy hh:mm)** text entry box.
 - The date and time should be entered in *mm/dd/yyyy hh:mm* format.
- 6 If the expiration date for the subscription is different from the default (one year from the current date and time) type the appropriate date and time in the **Expiration Date (mm/dd/yyyy hh:mm)** text entry box.
 - The date and time should be entered in *mm/dd/yyyy hh:mm* format.
- 7 Type the first few characters of the name of the collection for which the subscription is to be created (e.g., **MOD04**) in the **Collection Short Name** text entry box.
- 8 Click on the **Apply** button.
 - A **SELECT Short Name/Version/Event Type** option button and a **Numbers of String Qualifiers** button are displayed (see Figure 16.1-6), along with an **Apply** button.
- 9 To select a **Short Name/Version/Event Type** option click on the appropriate choice (e.g., **MOD04_L2 003 INSERT**) from the option list.
- 10 To select a **Numbers of String Qualifiers** option click on the appropriate choice (e.g., **1**) from the option list.

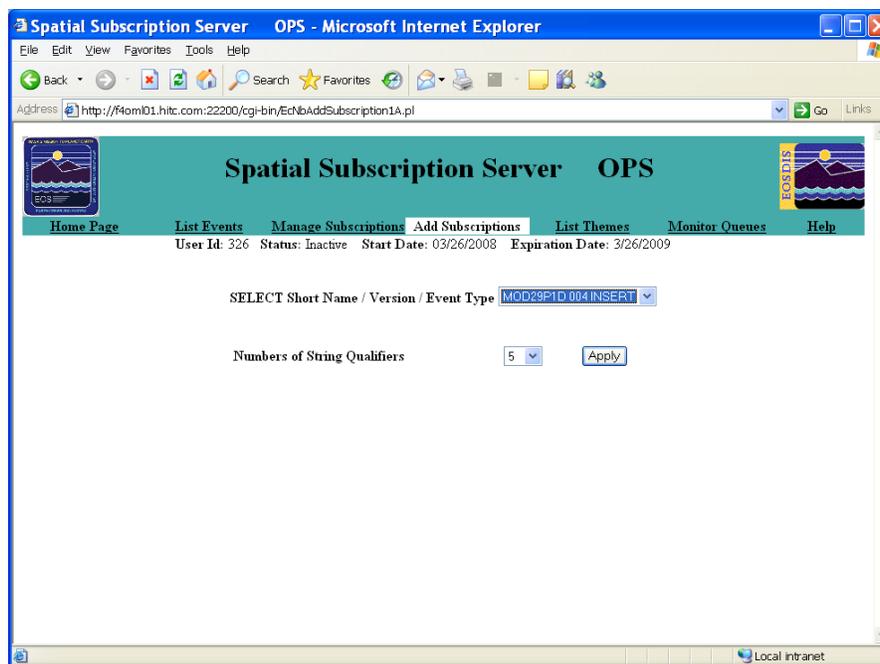


Figure 16.1-6. String Qualifiers

- 11 Click on the **Apply** button.
 - Option buttons and fields are displayed (see Figure 16.1-7) to permit the entry of data in two general categories; i.e., **Subscription Qualifiers** and **Action Information**.

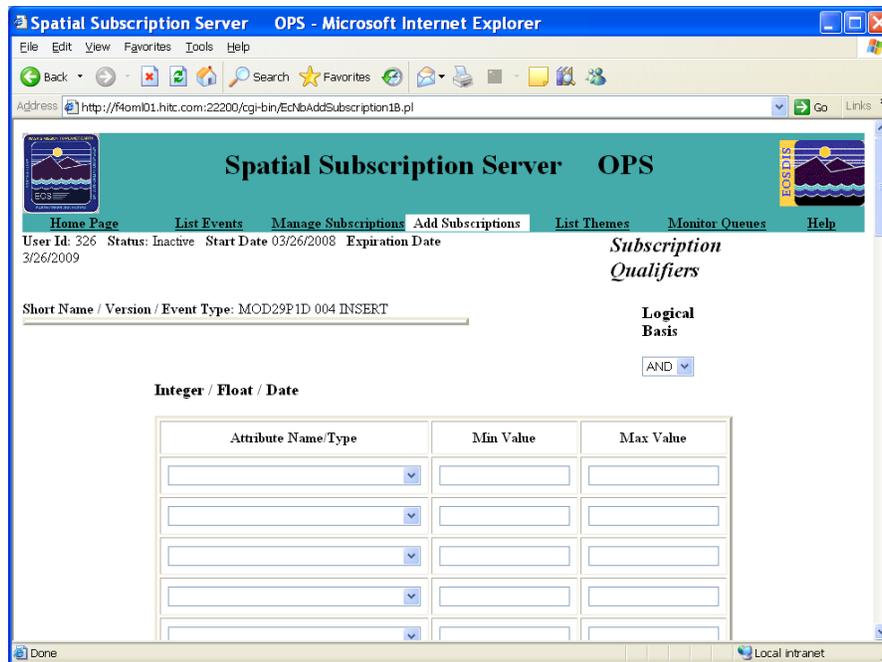


Figure 16.1-7. Subscription Qualifier

- In the **Subscription Qualifiers** section it is possible to select **Attribute Name/Type** and enter **Min Value** and **Max Value** for any valid **Integer/Float/Date** qualifiers, string **Value** qualifiers, and **Latitude** and **Longitude** coordinates to define a bounding rectangle spatial qualifier for the subscription to be created.
 - In the **Action Information** section there is a button to specify that the subscription is to be associated with a bundling order; if that button is not selected, one has the choice of one or more of three actions (i.e., **Acquire**, **E-Mail Notification**, or **Data Pool**). There are blocks with option lists and text entry fields for defining the selected action(s) to be taken upon occurrence of the event for which the subscription is to be created.
 - At the bottom of the page is an **Add Subscription** button for submitting the subscription.
- 12 To select a different **Logical Basis** option (if applicable) click on the appropriate choice (e.g., **AND**) from the option list.
 - 13 To select an integer, float, or date **Attribute Name/Type** option (if applicable) click on the appropriate choice from the **Integer/Float/Date Attribute Name/Type** option list.
 - 14 To specify a minimum value for an integer, float, or date attribute (if applicable) type the appropriate value in the **Integer/Float/Date Min Value** text entry box.
 - 15 To specify a maximum value for an integer, float, or date attribute (if applicable) type the appropriate value in the **Integer/Float/Date Max Value** text entry box.
 - 16 Repeat Steps 14 through 16 as necessary to specify additional integer, float, or date attributes.

- 17 To select a string **Attribute Name/Type** option (if applicable) click on the appropriate choice from the **String Attribute Name/Type** option list.
- 18 To specify a value for a string attribute (if applicable) type the appropriate value in the **String Value** text entry box.
- 19 Repeat Steps 18 and 19 as necessary to specify additional string attributes.
- 20 To specify spatial coordinates of intersecting LLBox (if applicable) type the appropriate values in the following text entry boxes.
- **North Latitude.**
 - **West Longitude.**
 - **East Longitude.**
 - **South Latitude.**
 - For example:
North Latitude 0
West Longitude -70
East Longitude -50
South Latitude -20

NOTE: Every subscription must have at least one action specified and may have more than one.

- 21 To associate the subscription with a bundling order (if applicable) first click in the **Bundling Order** box.
- 22 To continue the process of associating a subscription with a bundling order (if applicable) click on the appropriate choice from the **Bundling Order Selection** option list.
- If a subscription is associated with a bundling order, skip Steps 24 through 27 and go to Step 28.
- 23 To select subscription action(s) click in the following boxes as applicable (a check mark in a box indicates that the action has been selected):
- **Acquire** – to request shipment of the data specified in the subscription.
 - **E-Mail Notification** - to request e-mail notification of the event specified in the subscription.
 - **Data Pool** - to request insertion of data specified in the subscription into the Data Pool.

NOTE: Multiple actions can be selected.

- 24 If **Acquire** was selected in Step 23, either type the appropriate data or click on the appropriate choice from the option list in the relevant fields of the **Acquire Information** block:
- **User Profile.**
 - **User String** [if applicable (to distinguish the subscription from others)].
 - **First Name M.I. Last Name**
 - **Phone Number**
 - **Email Address.**
 - **Media Type.**

- **Priority.**
 - **User** [applicable to ftp push or secure copy distributions only].
 - **Password** [applicable to ftp push or secure copy distributions only].
 - **Enter password again for verification** [applicable to ftp push or secure copy distributions only].
 - **Host** [applicable to ftp push or secure copy distributions only].
 - **Directory** [applicable to ftp push or secure copy distributions only].
- 25 If **E-Mail Notification** was selected in Step 24, either type the appropriate data or click on the appropriate choice from the option list in the relevant fields of the **E-Mail Notification Information** block:
- **Action Address.**
 - **User String** [if applicable (to distinguish the subscription from others)].
 - **Metadata.**
- 26 If **Data Pool** was selected in Step 24, either type the appropriate data or click on the appropriate choice from the option list in the relevant fields of the **Data Pool Information** block:
- **Science Granules and/or Metadata** [e.g., science and metadata].
 - **Click here to add theme:** [click in the box if the granules to be added to the Data Pool as a result of the subscription are to be associated with a theme].
 - **Enter first few characters of name** [optional - if associating the granules from the subscription with a theme].
- 27 Click on the **Add Subscription** button.
- If the **Click here to add theme:** box was checked, a **Select Theme for Data Pool Action** page is displayed.
 - If the **Click here to add theme:** box was not checked, a message is displayed confirming that “Subscription *x* was added” to the database and buttons permit **Add another subscription** or **Return to Home Page**.
- 28 To select a theme for Data Pool action (if applicable) first click on the appropriate choice from the **Select Theme for Data Pool Action** option list.
- 29 To make the theme association retroactive (if applicable) first click in the **To make theme association retroactive check here:** box.
- 30 To implement the theme association (if applicable) click on the **Apply** button on the **Select Theme for Data Pool Action** page.
- A message is displayed confirming that “Subscription *x* was updated/added” to the database and buttons permit **Add another subscription** or **Return to Home Page**.
- 31 Click on the appropriate link from the following selections:
- **Add... another subscription.**
 - The **Manage Subscriptions** page is displayed.
 - **Update another subscription.**
 - The **Manage Subscriptions** page is displayed.
 - **Return to Home Page.**
 - The **Home Page** is displayed.
-

16.1.5 Subscriptions Associated with a Theme

If the operator clicks on the **List Themes** link while managing subscriptions, the GUI displays the **List Themes Request** page. By clicking on the **Apply** button the operator obtains a **Theme List** page. The list may be filtered (to select a particular theme) by entering the first few characters of the theme name in the text box on the **List Themes Request** page before clicking on the **Apply** button.

16.1.5.1 List Subscriptions Associated with a Theme

- 1 Launch the Spatial Subscription Server GUI.
 - The **Home Page** is displayed.
- 2 Click on the **List Themes** link.
 - The **List Themes Request** page is displayed (see Figure 16.1-8).
 - An “Enter first few characters of theme name (or leave blank to view all):” message is displayed on the **List Themes Request** page.

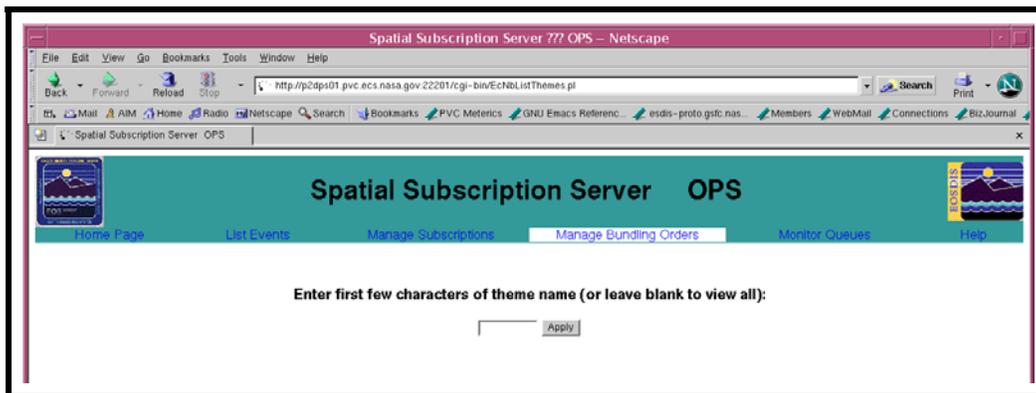


Figure 16.1-8. List Themes Request Page

- 3 To display all themes, click on the **Apply** button (without entering anything in the text box).
 - The **Theme List** page is displayed (see Figure 16.1-9) with columns containing the following types of theme information:
 - **Theme Name.**
 - **Choose Theme Action.**

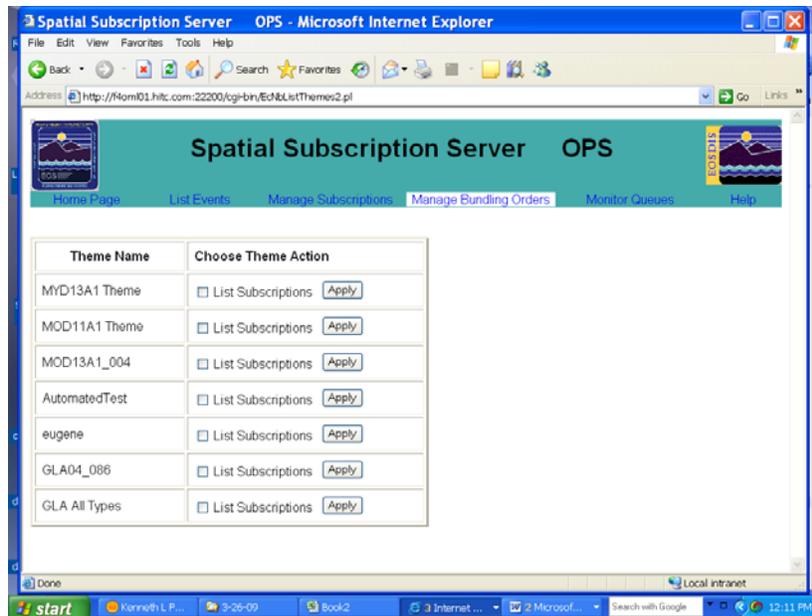


Figure 16.1-9. Spatial Subscription Server GUI Theme List Page

- All themes are displayed on the **Theme List** page.
- 4 To begin the process of viewing the list of subscriptions associated with a particular theme, click in the corresponding check box (in the **Choose Theme Action** column) on the **Theme List** page.
 - 5 To view a list of the subscriptions associated with the specified theme, click on the corresponding **Apply** button (in the **Choose Theme Action** column) on the **Theme List** page.

- The **List Subscriptions for Theme** page is displayed (see Figure 16.1-10).

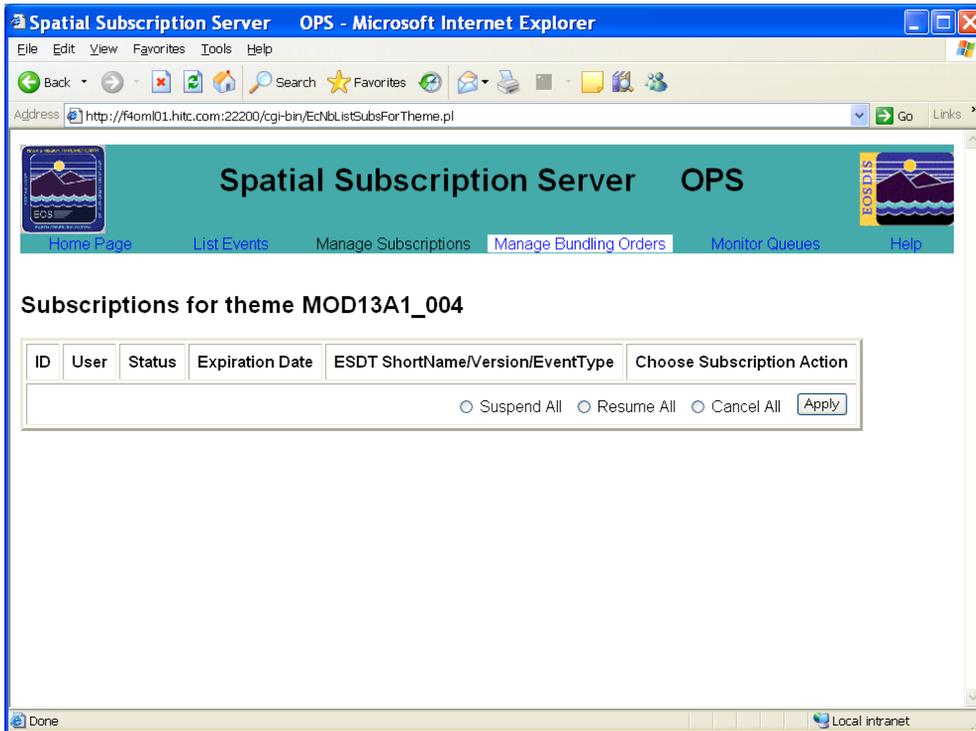


Figure 16.1-10. List Subscriptions for Theme page

- The subscription(s) associated with the specified theme is (are) displayed.
 - Buttons are available for viewing, updating, or canceling each subscription being displayed or suspending, resuming, or canceling all subscriptions. (Refer to the applicable procedure for instructions on performing any of those actions.)
- 6 Observe information displayed on the **List Subscriptions for Theme** page.
- The table on the **List Subscriptions for Theme** page has columns containing the following types of subscription information:
 - **ID.**
 - **User.**
 - **Status.**
 - **Expiration Date.**
 - **ESDT ShortName/Version/Event Type.**
 - **Choose Subscription Action.**
 - The **Choose Subscription Action** column has radio buttons for taking the following actions with respect to the corresponding subscription:
 - **View.**
 - **Update.**
 - **Cancel.**

- At the bottom of the table there are radio buttons for selecting the following actions with respect to all listed subscriptions:
 - **Suspend All.**
 - **Resume All.**
 - **Cancel All.**
- 7 To take action with respect to all subscriptions associated with the theme first click on the appropriate radio button (i.e., **Suspend All**, **Resume All**, or **Cancel All**) at the bottom of the table on the **List Subscriptions for Theme** page.
- The button is filled to indicate selection of the option.
- 8 To implement a selected action with respect to all subscriptions associated with the theme click on the **Apply** button at the bottom of the table on the **List Subscriptions for Theme** page.
- If **Suspend All** was the selected action, an “All associated subscriptions have been suspended” message is displayed.
 - If **Resume All** was the selected action, an “All associated subscriptions have been resumed” message is displayed.
 - If **Cancel All** was the selected action, a confirmation page is displayed with the message “Are you sure that you want to cancel subscription *x*?”
 - Click on the **Yes** link to confirm the deletion.
 - Click on the **No** link to abort the deletion.
- 9 Click on the **View refreshed subscription list** link (if applicable).
- The **List Subscriptions for Theme** page is displayed.
-

16.1.6 Manage Bundling Orders

If the operator clicks on the **Manage Bundling Orders** link on the **Home Page** or other page where the link is available, a list of bundling orders. The list includes a **Bundling Order** identifying number for each bundling order, the **User** for whom the bundling order was created, the **Creation Date** and **Expiration Date**, the **Media Type**, and **Status**. There is an **Add Bundling Order** link to a page where the operator can add a bundling order and a **Configure Defaults** link to a page where the operator can set default parameters for configuring bundling orders. There are also three option buttons and a **Filter** button, permitting the operator to filter the list by user, media type, and status. Finally, at the right side of the page, there is a **Choose Bundling Order Action** column permitting operators an option, for each listed bundling order, to **View**, **Update**, **Cancel**, or **List Subs** (list the subscriptions) associated with the bundling order, with an **Apply** button to implement a selected option.

In addition to the links for listing and adding bundling orders, there is a link on the **Manage Bundling Orders** link to **Configure Defaults**. These defaults set the values that appear at the bottom of the data page for each media type. It also shows the current value for minimum bundle size (GB) for each media and FTP type. on the **Change Bundling Criteria** button at the bottom. There is also a **Reset** button to clear the data entry fields.

16.1.6.1 View Bundling Orders

1 Launch the Spatial Subscription Server GUI.

- The **Spatial Subscription Server Home Page** is displays.

NOTE: At various points in this procedure, you may encounter a security information warning. Unless you know of a specific potential danger that you must avoid, click on the Continue submission button when the warning is displayed.

2 Click on the **Manage Bundling Orders** link.

- The **Manage Bundling Orders** page is displayed (see Figure 16.1-11).

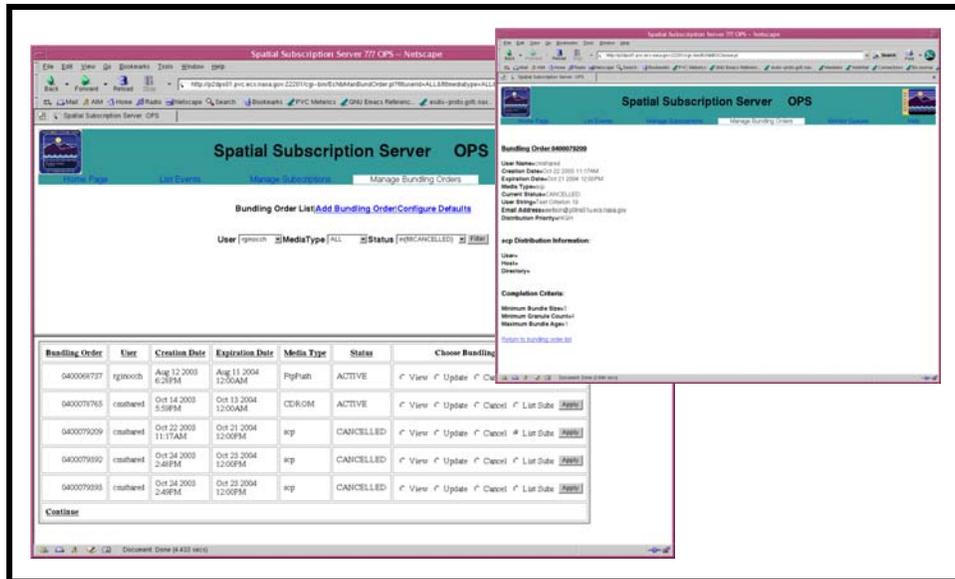


Figure 16.1-11. Manage Bundling Orders Page (Part 1)

3 Observe information displayed on the **Manage Bundling Orders** page.

- The table on the **Manage Bundling Orders** page has columns containing the following types of bundling order information:
 - **Bundling Order.**
 - **User.**
 - **Creation Date.**
 - **Expiration Date.**
 - **Media Type.**
 - **Status.**
 - **Choose Bundling Order Action.**
- The column headers in the table, except for **Choose Bundling Order Action** are links for sorting the list.
- The **Choose Bundling Order Action** column has radio buttons for taking the following actions with respect to the corresponding bundling order:
 - **View.**
 - **Update.**

- **Cancel.**
 - **List Subs** [list associated subscriptions].
 - There are option lists for filtering the table data by **User**, **Media Type**, and/or **Status**.
 - There are links on the page to **Add Bundling Order** and **Configure Defaults**.
- 4 To filter the list to display certain types of bundling orders only, click on the appropriate option button (i.e., **User**, **Media Type**, or **Status**) and then click to select the desired option from the option list.
- The selected choice is displayed in the option field.
- 5 Repeat Step 4 to select an additional filter, if applicable.
- 6 Click on the **Filter** button to implement the selected filter.
- A list is displayed showing subscriptions that meet the filter criteria only.
- 7 To view a particular bundling order first click on the **View** radio button in the **Choose Bundling Order Action** column for the bundling order.
- The button is filled to indicate selection of the option.
- 8 To implement the selected action click on the **Apply** button in the **Choose Bundling Order Action** column for the bundling order.
- A **View Bundling Order** page is displayed.
- 9 Observe information displayed on the **View Bundling Order** page (see Figure 16.1-12).

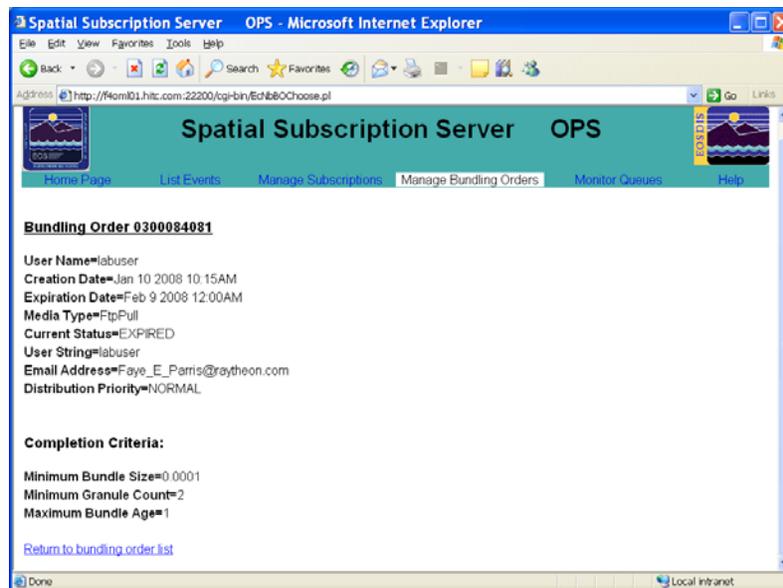


Figure 16.1-12. Manage Bundling Orders Page (Part 2)

- The **View Bundling Order** page displays the following types of bundling order information:
 - **Bundling Order ID.**
 - **User Name.**
 - **Creation Date.**
 - **Expiration Date.**

- **Media Type.**
 - **Current Status.**
 - **User String.**
 - **Email Address.**
 - **Distribution Priority.**
 - **scp distribution information: User** (if applicable).
 - **scp distribution information: Host** (if applicable).
 - **scp distribution information: Directory** (if applicable).
 - **Completion criteria: Minimum Bundle Size.**
 - **Completion criteria: Minimum Granule Count.**
 - **Completion criteria: Maximum Bundle Age.**
- There is a **Return to bundling order list** link.
- 10** Click on the **Return to bundling order list** link when finished viewing the bundling order data on the **View Bundling Order** page.
- 11** To view subscriptions associated with a particular bundling order first click on the **List Subs** radio button in the **Choose Bundling Order Action** column for the bundling order.
- The button is filled to indicate selection of the option.
- 12** To implement the selected action click on the **Apply** button in the **Choose Bundling Order Action** column for the subscription.
- A **Bundling Order Subscriptions (Subscriptions for bundling order x)** page is displayed.
- 13** Observe information displayed on the **Bundling Order Subscriptions (Subscriptions for bundling order x)** page.
- The **Bundling Order Subscriptions (Subscriptions for bundling order x)** page displays the following types of subscription information:
 - **ID.**
 - **User.**
 - **Status.**
 - **Expiration Date.**
 - **ESDT ShortName/Version/EventType.**
 - **Choose Subscription Action.**
 - The **Choose Subscription Action** column has radio buttons for taking the following actions with respect to the corresponding subscription:
 - **View.**
 - **Update.**
 - **Cancel.**
- 14** To take action with respect to a particular subscription first click on the appropriate radio button (i.e., **View**, **Update**, or **Cancel**) in the **Choose Subscription Action** column for the subscription.
- The button is filled to indicate selection of the option.

- 15 To implement a selected action with respect to a particular subscription click on the **Apply** button in the **Choose Subscription Action** column for the subscription.
 - If **View** was the selected action, a **View Subscriptions** page is displayed.
 - Click on the **View another subscription** link or the **Return to Home Page** link (as appropriate) when finished viewing the subscription data on the **View Subscriptions** page.
 - If **Update** was the selected action, an **Update Subscriptions** page is displayed.
 - Go to the **Use the Spatial Subscription Server GUI to Update a Subscription in the NBSRV Database** procedure.
 - If **Cancel** was the selected action, a confirmation page is displayed with the message “Are you sure that you want to cancel subscription *x*?”
 - Click on the **Yes** link to confirm the deletion.
 - Click on the **No** link to abort the deletion.
 - 16 To return to the **View Bundling Order** page from the **Bundling Order Subscriptions (Subscriptions for bundling order *x*)** page click on the browser **Back** button.
 - 17 Repeat Steps 3 through 16 as necessary to view additional bundling orders.
-

16.1.6.2 Cancel Bundling Orders and Its Associated Subscriptions

- 1 Launch the Spatial Subscription Server GUI.
 - The **Spatial Subscription Server Home Page** is the displayed.
- NOTE:** At various points in this procedure, you may encounter a security information warning. Unless you know of a specific potential danger that you must avoid, click on the **Continue submission** button when the warning is displayed.
- 2 Click on the **Manage Bundling Orders** link.
 - The **Manage Bundling Orders** page is displayed.
 - 3 To cancel a particular bundling order first click on the **Cancel** radio button in the **Choose Bundling Order Action** column at the end of the row for the bundling order.
 - The button is filled to indicate selection of the option.
 - 4 To implement the selected action click on the **Apply** button in the **Choose Bundling Order Action** column for the bundling order.
 - A confirmation message displays: *Note: Any associated subscriptions will also be cancelled. Are you sure you wish to cancel bundling order <nnnnnn>?*
 - 5 Click on the appropriate button from the following selections:
 - **Yes** - to confirm cancellation of the bundling order and associated subscriptions.
 - A confirmation message displays: **Bundling order *x* has been cancelled.**
 - **No** - to abort cancellation of the bundling order.
 - The **Manage Bundling Orders** page is displayed.
 - 6 Click on the **Return to bundling order list** link (if applicable).
 - The **Manage Bundling Orders** page is displayed.
 - 7 Repeat Steps 3 through 10 as necessary to cancel additional bundling orders.
-

16.1.6.3 Add a Bundling Order

1 Launch the Spatial Subscription Server GUI.

- The **Spatial Subscription Server Home Page** is the displayed.

NOTE: At various points in this procedure, you may encounter a security information warning. Unless you know of a specific potential danger that you must avoid, click on the **Continue submission** button when the warning is displayed.

2 Click on the **Manage Bundling Orders** link.

- The **Manage Bundling Orders** page is displayed,

3 Click on the **Add Bundling Order** link.

- The **Add Bundling Order** page is displayed.

4 Type the appropriate user ID in the **User ID** text entry box.

- The typed entry is displayed in the **User ID** field.

5 If the expiration date for the bundling order is different from the default (one year from the current date) type the appropriate date in the **Expiration Date** text entry box.

- The date should be entered in *mm/dd/yyyy* format.

6 To select a **Media Type** option click on the appropriate choice (e.g., **scp**) from the option list.

7 Click on the **continue** button.

- A confirmation dialog box asks **Your present values have been entered. Continue?**

8 Click on the appropriate button from the following selections:

- **OK** - to confirm that the bundling order is to be added.
 - The GUI displays an **Add Bundling Order Detail** page (see Figure 16.1-13) that is appropriate for the selected **Media Type**.

The screenshot shows a web browser window titled "Spatial Subscription Server OPS - Microsoft Internet Explorer". The address bar displays "http://fcom011.htc.com:2200/cgi-bin/EchbCreateBundle.pl". The main content area is a form titled "Add Bundling Order". The form contains the following fields and values:

- User ID: labuser
- Expiration Date: 03/26/2009
- Media Type: CDROM
- Email Address: [empty]
- User String: [empty]
- Distribution Priority: NORMAL (dropdown menu)
- Shipping Information section with the following fields:
 - Street1: [empty]
 - Street2: [empty]
 - Street3: [empty]
 - City: [empty]
 - State: [empty]
 - Country: [empty]
 - Zip Code: [empty]
 - Phone number: [empty]
 - FAX number: [empty]

Figure 16.1-13. Add Bundling Order Detail Page

- 9 Type the appropriate data or click on the appropriate choice from the option list in the relevant fields (depending on the distribution medium selected) of the **Add Bundling Order Detail** page:

NOTE: Required fields are identified by an asterisk on the **Add Bundling Order Detail** page.

- 10 Click on the **Add Bundling Order** button.
- A “Remember Values” Confirmation dialogue box is displayed.
- 11 If a “**Remember Values**” Confirmation dialogue box is displayed, click on the appropriate button from the following selections:
- **Yes.**
 - **Never for this site.**
 - **No.**
- 12 On the add bundling order confirmation page click on the appropriate button from the following selections:
- **OK** - to confirm that the bundling order is to be added.
 - A message is displayed confirming that “Bundling Order *x* was created” and there are links to **Create another Bundling Order** or **Return to Home Page**.
 - **Cancel**- to abort the process of adding a bundling order.
 - The **Add Bundling Order** page is displayed.
- 13 Click on the **Create another Bundling Order** link (if applicable).
- The **Add Bundling Order** page is displayed.
- 14 Repeat Steps 4 through 13 as necessary to add another bundling order.
-

16.1.6.4 Update a Bundling Order

- 1 Launch the Spatial Subscription Server GUI.
- The **Spatial Subscription Server Home Page** is displayed.

NOTE: At various points in this procedure, you may encounter a security information warning. Unless you know of a specific potential danger that you must avoid, click on the **Continue submission** button when the warning is displayed.

- 2 Click on the **Manage Bundling Orders** link.
- The **Manage Bundling Orders** page is displayed.
- 3 Observe information displayed on the **Manage Bundling Orders** page.
- The **Manage Bundling Orders** page is displayed.
- 4 Click on the **Filter** button to implement the selected filter.
- A list is displayed showing subscriptions that meet the filter criteria only.
- 5 To update a particular bundling order first click on the **Update** radio button in the **Choose Bundling Order Action** column at the end of the row for the bundling order.
- The button is filled to indicate selection of the option.
- 6 To implement the selected action click on the **Apply** button in the **Choose Bundling Order Action** column for the bundling order.
- An **Update Bundling Order *x*** page (see Figure 16.1-14) is displayed.

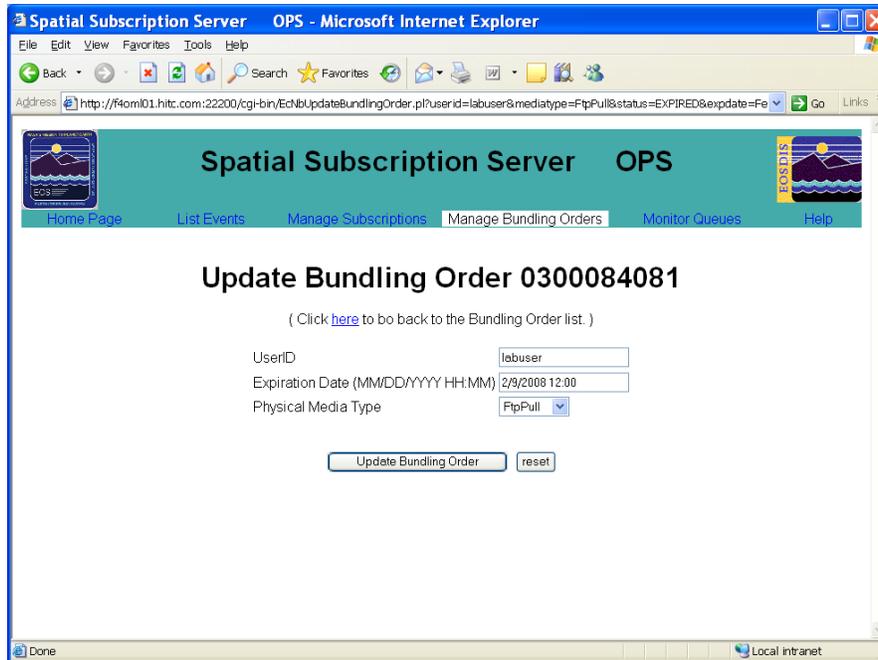


Figure 16.1-14. Update Bundling Order Page 1

- 7 To change the User ID (if applicable) type the User ID for the requesting user in the **User ID** text entry field.
 - The typed entry is displayed in the **User Id** field.
- 8 To change the expiration date for the bundling order (if applicable) type the appropriate date in the **Expiration Date** text entry box.
 - The date should be entered in *mm/dd/yyyy* format.
- 9 To select a different **Media Type** option click on the appropriate choice (e.g., **CDROM**) from the option list.
- 10 Click on the **Update Bundling Order** button.
 - A confirmation dialog box asks **Your present values have been entered. Continue?**
- 11 Click on the appropriate button from the following selections:
 - **OK** - to confirm that the bundling order is to be updated.
 - The GUI displays an **Update Bundling Order x Detail** page (see Figure 16.1-15) that is appropriate for the selected **Media Type**.

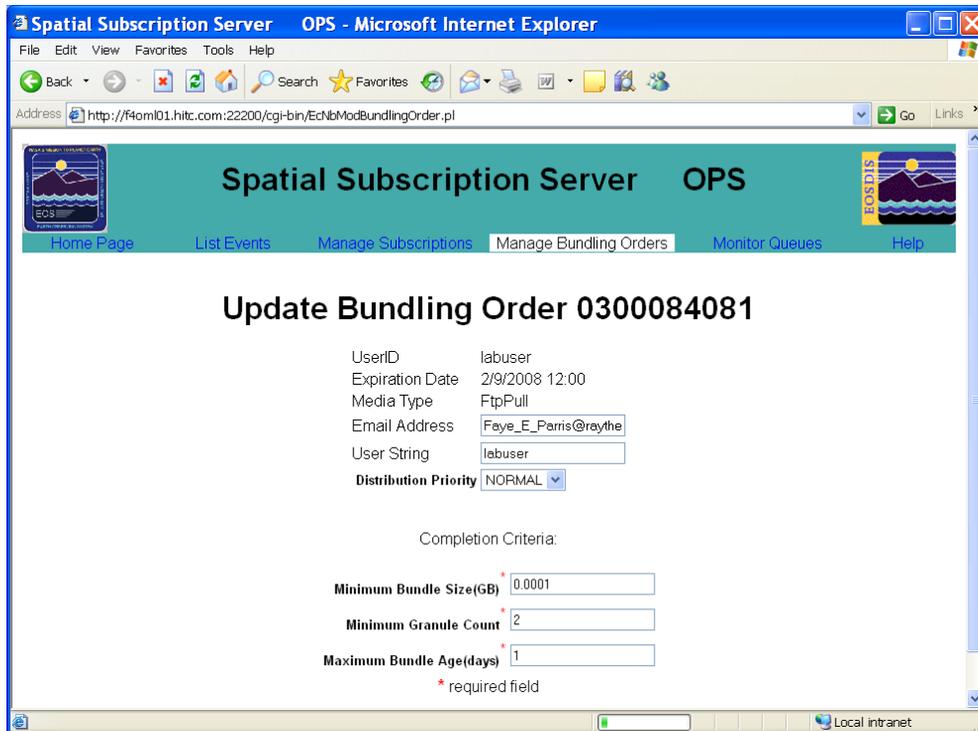


Figure 16.1-15. Update Bundling Order Page 2

12 To change, add or delete bundling order data either type the appropriate data or click on the appropriate choice from the option list in the relevant fields (depending on the distribution medium selected) of the **Update Bundling Order x Detail** page:

- **Email Address.**
- **User String.**
- **Distribution Priority.**
- **Completion Criteria: Minimum Bundle Size.**
- **Completion Criteria: Minimum Granule Count.**
- **Completion Criteria: Maximum Bundle Age.**

NOTE: Required fields are identified by an asterisk on the **Update Bundling Order x Detail** page.

13 Click on the **Update Bundling Order** button.

- A confirmation page is displayed.

14 On the update bundling order confirmation page click on the appropriate button from the following selections:

- **OK** - to confirm that the bundling order is to be updated.
 - A message is displayed confirming that “Bundling Order x was updated” and there are links to **Update another Bundling Order** or **Return to Home Page**.

- **Cancel**- to abort the process of adding a bundling order.
 - The **Manage Bundling Orders** page is displayed.
- 15 Click on the **Update another Bundling Order** link (if applicable).
- The **Manage Bundling Orders** page is displayed.
-

16.1.6.5 Configure Bundling Order Completion Criteria Default Values

- 1 Launch the Spatial Subscription Server GUI.
 - The **Spatial Subscription Server Home Page** is the displayed.
- NOTE:** At various points in this procedure, you may encounter a security information warning. Unless you know of a specific potential danger that you must avoid, click on the **Continue submission** button when the warning is displayed.
- 2 Click on the **Manage Bundling Orders** link.
 - The **Manage Bundling Orders** page is displayed.
 - 3 Click on the **Configure Defaults** link.
 - The **Configure Completion Criteria Default Values** page is displayed (see Figure 16.1-16).

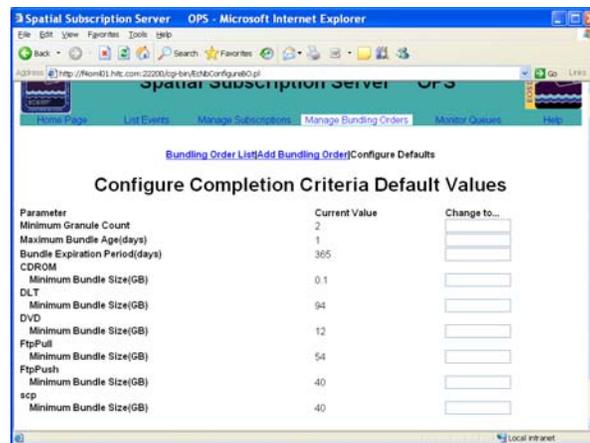


Figure 16.1-16. Configure Completion Criteria Default Values Page (Part 1)

- 4 Observe information displayed on the **Configure Completion Criteria Default Values** page.
 - The **Configure Completion Criteria Default Values** page has columns containing the following types of information:
 - **Parameter.**
 - **Current Value.**
 - **Change to...** (containing text entry boxes for entering new values).
 - The rows on the page indicate the current values of the following types of parameters:
 - **Minimum Granule Count.**

- **Maximum Bundle Age (days).**
 - **Bundle Expiration Period (days).**
 - **CDROM Minimum Bundle Size (GB).**
 - **DLT Minimum Bundle Size (GB).**
 - **DVD Minimum Bundle Size (GB).**
 - **FtpPull Minimum Bundle Size (GB).**
 - **FtpPush Minimum Bundle Size (GB).**
 - **scp Minimum Bundle Size (GB).**
- 5** To change the value assigned to a parameter first type the new value in the **Change to...** text entry box at the end of the line for the appropriate parameter.
- The typed entry is displayed in the field.
- 6** Repeat Step 5 as necessary to change any additional parameters.
- 7** Click on the **Change Bundling Criteria** button.
- A confirmation page is displayed with the message “Please Confirm The Following Bundling Criteria Change” and the parameter(s) for which changes were entered with the entered value(s).
- 8** On the change bundling criteria confirmation page click on the appropriate button from the following selections:
- **OK** - to confirm that the bundling criteria are to be changed.
 - The confirmation page is closed and the **Current Value** column on the **Configure Completion Criteria Default Values** page reflects the change(s).
 - **Cancel**- to abort the process of changing bundling criteria.
 - The confirmation page is closed and the entries in the **Current Value** column on the **Configure Completion Criteria Default Values** page are restored to their original values.
-

16.1.7 Monitor Queues

There are two other major pages of the **Spatial Subscription Server GUI** accessible from the **Monitor Queues** link on the **Home Page**. The **List Action Queue** page provides a table listing acquire and notification actions that are being processed. On this page, the **Action Type** and **Subscription Id** column headers are links for sorting the list, and there are also **Action Type**, **Subscription**, and **Status** option buttons and a filter button for filtering the list.

The **List Statistics** page provides summary information concerning the processing of events and actions related to subscriptions. Using this page, the operator can monitor subscription processing activity, such as numbers of notifications and actions, total and average times for notifications and acquires, and other information.

The **List Failed Action** page provides information concerning failed actions. The page has buttons that the operator can use to remove failed actions.

16.1.7.1 View the Acquire and Notification Actions Being Processed

- 1 Launch the Spatial Subscription Server GUI.
 - The **Spatial Subscription Server Home Page** is the displayed.
- 2 Click on the **Monitor Queues** link.
- 3 Click on the **List Action Queue** link.
 - The **List Action Queue** page is displayed (see Figure 16.1-17) with a table listing acquire and notification actions that are being processed.

Action Type	Subscription Id	User	Collection	Version	Enqueue Time	Dequeue Time	Status
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing
Acquire	338	labuser	MYD29P1N	005	Mar 26 2008 5:04PM	Mar 26 2008 5:04PM	FinishedActionProcessing

Figure 16.1-17. Configure Completion Criteria Default Values Page (Part 2)

- 4 Observe information displayed on the **List Action Queue** page.
 - The table on the **List Action Queue** page has columns containing the following types of information:
 - **Action Type.**
 - **Subscription Id.**
 - **User.**
 - **Collection.**
 - **Version.**
 - **Enqueue Time.**
 - **Dequeue Time.**
 - **Status.**
 - The **Action Type** and **Subscription Id** column headers are links for sorting the list.

- There are option lists for filtering the table data by **Action Type**, **Subscription**, and/or **Status**.
- 5 To filter the list to display certain types of actions only, click on the appropriate option button and then click to select the desired option from the option list.
 - The selected choice is displayed in the option field.
 - 6 Repeat Step 5 to select an additional filter, if applicable.
 - 7 Click on the **Filter** button to implement the selected filter.
 - A list is displayed showing items that meet the filter criteria only.

16.1.7.2 View and Remove Failed Actions

- 1 Launch the Spatial Subscription Server GUI.
 - The **Spatial Subscription Server Home Page** is the displayed.
- 2 Click on the **Monitor Queues** link.
- 3 Click on the **List Failed Action** link.
 - The **List Failed Action** page is displayed (see Figure 16.1-18) with a table listing acquire and notification actions that are being processed.

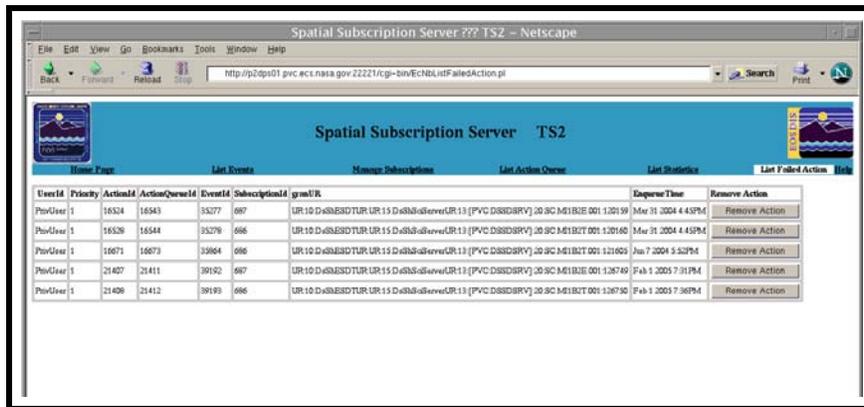


Figure 16.1-18. List Failed Action Page

- 4 Observe information displayed on the **List Failed Action** page.
 - The table on the **List Failed Action** page has columns containing the following types of information:
 - **UserId.**
 - **Priority.**
 - **ActionId.**
 - **ActionQueueId.**
 - **EventId**
 - **SubscriptionId.**
 - **granUR.**
 - **Enqueue Time.**
 - **Remove Action.**

- The **Remove Action** column contains **Remove Action** buttons for removing failed actions.
- 5 To remove a failed action click on the **Remove Action** button at the end of the row for the action.
 - A confirmation page is displayed.
 - 6 Click on the appropriate link from the following choices:
 - **Remove Action for another Action ID** – to return to the **List Failed Action** page.
 - **Return to Home Page** – to return to the Home page without taking action on any other failed actions.
-

16.1.7.3 View Statistics on Processing of Events and Actions by the NBSRV

- 1 Launch the Spatial Subscription Server GUI.
 - The **Spatial Subscription Server Home Page** is the displayed.
- 2 Click on the **Monitor Queues** link.
- 3 Click on the **List Statistics** link.
 - The **List Statistics** page (see Figure 16.1-19) is displayed.

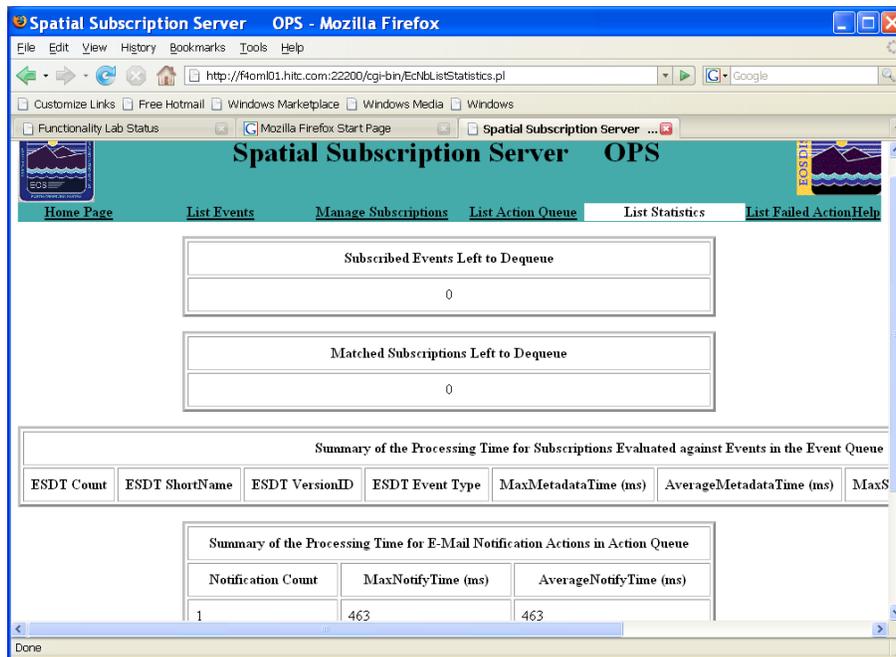


Figure 16.1-19. List Statistic Page

- 4 Observe information displayed on the **List Statistics** page.
 - The **List Statistics** page has a summary showing the number of **Subscribed Events Left to Dequeue**.
 - The **List Statistics** page has a summary showing the number of **Matched Subscriptions Left to Dequeue**.

- The **List Statistics** page has a **Summary of the Processing Time for Subscriptions Evaluated against Events in the Event Queue** table that has columns containing the following types of information:
 - **ESDT Count.**
 - **ESDT Short Name.**
 - **ESDT VersionID.**
 - **ESDT Event Type.**
 - **MaxMetadataTime (ms).**
 - **AverageMetadataTime (ms).**
 - **MaxSubEvalTime (ms).**
 - **AverageSubEvalTime (ms).**
 - The **List Statistics** page has a **Summary of the Processing Time for E-Mail Notification Actions in Action Queue** table that has columns containing the following types of information:
 - **Notification Count.**
 - **MaxNotifyTime (ms).**
 - **AverageNotifyTime (ms).**
 - The **List Statistics** page has a **Summary of the Processing Time for Distribution Actions in Action Queue** table that has columns containing the following types of information:
 - **Acquire Count.**
 - **MaxAcquireTime (ms).**
 - **AverageAcquireTime (ms).**
-

16.1.8 Using the SSS Command Line Interface (CLI)

The Spatial Subscription Server (SSS) Command Line Interface (CLI) utility is intended for full-capability operators only. Because it is a UNIX utility, the SSS CLI depends on standard UNIX permissions to restrict execution of the script to authorized users.

The full-capability operator can perform the following tasks using the Spatial Subscription Server (SSS) Command Line Interface (CLI):

- View subscription.
- Add a new subscription.
- Update a subscription.
- Delete a subscription.

However, before updating a subscription or adding a new subscription, it is necessary to prepare an input file that is specified as an argument when using the SSS CLI.

When the operator uses the SSS CLI to view a subscription, the CLI creates a text file that the operator subsequently opens to view the subscription information. It is recommended that before updating a subscription using the SSS CLI the operator view the subscription first, which results in the creation of a text file that can be edited for use as input to the command for updating the

subscription using the SSS CLI. In the same vein, before adding a new subscription, it would be useful to view a subscription that is similar to the one to be added, edit the resulting text file, and specify the edited file as an input to the command for adding the subscription.

As previously mentioned, before updating a subscription or adding a new subscription, it is necessary to prepare an input file that is specified as an argument when using the SSS CLI. Although it is possible to create the needed file from scratch, it is generally much easier to use the SSS CLI to view a similar subscription, edit the resulting text file, and specify the edited file as an input to either the Add or Update command (as applicable).

Physical media distributions for subscriptions are supported through the use of bundling orders. The simplest way to do this is to create a bundling order via the GUI and then “bundle” the subscription by specifying the bundling order ID. Alternatively, if a bundling order ID is not specified for a physical media distribution, a bundling order will automatically be created for the subscription; however, in this case, all of the required information for the bundling order (such as shipping information) must be specified in the input file for the subscription.

If an operator updates a bundled subscription without altering the bundling order ID, the bundling order will be updated along with the subscription.

16.1.8.1 Prepare Input Files for Use with the SSS CLI

- 1 Access a terminal window logged in to the SSS host.
 - Example of SSS host names include **x40ml01**.
- 2 Type **cd *path*** then press **Return/Enter**.
 - ***path*** is the directory path for the file to be created or edited (e.g., /home/cmops/subscriptions).
 - The ***MODE*** will most likely be one of the following operating modes:
 - OPS (for normal operation).
 - TS1 (for SSI&T).
 - TS2 (new version checkout).
 - Note that the separate subdirectories under /usr/ecs apply to different operating modes.
- 3 Type **vi *filename*** then press **Return/Enter**.
 - ***filename*** is the name of a file to be opened.
 - It may be either the name of an existing file (e.g., a subscription file ordered using the SSS CLI View command) or the name of a new file.
 - For example:

```
x40ml01{cmops}[10]->vi sub.109.txt  
  
SUBSCRIPTION=109  
USERNAME=mauser  
STATUS=Active  
  
[...]
```

"sub.109.txt" [New file]

- Many lines have been deleted from the example.
 - The file will specify the subscription information to be sent to the NBSRV database.
 - Although this procedure has been written for the **vi** editor, any UNIX editor can be used to create the file.
- 4** Using vi editor commands create a file that specifies the relevant values to be sent to the NBSRV database.
- The text file consists of several lines of attribute-value pairs, with one attribute-value pair per line.
 - Comments can be included in the file as long as each comment line starts with the **#** character.
 - When preparing a file for updating a subscription, the number of the subscription to be updated must appear in the file [e.g., on the SUBSCRIPTION line of the file, as shown in the previous example].
 - The number of the subscription is irrelevant when adding a subscription. (The CLI ignores any subscription number in the file and assigns a new subscription number.)
 - The following vi editor commands are useful:
 - **h** (move cursor left).
 - **j** (move cursor down).
 - **k** (move cursor up).
 - **l** (move cursor right).
 - **a** (append text).
 - **i** (insert text).
 - **r** (replace single character).
 - **x** (delete a character).
 - **dw** (delete a word).
 - **dd** (delete a line).
 - **n dd** (delete *n* lines).
 - **u** (undo previous change).
 - **Esc** (switch to command mode).
- 5** Press the **Esc** key.
- 6** Type **ZZ**.
- **vi** exits and the new or edited file is saved.
 - To exit **vi** without saving the new entries in the file type **:q!** then press **Return/Enter**.
 - UNIX prompt is displayed.
-

16.1.8.2 View a Subscription Using the SSS CLI

- 1 Access a terminal window logged in to the SSS host.
 - Example of SSS host names include **x40ml01**.
- 2 Type **cd /usr/ecs/*MODE*/CUSTOM/utilities** then press **Return/Enter**.
 - Change directory to the directory containing the **SSS CLI** start-up script (i.e., `EcNbSubscriptionCLISStart`).
 - The ***MODE*** will most likely be one of the following operating modes:
 - OPS (for normal operation).
 - TS1 (for SSI&T).
 - TS2 (new version checkout).
 - Note that the separate subdirectories under `/usr/ecs` apply to different operating modes.
- 3 Type **EcNbSubscriptionCLISStart *MODE* View *number*** then press **Return/Enter**.
 - ***number*** is the subscription number to be viewed.
 - For example:
EcNbSubscriptionCLISStart OPS View 115
 - The CLI creates an output file named `sub.number.txt` (where *number* is the subscription number) in the current directory.
 - For example:
sub.115.txt
 - If the command did not appear to succeed (e.g., a message is displayed indicating that there is no subscription with the specified number), check the log file (i.e., `EcNbSubscriptionCLI.log` in the logs directory for the mode) to determine what went wrong.
- 4 Type **vi *filename*** then press **Return/Enter**.
 - ***filename*** is the name of a file to be viewed.
 - For example:
X40ml01{cmops}[10]->vi sub.115.txt
SUBSCRIPTION=115
USERNAME=resuam
STATUS=Active

[...]
"sub.115.txt"
 - Many lines have been deleted from the example.
 - Although this procedure has been written for the **vi** editor, any UNIX editor can be used to create the file.
- 5 Using **vi** editor commands observe the contents of the file.
 - The file consists of several lines of attribute-value pairs, with one attribute-value pair per line.

- Comments in the file are identified by the # character at the beginning of each comment line.
- 6 Press the **Esc** key.
- 7 Type **:q!** then press **Return/Enter**
- **vi** exits without saving any changes to the file.
 - UNIX prompt is displayed.
-

16.1.8.3 Add a New Subscription Using the SSS CLI

- 1 Access a terminal window logged in to the SSS host.
- Example of SSS host names include **x4oml01**.
- 2 Type **cd /usr/ecs/MODE/CUSTOM/utilities** then press **Return/Enter**.
- Change directory to the directory containing the SSS CLI start-up script (i.e., **EcNbSubscriptionCLIStart**).
 - The **MODE** will most likely be one of the following operating modes:
 - OPS (for normal operation).
 - TS1 (for SSI&T).
 - TS2 (new version checkout).
 - Note that the separate subdirectories under **/usr/ecs** apply to different operating modes.
- 3 Type **EcNbSubscriptionCLIStart MODE Add path/filename** then press **Return/Enter**.
- **path/filename** is the name of a file containing data describing the new subscription.
 - For example:
EcNbSubscriptionCLIStart OPS Add /home/cmops/subscriptions/sub.109.txt
 - The subscription number for the new subscription is displayed.
 - If the command did not appear to succeed, check the log file (i.e., **EcNbSubscriptionCLI.log** in the logs directory for the mode) to determine what went wrong.
-

16.1.8.4 Update a Subscription Using the SSS CLI

- 1 Access a terminal window logged in to the SSS host.
- Example of SSS host names include **x4oml01**.
- 2 Type **cd /usr/ecs/MODE/CUSTOM/utilities** then press **Return/Enter**.
- Change directory to the directory containing the SSS CLI start-up script (i.e., **EcNbSubscriptionCLIStart**).
 - The **MODE** will most likely be one of the following operating modes:
 - OPS (for normal operation).
 - TS1 (for SSI&T).
 - TS2 (new version checkout).

- Note that the separate subdirectories under /usr/ecs apply to different operating modes.
- 3 Type **EcNbSubscriptionCLIStart *MODE* Update *path/filename*** then press **Return/Enter**.
- *path/filename* is the name of a file containing data describing the updated subscription.
 - For example:
**EcNbSubscriptionCLIStart OPS Update
/home/cmops/subscriptions/sub.109.txt**
 - The subscription is updated.
 - If the command did not appear to succeed, check the log file (i.e., EcNbSubscriptionCLI.log in the logs directory for the mode) to determine what went wrong.
-

16.1.8.5 Delete a Subscription Using the SSS CLI

- 1 Access a terminal window logged in to the SSS host.
- Example of SSS host names include **x4oml01**.
- 2 Type **cd /usr/ecs/*MODE*/CUSTOM/utilities** then press **Return/Enter**.
- Change directory to the directory containing the SSS CLI start-up script (i.e., EcNbSubscriptionCLIStart).
 - The *MODE* will most likely be one of the following operating modes:
 - OPS (for normal operation).
 - TS1 (for SSI&T).
 - TS2 (new version checkout).
 - Note that the separate subdirectories under /usr/ecs apply to different operating modes.
- 3 Type **EcNbSubscriptionCLIStart *MODE* Delete *number*** then press **Return/Enter**.
- *number* is the subscription number to be deleted.
 - For example:
EcNbSubscriptionCLIStart OPS Delete 325
 - The CLI requests confirmation of the deletion.
 - If the command did not appear to succeed (e.g., no confirmation is requested), check the log file (i.e., EcNbSubscriptionCLI.log in the logs directory for the mode) to determine what went wrong.
- 4 Respond to the deletion confirmation message.
-

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17. Library Administration

17.1 EED Library Administration Overview

EED Library Administration is provided through the combined resources of Data Management (DM) and Configuration Management (CM). Library Administration includes (1) production, maintenance, and distribution of baselined EED documents, (2) delivery of approved commercial off-the-shelf (COTS) software and documentation and non-contractual documentation to the DAACs and other Government facilities; and (3) DAAC-specific production, maintenance, and distribution of documents which, due to a more timely need for document updates, are produced locally and are tailored to reflect individual DAAC needs and configurations. The DAAC specific updates are eventually incorporated into EED approved documents. There are two web sites that function as electronic distribution points for the approved data and documents. These web sites are maintained by DM and CM, respectively: The ECS Data Handling System (EDHS) and the ECS Baseline Information System (EBIS). All of these processes are discussed in more detail in this Library Administration section.

editing, document coordination, graphics, layout, and reproduction. The Document Coordination staff is responsible for all activities required to prepare CDRLs and other documentation required by the contract. To make documentation readily available, DM has established an electronic distribution via the World Wide Web through the EDHS, (<http://edhs1.gsfc.nasa.gov/>).

17.1.1.1 Authoring Documents

EED CDRLs and other documents are authored by project personnel using existing tools and templates to ensure consistency and completeness with customer requirements. A standard set of software applications are used across the EED Project. The use of this common set of production tools by both the development personnel and the documentation staff reduces redundant activities such as keystrokes and art preparation.

17.1.1.2 Formatting Documents

To ensure compliance with customer standards and to promote consistency and ease of use, a standard tool kit of document formats or templates was developed by DM. These templates are located on the Templates page of the EED Process Assets Library web site (http://dmserver.gsfc.nasa.gov/EMD_PAL/Indices/templates.html) and are used by authors to develop CDRLs and other types of documents. After a document is written or updated by an author, it is then forwarded to DM for further processing. DM assigns the document a unique document number and reviews the document for completeness and format accuracy.

17.1.1.3 Posting and Retrieval of Documents

After documents are formatted and reviewed by DM, they are reviewed and approved by the appropriate Configuration Change Board (CCB) and other reviewers as required. Approved documents, which are not otherwise restricted, are posted to the EDHS. The EDHS web site provides on-line search and retrieval of EED documentation and is the primary repository of information maintained by the EED Project. DM maintains the EDHS web pages and is responsible for the integrity of all posted documentation.

17.1.1.4 Distribution and Maintenance of Documents

EED CDRLS and Required Documents are maintained by DM, for the life of the project. A Baseline change to an Earth Observing System Data and Information System (EOSDIS) approved document is accomplished through a document change notice (DCN) or revision. Documentation produced by the project is distributed internally and/or to the customer. Dissemination includes printed hardcopy and/or electronic posting as indicated in the preceding section.

17.2 Configuration Management (CM) Overview

The EED CM Office requirements and objectives in support of EED Library Administration are to maintain and publish EED Technical Baseline Documentation on the EED Baseline Information System (EBIS), located at:

- Riverdale: <http://pete.edn.ecs.nasa.gov/baseline/>
- LPDAAC: <http://e4iil01u.ecs.nasa.gov:10160/baseline/>
- LaRC: <http://l4ii101.larc.nasa.gov:10160/baseline/>
- NSIDC: <http://n4iil01u.ecs.nasa.gov:10160/baseline/>
- ESDIS: <http://ebis.gsfc.nasa.gov:10160/baseline/>

17.2.1 Configuration Management (CM)

The EED Technical Baseline documents are updated when the EED CCB approves CCRs that pertain to the DAACs. The EED Technical Baseline documents are defined in 905-TDA-001, EED System Baseline Specification, illustrated as the following:

All **Official** documents have the **9xx-TDX-xxx-Revxx** document numbers.

- 9xx: Document series number:
 - 905: ECS System
 - 910: General Baseline
 - 911: Operating System (O/S) Patch Lists
 - 914: Release Notes
 - 916: Interfaces
 - 920: Site Specific General
 - 921: Network Infrastructure
 - 922: Disk Partitioning
- TDX: TD=Technical Document, X=site identifier (A=Applicable to all sites, E=LPDAAC(EDC), G=GES, C=ECHO, L=ASDC(LaRC), N=NSIDC, , V=VATC, P=PVC, F=EDF2)
- xxx: Document ID within a document series.
- Revxx: Revision number xx
(example: 920-TDN-001-Rev01 is document 920 series for NSIDC DAAC, document ID 001, revision 01)

The EBIS contains several different types of documents within the EED Project, such as:

- Technical documents, posted as CCRs are approved by CCB
- Custom software tracking information (e.g., custom code release CCRs, deliveries, and installation status)
- Engineering software (HOTSHELF) release information
- COTS software tracking information (e.g., COTS software CCRs, deliveries, and installation status)
- Technical directives
- Release notes
- Pre-ship reviews (PSR) documents

- CCRs and eCCRs (electronic CCRs)
- COTS release notes
- COTS inventory
- EED "as built" configurations

17.2.1.1 Posting/Retrieval of Documents/Software from Configuration Management Server

Information being disseminated on the ECS Baseline Information System (EBIS) must have been approved by the CCB.

Documents are posted in PDF format, and are posted in accordance with 905-TDA-001, EED System Baseline Specification. Documents are posted on the EBIS with the current revision level for that document. If there is any question relating to any document on the EBIS page, contact the CM representative listed on the web site page.

17.2.1.2 EED Software Library Maintenance

The EED Software Library is responsible for controlling and tracking all approved COTS software for the project. CD's, tar files, and other media is disseminated to the DAACs, depending on the type of COTS software. The Software Library maintains previous versions of COTS products and has the responsibility to ensure that only COTS products have an approved CCR before release of the product.

17.3 On-Site Documentation Overview

On-site documentation requirements and objectives in support of EED Library Administration are to generate site-specific documentation in accordance with program standards and conventions for format storage and control. EED resources will be kept informed and utilized as appropriate.

17.3.1 On-Site COTS Document and Software Maintenance

EED products deployed to the operational sites that have been released for operational use are maintained in the EED Documentation and Software COTS Library maintained at each site (On-Site SW Library). Site personnel maintain partitioned libraries to facilitate access control of science software and other software not developed by EED. Site personnel are responsible for any CM activities concerned with this library.

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18. COTS Hardware Maintenance

18.1 Overview

In this section, discussion of commercial-off-the-shelf (COTS) hardware maintenance support includes COTS hardware procured for the EED Project and some Government furnished property (GFP) and Installation-Accountable Government Property (IAGP) and Contractor-acquired Property (CAP) commercial off-the-shelf (COTS) hardware, software and material.

The following document is referenced in this section:

- Property Management Plan for the EED Project, 105-EED-001

18.2 COTS Hardware Maintenance - General

The Maintenance Engineer at the ECS Development Facility (EDF) is responsible for COTS hardware maintenance. Site Property Custodian is responsible for implementation of EED maintenance policy at the DAACs. Questions about COTS hardware maintenance policy are to be addressed through the Maintenance Engineer, using the contact procedures found in the last sentence of this section.

COTS hardware maintenance consists of preventive and corrective maintenance. COTS hardware preventive maintenance is the responsibility of the contracted COTS hardware maintenance providers. COTS hardware corrective maintenance is the responsibility of the contracted COTS hardware maintenance providers, and/or the Local Maintenance Engineer using local DAAC resources. The Site Property Custodian is the DAAC's local point of contact for directing and coordinating corrective maintenance of EED COTS hardware. COTS hardware maintenance support is available from contract COTS hardware maintenance providers according to the terms specified in each maintenance contract. Since all EED hardware is either covered by an onsite, return to manufacturer, or time-and-material maintenance contract there is no need for robust site spares provided by the EED program. Depending on the task, additional site spares may be purchased for future tasks, but that decision will be made on a task-by-task basis. Any spares that remain from the ECS contract were transferred to the EED contract and will continue to be used until exhausted. Site spares that may remain from ECS mainly consist of monitors, keyboards, mice, and a variety of circuit boards. The Site Property Custodian ensures that all COTS hardware maintenance providers comply with requirements of this The Site Property Custodian will send the required information for maintenance repair to the Maintenance Engineer. The Maintenance Engineer is available either by email or telephone during normal work hours or by cell phone for after-hour emergencies. The Maintenance Engineer's name, email address, cell phone will be forwarded to the DAAC Site Property Custodian under separate cover.

18.2.1 Corrective Maintenance

Corrective maintenance is the unscheduled repair of equipment, to include fault detection, diagnosis, isolation, repair and recovery of software and databases if appropriate. The maintenance of hardware items may be performed on site by the Site Property Custodian or the contracted maintenance provider, or by returning the failed component to the maintenance depot for repair or replacement.

18.2.2 Configuration Management

Configuration Management (CM) requirements are addressed in this document. The Site Property Custodian ensures compliance with the CM requirements resulting from a hardware maintenance action.

18.2.3 COTS Hardware Maintenance Safety

Hardware maintenance will be accomplished in a manner that ensures personnel and equipment are protected from harm. The Site Property Custodian will ensure that local safety requirements are known and observed by local site support personnel and COTS hardware maintenance providers during COTS hardware maintenance.

COTS hardware safety practices include electrostatic discharge (ESD) protection. The ESD program will be locally developed by the Site Property Custodian using applicable DAAC procedures for guidance. When not being worked on or when outside protected areas, electronic parts and assemblies are to be covered by ESD protective covering or packaging. During installation or removal of electronic parts or LRUs (Line Replaceable Unit), a common ground will be established between the technician, work area, the part, and the equipment it is to be installed in/removed from. It is the responsibility of the Site Property Custodian to ensure compliance with these safety procedures by the hardware maintenance provider and site personnel.

18.3 COTS Hardware Maintenance - Contract Information

The EED COTS procurement organization is located at the ECS Development Facility (EDF) and is responsible for contracting for COTS hardware maintenance. Cost and support considerations may result in COTS hardware maintenance being provided by a third-party provider. Questions or comments concerning COTS hardware maintenance are to be directed to the Maintenance Engineer.

18.3.1 COTS Hardware Maintenance Contract

Information relating to COTS hardware maintenance contracts is maintained by the Maintenance Engineers at the EDF. The Site Property Custodian can obtain specific information on all hardware maintenance contracts from the Maintenance Engineers at EDF, as needed.

18.3.2 Information Required to Obtain COTS Hardware Maintenance

Generally, COTS hardware maintenance providers require an access or site code and/or the serial number of the host equipment to verify that the failed item is covered under a maintenance contract. For example, if maintenance were requested for a terminal/monitor or disk drive, the serial number of the parent workstation or server would need to be provided to the maintenance provider. The serial number may also be the access code for that provider. The information needed by the various COTS hardware maintenance providers to verify that maintenance is authorized is obtainable from the Maintenance Engineers at the EDF. DAAC site-specific site access numbers/site codes/contract numbers, if required, can also be obtained from the Maintenance Engineers, accordingly.

18.4 Hardware Repairs - Standard

- (1) Users/operators of EED hardware should report hardware/system problems to the site's Site Property Custodian for resolution. Users, operators, and support personnel who encounter a hardware problem will report the problem
- (2) The Site Property Custodian documents maintenance actions via an email, CCR, NCR or the ECS Defect Tracking System based on the severity of the problem. The communication is routed to the appropriate managers, engineers, maintenance engineer and Property Administrator. The maintenance engineer will take action, if required, to initiate a ticket with the vendor and provide escalation support. When the maintenance action is completed, any associated property changes are communicated via email and documented in the database by the EED Property Administrator

18.4.1 Hardware Problem Reporting

Once a failure occurs, the operator, SA and/or NA will isolate the problem to its source (i.e., Operating System, COTS application software, EED custom software, science software, network, or COTS hardware), using the action shown in Table 18.4-1, DAAC Hardware Problem Reporting Procedure.

Table 18.4-1. DAAC Hardware Problem Reporting Procedure

Step	Occurrence	Action
1	System problem discovered by an SA, NA, or operator,	a. If local troubleshooting does not fix the problem and it is determined to be hardware related, notify the Maintenance Engineer who will contact the appropriate maintenance vendor. The Maintenance Engineer will start an MWO when the COTS maintenance vendor is notified.

18.4.2 Hardware Corrective Maintenance Actions

Hardware problems are forwarded to the Site Property Custodian. The Site Property Custodian will attempt to identify the cause of the problem and employ DAAC resources to resolve the problem. If unable to correct the problem using DAAC resources, the Site Property Custodian arranges for on-site maintenance by the appropriate maintenance provider. Hardware corrective maintenance actions are described in Table 18.4-2.

Table 18.4-2. Hardware Corrective Maintenance Actions (1 of 2)

Step	Occurrence	Action
1	COTS HW problem not resolved by initial troubleshooting by operator, SA or NA.	<ul style="list-style-type: none"> a. Site Property Custodian notified of HW failure by operator, SA or NA. b. Site Property Custodian cross-reference information documenting the problem to send to the Maintenance Engineer and Property Administrator.
2	Site Property Custodian attempts to identify cause of problem.	<ul style="list-style-type: none"> a. Verifies actions and results to date by contacting SA and/or NA. b. Starts corrective maintenance process.
3	Problem resolved by Site Property Custodian or local staff.	<ul style="list-style-type: none"> a. If problem can be resolved without hardware replacement (e.g. re-seat component, cable, etc): <ul style="list-style-type: none"> 1) Correct problem, and verify resolution. 2) Prepare an email or open a ticket with ECS Defect Tracking System or NCR describing the maintenance action and forward to the EDF. b. If problem can be resolved by replacement of failed LRU with maintenance spare (if available): <ul style="list-style-type: none"> 1) Replace failed LRU and record following in email or ticket to the EDF: <ul style="list-style-type: none"> a) Part number, serial number, and model/version number of replaced LRU b) Part number, serial number, and model/version number of new LRU 3) Order replacement of failed LRU in accordance with Section 18.4.1. 4) Replace the failed LRU in accordance with Section 18.4.2. 5) Prepare an email, describing the maintenance action and forward to the EDF Maintenance Engineer and Property Administrator.

Table 18.4-2. Hardware Corrective Maintenance Actions (2 of 2)

Step	Occurrence	Action
4	Problem not resolved by Site Property Custodian or local staff.	<ul style="list-style-type: none"> a. Site Property Custodian notifies the maintenance contractor by obtaining contractor information from the Maintenance Engineers at the EDF. b. Site Property Custodian invokes return-to-depot support where appropriate, c. Prepare an email, describing the maintenance action and forward to the EDF Maintenance Engineer and Property Administrator.

18.4.3 Contract On-Site Hardware Maintenance

When on-site hardware maintenance support is necessary, the Site Property Custodian will notify the applicable maintenance contractor and request assistance. The call for support will be documented by the Site Property Custodian, noting the date and time the contractor was called. Refer to Table 18.4-3 for more information about obtaining on-site COTS hardware maintenance support.

Table 18.4-3. Obtaining On-Site Hardware Maintenance Support (1 of 3)

Step	Occurrence	Action
1	Local support effort did not resolve the problem.	<p>Site Property Custodian gathers information needed to obtain contract maintenance support and contacts the COTS maintenance vendor. Common information that is needed when contacting maintenance vendors is described below.</p> <ul style="list-style-type: none"> 1) Make, model, serial number, and location of failed systems. 2) Description of problem and symptoms. 3) Criticality of the COTS hardware experiencing the problem.
2	Site Property Custodian actions	Jointly determine between maintenance contractor and site operations staff an acceptable time to bring the equipment down for maintenance [only applicable when entire device is down. Coordination to schedule down time is only required for a functional, but impaired, device]
3	Maintenance technician arrives at the site.	<ul style="list-style-type: none"> a. Site Property Custodian arranges for site access using local established procedures. b. If required, Site Property Custodian requests System Administrator site Help Desk, or other appropriate and authorized personnel to shut down the machine at the predetermined time so that corrective action(s) can begin. Note that any user affected by this action must be notified prior to the machine/system shutting down. c. Site Property Custodian escorts maintenance technician to the hardware d. Site Property Custodian ensures maintenance provider's technician follows all ESD precautions. Site Property Custodian assists the maintenance technician in resolving the problem. This includes: <ul style="list-style-type: none"> 1) Arranging for a demonstration of the problem (if possible) 2) Arranging for the equipment to be shut down. 3) Obtaining site available technical references, when needed

Table 18.4-3. Obtaining On-Site Hardware Maintenance Support (2 of 3)

Step	Occurrence	Action
3a	Maintenance technician corrects the problem by replacement of parts.	<p>If a part is replaced, the Site Property Custodian accomplishes the following:</p> <ol style="list-style-type: none"> 1) Obtains from the failed part or the maintenance technician: <ol style="list-style-type: none"> a) Serial number, equipment identification number (the EIN number on the silver label), and model/version 2) Obtains from the new part: <ol style="list-style-type: none"> a) Part number, serial number, and manufacturer's model number 3) Updates the email to the Maintenance Engineer and Property Administrator with the following information: <ol style="list-style-type: none"> a) Actions taken to correct the problem. b) Part number, serial number, and model/version, and EIN (if applicable) of the old and new item c) Name of the item replaced d) Arrival date and time e) Any delay time experienced in completing the corrective action and reason for delay time to repair
3b	Maintenance technician corrects the problem without replacement of parts	<p>If no parts were replaced, the Site Property Custodian updates the email to the Maintenance Engineer and Property Administrator with :</p> <ol style="list-style-type: none"> 1) Actions taken to correct the problem. 2) Time and date technician arrived 3) Time and date repair was started and completed
3c	Site Property Custodian requests the SA to make the system functional	<ol style="list-style-type: none"> a. SA restores data, operating system, patches or other SW items to bring the system on line. b. Notes the amount of restore time for the Site Property Custodian.
3d	Maintenance technician does not resolve the problem	<ol style="list-style-type: none"> a. Site Property Custodian request the Maintenance vendor provide additional technical and or managerial resource to resolve the problem. b. Site Property Custodian notifies Maintenance Engineer that problem repair effort as been delayed, and escalated. c. Site Property Custodian documents all escalation activity until further action is taken. d. Receipt of a completed copy of the dispatch trouble ticket from the vendor e. The information from the vendor's ticket is consistent with the information documented for Maintenance Engineer and Property Administrator. f. Record all actions for future reference in the email to the appropriate EDF personnel.
4	Site Property Custodian reports actions taken	<ol style="list-style-type: none"> a. After the failure is repaired complete email and send it to the EDF. b. If appropriate ensures the local and or EED Configuration Control Board is properly notified of the configuration alterations and requests a formal change using procedures in Chapter 8.

Table 18.4-3. Obtaining On-Site Hardware Maintenance Support (3 of 3)

Step	Occurrence	Action
5	Site Property Custodian files	A copy of vendors dispatch sheet, and related documents in a permanent file and references email notes sent to the Maintenance Engineer and Property Administrator.

18.4.4 Return-to-Depot Support

If the OEM (Original Equipment Manufacturer) vendor does not provide on-site support, a return to vendor maintenance concept is used. There are two types of return to vendor maintenance. The Maintenance Engineers at the EDF will specify which concept is to be used. One is advance replacement where the new LRU is requested prior to sending the old LRU to the vendor. If advance replacement is not provided, the Site Property Custodian must return the failed item to the appropriate repair center using procedures contained in Section 18.4-2.

Table 18.4-4 provides the Return to Depot procedures.

Table 18.4-4. Procedure for Return to Depot (Advance Replacement and Return before Replacement)

Step	Occurrence	Action
1a	Advance Replacement authorized	a. Contact vendor and request replacement. b. Return broken part to vendor when new part is installed and working.
1b	Advance Replacement not Authorized	Contact the maintenance provider using the information obtained from the Maintenance Engineers at the EDF.
2	Ship Failed unit to vendor	a. Obtain an RMA number and shipping instructions from the repair vendor. b. Ship the failed unit to the vendor using local shipping procedures.
3	Replacement Part is received from the COTS maintenance vendor.	a. Place a new EIN sticker on replacement LRU. b. Install the new LRU. c. Complete the documented changed and send it to the EDF Maintenance Engineer and Property Administrator

18.4.5 Return of Failed LRUs

The Site Property Custodian is responsible for the return of failed LRUs to maintenance contractors providing replacement parts and not on site support. In such agreements the maintenance provider sends to the site a replacement for a failed component under the condition that the site will return the failed component within a reasonable time, usually not greater than 10 days. If the failed component is not returned the contract is charged the full purchase price for the item not returned.

18.5 Non-Standard Hardware Support

Non-standard COTS hardware support consists of:

- a) Maintenance support outside the Principal Period of Maintenance (PPM),
- b) Support covered under a Time and Materials contract, or
- c) Escalated support actions by the maintenance support provider.

Table 18.5-1 shows the procedure for Time and Material Support

Table 18.5-1. Procedure for Time and Material Support

Step	Occurrence	Action
1	Site Property Custodian contacts	The Time and Material Support Contractor and requests Maintenance Coordinator to obtain approval for the repair.
2	Repair is completed	If repair is approved the Site Property Custodian will send the signed receipt of report to the Maintenance Engineer to process.

18.5.1 Escalation of COTS Hardware Support Problem

In some cases OEM hardware maintenance contractors do not respond to maintenance requirements in a requisite manner that ensures prompt hardware repairs. In these cases, the Site Property Custodian should request escalation from the onsite maintenance technician. If further escalation is necessary the Site Property Custodian will request the office to escalate the issue with the vendor. When requesting escalation the original vendor trouble ticket number will be used as the reference document.

18.5.2 Low Cost Equipment – Not Repaired

Server and PC terminals, keyboards, and mice are low cost items that are not repaired, because the repair costs would exceed the cost of a new item, but are replaced on a one-to-one basis by either the OEM maintenance contractor or the time and material contractor. Site Property Custodian will follow the same procedures for replacing these items as for other LRUs. If the appropriate maintenance contractor does not remove the failed items, they may be disposed of using local procedures after the email is completed and sent to the EDF. Property tags should be removed from the keyboards and mice before disposal.

19. COTS Software Maintenance

19.1 Introduction

EED staff at the EDF provides maintenance for ECS software and firmware delivered to NASA under the EED contract.

In general, EED organizations procure, produce, deliver, and document modifications and enhancements made to ECS software and firmware. No custom firmware has been identified as part of the EED program. Commercial off-the-shelf software and firmware (COTS SW) is maintained in accordance with the EED maintenance philosophy for software which is to provide centralized support for developed items and vendor support for COTS SW.

Commercial off-the-shelf (COTS) software maintenance is a continuous activity that provides:

- Sufficient rights to use COTS software products
- Access to software vendor telephone support
- Access to vendors on line and email support
- Rights to product patches and upgrades and instructions for installing them

The COTS HW/SW Support team lead at the EDF manages EED COTS product maintenance program and other logistics operations. This includes the budget and expenditures associated with COTS software maintenance. The team establishes maintenance contracts that ensure vendor support and maintains information and procedures needed for contacting COTS product vendors. The team also manages software licenses and ushers product changes through EED's COTS software upgrade process to deploy and use them system-wide.

Daily management and execution of software maintenance activities at the DAACs is under the operational control of the DAAC managers. Operations staff is present at each site to install COTS software changes, diagnose problems, identify root causes, coordinate resolutions, and document COTS software maintenance actions performed at the site. EED COTS SW engineers provide assistance when COTS software issues exceed the capabilities of site System Administrators to resolve.

The DAAC maintenance activity includes: software configuration management (CM) including support for change control, configuration status accounting, audit activities, and software quality assurance (QA). Each site has CM authority over its own resources subject to EOSDIS delegation of roles for EEB management.

COTS software vendors provide advice, troubleshooting, and product updates for COTS products procured under the EED contract. (The term "software vendor" refers to the company having the legal right to authorize use of the software and to modify the software code.) COTS software vendor support consists of telephone support, access to an on-line solution database,

providing upgrades and patches, and resolving COTS software problems. Occasionally, vendors are called upon to install software products and updates on-site.

COTS software maintenance tasks are discussed further in the sections that follow.

19.2 COTS Software Maintenance Tasks

The Activity Outline in Table 19.2-1 is an index to the section below where COTS SW maintenance procedures can be found.

Table 19.2-1. COTS Maintenance - Activity Outline

Task	Section
Management of COTS Software Maintenance Contracts	19.2.1
Management of COTS Software Licenses	19.2.2
COTS Software Installation and Upgrades	19.2.3
Obtaining COTS Software Support	19.2.4
COTS SW Problem Reporting	19.2.5

19.2.1 Management of COTS Software Maintenance Contracts

The Supply Chain Management staff at the EDF procures COTS software vendor support. Support is typically contracted for a period of one or more years and extended or modified as operationally required. Information related to COTS software support contracts is maintained on an ILS web page.

In general, COTS software maintenance is renewed annually during the fall of the year. EED's Property Custodian works in conjunction with procurement and COTS SW engineers to determine the products, level of maintenance and quantity of licenses to be renewed. All COTS SW maintenance recommendations are approved by the EED SCDV CCB Chairperson. The EED Property Custodian ensures that all products are reviewed during the maintenance renewal period.

19.2.2 Management of COTS Software Licenses

Software licenses embody an organization's right to use COTS software products. COTS software license types include: floating, nodelock, site, and program licenses. Floating licenses allow users to run a product from any machine concurrently. Nodelock licenses let users run the product on a designated machine. Site licenses allow unlimited use of the software product at a particular site, and program licenses are licenses that can be used anywhere on the EED project.

EED's Supply Chain Management purchases software licenses as determined by EED engineers.

COTS software licenses are received and managed by the EED Property Custodian, who may also serve as COTS SW License Administrator.

The COTS SW License Administrator, who manages licenses and license keys used on the EED contract:

- a. Maintains a database that contains license keys for EED-purchased COTS SW. The COTS SW installation team (or site) provides host identifiers to the License Administrator who then obtains the necessary license keys from vendors for installation and populates the license database.
- b. Maintains accountability for all COTS SW licenses procured for the EED contract. Accountability includes tracking and reporting the as-installed location of all licenses (other than PC based products) procured for the EED program.
- c. Obtains new licenses and license keys from software vendors per approved CCRs.
- d. Assists with determining the effect of proposed COTS SW upgrades and patches on ECS product licenses.
- e. Assists COTS SW engineers and DAAC System Administrators resolve COTS SW license problems, as required.

19.2.3 COTS Software Installation and Upgrades

COTS software upgrades are subject to appropriate CCB approval before they may be loaded on any platform. EED's COTS SW Librarian maintains CM-controlled repositories and distributes COTS software upgrades as directed by the CCB using procedures contained in Chapter 9, "Configuration Management". Site System Administrators are responsible for upgrading the software on host machines and reporting status to the Configuration Management Administrator (CMA), COTS Software Librarian and EED Property Custodian.

COTS software vendors may provide COTS software patches in response to a DAAC's call for assistance in resolving a COTS software problem. When a COTS software patch is received directly from a COTS software vendor -- which includes downloading the patch from an on-line source -- appropriate site personnel inform the DAAC CCB via CCR. It is these individuals' responsibility to notify the CCB of the patch's receipt, purpose, and installation status, using procedures contained in Chapter 9, "Configuration Management," and to comply with the CCB decisions. The appropriate site personnel install the COTS SW patches as directed by the CCB.

In addition to providing patches to resolve problems at a particular site, the software vendor will periodically provide upgrades of COTS software in order to improve the product. These upgrades are issued for all licenses covered by a software maintenance contract. COTS software upgrades obtained on physical media will be shipped to the EED Property Custodian who receives and enters them into inventory. The EED Property Custodian forwards the media to the COTS Software Librarian and notifies appropriate engineers and System Administrators that new licenses/keys have arrived. The COTS HW/SW Support team then directs COTS SW deployment activities. COTS software upgrades obtained electronically are placed in an on-line repository maintained under CM control by the COTS Software Librarian at the EDF.

19.2.4 Obtaining COTS Software Support

COTS SW vendors provide contracted support. When a problem attributed to COTS software occurs at a site, authorized personnel contact the vendor's technical support staff.

The software vendor's technical support center verifies contract support authorization, assists in pinpointing the problem's cause, and provides a recommended solution. The solution may involve a patch or work-around, or the fix may be included in a future release. If a patch exists to correct the problem, the patch is identified and provided by the software vendor over the Internet or mailed to the requester. If a patch is required but unavailable, the site and vendor together determine the severity of the problem. In cases where the problem is critical, a temporary patch or work-around may be provided. If non-critical, the solution may be incorporated in a future update or release. The DAAC and EED CCBs must authorize the patch to be installed. When necessary, this authorization may be made after-the-fact. If the patch is needed to proceed with operations, DAAC personnel are notified of the requirement. Configuration Management (Chapter 9) applicable requirements should be followed for baselining the change.

Generally, COTS SW vendors require a customer number, site id, and/or the serial number of the host equipment to verify that the software is covered under a maintenance contract. The information needed by the various COTS SW vendors to verify that maintenance is authorized is specified on the ILS web page. Some COTS SW vendors require that EED designate individuals authorized to contact them; the number of individuals varies among the vendors. The EED Property Custodian, in coordination with DAACs, arranges with the COTS SW vendors for specified personnel to become authorized contact persons. Vendor support contact information can be found using the ILS web page located at <http://dmserver.gsfc.nasa.gov/ils/intro.html>.

19.2.5 COTS Software Problem Reporting

The first person experiencing or observing a potential COTS SW problem opens a trouble ticket in TestTrack Pro (TTPro) according to procedures in Chapter 8, Problem Management. This person attempts to identify the source of the problem and ascribe it to system configuration, hardware, network, COTS SW, custom SW, science SW, documentation, or procedures.

One method of troubleshooting COTS SW problems is to scan the software vendor's web site for solutions for similar problems. The software vendor's web site address can be obtained from the ILS web page.

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If beyond the capabilities of the site to troubleshoot, site staff escalates the trouble ticket to the system level, notifying the EED Problem Resolution Board.

If a COTS SW problem is confirmed, an authorized individual contacts the vendor's technical support center for assistance. Information on contacting the software vendor's technical support center is in Section 19.2.4, "Obtaining COTS Software Support."

Appropriate site personnel must annotate all actions inclusive of dates, time, resolutions, and comments in the TTPro trouble ticket as the repair progresses. COTS software corrective action reporting follows the procedures contained in Chapter 8, "Problem Management" and the configuration control requirements contained in Chapter 9, "Configuration Management," when a configuration item is removed and/or replaced with a different version or release.

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If a software vendor's efforts have not produced satisfactory results within a reasonable period of time, sites' staffs notify EED's COTS HW/SW Support Team to request an escalation of software vendor support. Escalation may result in increased review or participation by vendor managers in resolving a problem, the assignment of additional resources to resolve the problem, and/or a more highly qualified technician assigned to resolve the software problem.

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If beyond the capabilities of the site to troubleshoot, site staff escalates the trouble ticket to the system level, notifying the EED Problem Resolution Board.

If a COTS SW problem is confirmed, an authorized individual contacts the vendor's technical support center for assistance. Information on contacting the software vendor's technical support center is in Section 19.2.4, "Obtaining COTS Software Support."

Appropriate site personnel must annotate all actions inclusive of dates, time, resolutions, and comments in the TTPro trouble ticket as the repair progresses. COTS software corrective action reporting follows the procedures contained in Chapter 8, "Problem Management" and the configuration control requirements contained in Chapter 9, "Configuration Management," when a configuration item is removed and/or replaced with a different version or release.

COTS software problems that cannot be corrected using site and contracted software support or that may affect other DAAC sites should be escalated to the EDF using problem management procedures in Chapter 8. The EDF is staffed with engineers having specific knowledge of each ECS COTS product who can assist in diagnosing and resolving the problem.

If a software vendor's efforts have not produced satisfactory results within a reasonable period of time, sites' staffs notify EED's COTS HW/SW Support Team to request an escalation of software vendor support. Escalation may result in increased review or participation by vendor managers in resolving a problem, the assignment of additional resources to resolve the problem, and/or a more highly qualified technician assigned to resolve the software problem.

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20. Property Management

This section describes procedures for the receipt, control, and accountability of EED property at EED sites. The Property Management Plan (PMP) for the EED Project, 105-EED-001, is the DCMA Property Administrator approved document that addresses the process and policies regarding how EED property is to be managed. Property Custodian and the Site property engineer should be thoroughly familiar with and comply with the policies and procedures contained in the Property Management Plan.

The Property Custodian supports the activities of receiving, inspection, storage, issue, inventory recording, accounting, and reporting of EED property at EED sites. As stated above Site Property Engineer should follow the particular procedures of the PMP; local procedures may be used as long as they do not deviate from the specific direction in the PMP. Locally developed procedures should be forwarded to and reviewed by the EED Property Administrator for consistency with this plan.

20.1 Receipt of Equipment and Software from Vendor

Most EED property will be shipped to DAACs from the EDF at Riverdale. However there may be occasions when property will be shipped directly to the DAACs from OEM vendors. In such cases, the Property Custodian will fax a copy of the Purchase Order to the Site Property Engineer to serve as a due-in notice. Upon receipt of the equipment, the Site Property Engineer will perform a receiving inspection to verify correctness of delivery, quantity received and to determine if items were damaged during shipment. The Site Property Engineer will utilize the following tables as guidance for Receipt of Incoming Items.

- Table 20.1-1, Procedure for the Receipt of Equipment
- Table 20.1-2, Procedure for Completion of the Inventory Worksheet
- Table 20.1-3, Procedure for Completion of the Non Conforming Product Report
- Table 20.1-4, Receiving Process Checklist

The worksheet for documenting inventory and the relevant checklists will be provided by the Property Custodian. When all checklists are signed and verified, the Site Property Engineer faxes or e-mails all forms to the Property Custodian updates the Inventory Database. When a product is received that does not conform to the purchase order, the COTS Non-Conforming Product Report (NCR) form (form number ILFM001-1) is used. It is located at the same URL as the Inventory Worksheet under the **COTS Non-Conforming Product Report** link.

Table 20.1-1. Procedure for the Receipt of Property

Step	Action
1	The Site Property Engineer completes the Loading Dock checklist document with the following information: Printed name of receiving individual Signature of receiving individual Date of receipt Name of the carrier Shipper's bill of lading or tracking number Customer reference number (when appropriate) Number of boxes received Condition of boxes with a notation of Satisfactory or Damaged
2	The Site Property Engineer verifies damage, shortage, overage or other discrepancies and annotates these findings on both the carrier's and site's copy. An NCR will be completed per the instructions in Table 20.1-4.
2a	If there is obvious damage to exterior packaging at the time of delivery, obtain a signature of the carrier's representative on the shipping carrier's document and notify the Property Custodian for further direction and information.
3	Begin the process of moving equipment into a controlled storage area and completing the inventory worksheet as described Table 20.1-2.

Table 20.1-2. Procedure for Completion of the Inventory Worksheet

Step	Action
1	The Site Property Engineer removes the equipment from the loading dock to controlled storage area.
2	Verifies the items received against purchase orders and vendor's packing list. Inspects visual condition of material and documents information on Inventory Worksheet.
3	Documents the serial, model numbers and other appropriate markings on the Inventory Worksheet. Performs final visual inspection of product to ensure no damage or non-conforming items have been received.
4	Places silver EIN tags on equipment or receive a virtual tag number from the Property Custodian per the instructions listed in Section 20.2.
5	Assembles equipment for burn-in and documents the burn-in process on the System Verification Checklist.
6	If required, complete an NCR per Table 20.1-3.

Table 20.1-3. Procedure for Completion of the Non Conforming Product Report

Step	Action
1	The Site Property Engineer verifies shipment discrepancies (include shortages, overages, and incorrect items/quantities/models).
2	Completes COTS NCR per instructions on the back of the form.
3	Sends the completed COTS NCR to the Property Custodian via fax or EMAIL.
4	The Property Custodian will process the NCR at the EDF and notify the DAAC of resolution.

Table 20.1-4. Receiving Process Checklist

Step	Action
1.	Verify that Loading Dock Checklist has been completed with all the appropriate information.
2.	Annotate Purchase Order number or Returned Material Authorization (RMA) on the Inventory Worksheet.
3.	If required, verify that COTS NCR has been completed and processed per Table 20.1-3.
4.	If the material is partial receipt, verify that it is segregated, labeled, marked and in a controlled storage area.
5.	If the order has discrepancies and an NCR has been forwarded to the EDF, verify that the property is segregated, labeled and documented in a controlled storage area.
6.	Verify the Inventory Worksheet, System Verification, and Receiving Process Checklist have been completed and documented. Fax or Email to the Maintenance Engineers

20.2 Receipt of Equipment and Software from the Property Custodian

The Site Property Engineer will also receive equipment from the Property Custodian. Table 20.2-1 defines the process of receiving EDF shipped equipment at the DAACs.

Table 20.2-1. The Site Property Engineer Actions for Property Received from the Property Custodian

Step	Action
1	The Site Property Engineer receives shipment with Installation Receipt (IR) report from the EED PC
2	The Site Property Engineer inspects and verifies for shipping damage, completeness using the IR report.
3	Notifies the Property Custodian immediately of any discrepancies. If discrepancies exist, annotate the IR report accordingly.
4	Sign for the property where indicated and redline location and site-specific changes on the top right header information.
5	The Site Property Engineer retains a copy for files and mails the original back to the Property Custodian.
6	The Property Custodian inputs all changes into the property Database.
7	The original signed redlined IR report and a copy of the Installation Report will be filed in the Purchase Order folder.
8	The site copies of the IR report and installation report will be filed in the site equipment folders.
9	The Site Property Engineer will coordinate installation of the equipment in accordance with approved CCR and DAAC procedures.

20.3 Equipment Tagging

EED equipment (e.g., contractor-acquired and GFP) that is separately identifiable and meets the criteria for controlled equipment as described in the Property Management Plan, will be tagged with EED property tags. NASA EED Program property located at the GSFC and ASDC sites will be classified as Installation-Accountable Government Property (IAGP) under the authority

of the NASA GSFC Industrial Property Office (Code 235.1) and be tagged with Government ECN tags. However, IAGP equipment will continue to be maintained in the property database along with the equipment tagging information for both the EED project and NASA Property Office.

In a Figure 20.3-1 illustrates EED property tags. ECS property tags are shown in Figure 20.3-1. EED property tags are similar except the contract number is: NNG10HP02C. All property shipped from the EDF will be tagged prior to shipment. If the Property Custodian have to tag or retag EED property tags will be placed on the equipment so that they are visible and easily accessible by bar-code scanners. Vendor-loaned and RSC capital equipment will not be tagged with EED property tags.

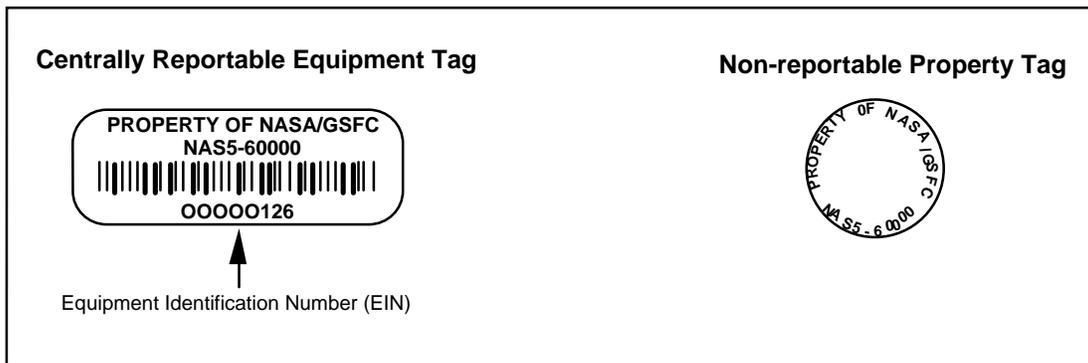


Figure 20.3-1. EED Property Tags (Actual Size)

Components of major equipment that are not separately identifiable or stocked for use, such as spares/repair parts will be assigned a C-Number EIN. The C-Number EIN will be controlled as inventory items and recorded by manufacturer, description, model/version, serial number (if applicable), location, and quantity and with the parent EIN.

Property tags of GFP equipment containing a NASA equipment control number (ECN) will not be removed. At the time of receipt of such property, an EED property tag with EIN next to the government tag will be affixed.

Equipment loaned via vendor or manufacturer for evaluation will be labeled with a tag. The tag will contain information of the EED person responsible for obtaining the loan equipment, the organization that loaned the equipment, date for return, and process to follow.

If EED property is returned to a vendor for repair or replacement the Site Property Engineer will remove the EED property tag prior to shipment. When the item is returned the Property Custodian will place a new property tag on the property and update the new tag, serial number and other indicative data and send an email to the Property Custodian for property database updates.

20.4 Property Records and Reporting

The EED Project will use the Asset Smart Property Management System to support the property management, control and reporting functions for contractor-acquired and GFP equipment. NASA EED Program property located at the GSFC and ASDC sites will be classified as Installation-Accountable Government Property (IAGP). All records both GFP, and IAGP will be maintained in the Asset Smart system by the Property Custodian.

Property records will contain a line for each item having an EIN (e.g., workstation monitor) and each of its major components (e.g., network interface cards, RAM chips and graphics card). Refer to the IR Report provided at the time of site installation. The Inventory reports are available as requested by the Property Custodian via email or telephone to the Maintenance Engineer. See Section 20.5 for specific instructions.

20.4.1 Maintaining Property Records

Property Custodians will document inventory and configuration changes in local property records within one business day of the change.

Support documentation for posting changes to property records includes the following:

- Installation Receipt Report -- This report is provided by Property Custodian at the time equipment is installed and is used to record receipts and changes of equipment at the site. It can be used to update site property records with installed location, date, and name of the person accepting receipts. This report is signed by the Site Property Engineer to acknowledge receipt of equipment at the site.
- Maintenance information prepared by the Site Property Engineer to report equipment changes resulting from maintenance or relocation actions (e.g., serial/model changes, component replacements, and relocation/reconfiguration at the site). The Site Property Engineer is required to send and email to the Maintenance Engineer once the maintenance action has been finalized.

20.4.2 Reporting Loss, Theft, Damage or Destruction

If EED or GFP property at the site is lost or stolen, the Site Property Engineer will notify the site security manager as soon as the loss is discovered and the Property Custodian within one business day. The initial written report will contain all information related to what was lost/stolen, when, where, how, and the circumstances regarding the loss/theft. The final report, due 30 days later, will contain all information required by the EED Property Management Plan and will be sent to the Property Custodian and if a report was prepared by local security personnel/police, a copy of the report should be attached. Equipment damaged or destroyed through circumstances that indicate inappropriate use, negligence, or improper care, the Site Property Engineer will likewise notify the Property Custodian of the specifics of the damage/destruction and its circumstances via email.

The Property Custodian will review such incidents and report, as required, and input them into the External Web Access Manager (EWAM) per instructions by DCMA.

20.5 Equipment Relocation

This section provides instructions for equipment relocation within a DAAC (intra-site relocation); between EED sites or between EED sites and non-EED sites (inter-site relocation); to a vendor (off-site relocation); and transfer to outside the contract (external transfer).

20.5.1 Intra-Site Relocation

Requirements for equipment reallocations within the facility or between facilities at the same site will be processed through the Site Property Engineer to maintain control and accountability of equipment inventories. Local procedures will be developed to ensure that the Site Property Engineer is aware of all property moves within a DAAC. When completed, the Site Property Engineer will report the location change in an email to the Property Custodian

20.5.2 Inter-Site Relocation

Inter-site relocation requests require a CCR approved by the EED CCB. Such requests will identify by EIN and equipment description what is to be moved, where and when it is to be moved, and the reason for the relocation. The Property Custodian will work with the losing and gaining DAAC to ensure that all property information affected by the transfer is update in Asset Smart. The losing site will coordinate the relocation resources and schedule with the gaining site and the Property Custodian. Once completed, the gaining site will report completion of the relocation to the Property Custodian by email. Any loss or damage to the equipment will be reported when it is first discovered.

20.5.3 External Transfers

Generally EED property will not be transferred outside the EED contract. If the Site Property Engineer needs to transfer EED property to organizations not supported by the EED, contact the Property Custodian for guidance. No property will be transferred without the express approval of the NASA Hardware Manager. Once approved, the Property custodian will create two 20-4 transfer documents. One document will contain the transfer of the equipment to the NASA code 423A IAGP. The second document will contain the transfer of the equipment from NASA code 423A to the requesting agency. Both transfer documents must be approved by all NASA Authoritative members before final approval of transfer. After the transfer has been completed EED will no longer be financially accountable to maintain the transferred equipment therefore placing all responsibilities solely on the requesting agency.

20.6 Inventories and Audits

Annually Property Custodian will complete a 100 percent physical inventory of controlled EED property and GFP at the site. This inventory may be conducted in conjunction with the Task 201 annual inventory conducted by the office. EED personnel responsible for maintaining property records will provide technical assistance but will not be part of any inventory count teams. Inventories will be designed to achieve the following objectives:

- Verify that accountable equipment is still on hand.
- Confirm or determine current locations and custodial responsibility for equipment and material.
- Identify unrecorded equipment that qualifies for control.
- Locate or identify missing equipment.
- Identify unused or under utilized equipment and equipment or material in need of repair or rehabilitation.

If the annual inventory is done independently of the annual inventory the Property Custodian will, at the time of completion of the site directed inventory, forward a signed copy of the Inventory Reconciliation Report to the Property Administrator. The Inventory Reconciliation Report will be signed by the site's Property Custodian attesting that a 100 percent inventory was conducted and that all equipment is accounted for except for those indicated as not on hand. All discrepancies will be explained.

20.7 Storage

Access to equipment and software in storage will be limited to authorized personnel and controlled by the Property Custodian. The Property Custodian will ensure that storage areas are kept in a clean, orderly manner. Material will be stored on shelves, in bins or drawers as appropriate, and its storage location entered into the site property record. Special storage areas or controls will be provided for items subject to corrosion, humidity, and temperature. Property Custodian should ensure that Electrostatic Discharge (ESD) procedures are used for all items requiring ESD protection. See Section 20.9 for specific ESD instructions. Such items will be inspected semi-annually by the Property Custodian. Serviceable property does not require any special color tag.

20.7.1 Segregation Requirements

Contractor-owned and vendor-loaned property will be segregated from EED Government-owned property during storage. Unserviceable equipment will also be segregated from serviceable equipment and will be tagged. Unserviceable/reparable equipment will have a yellow tag affixed to it; unserviceable/non-reparable equipment will have a red tag affixed. Unserviceable equipment tags will indicate reason item is unserviceable, date it became unserviceable, parent EIN it came from, and signature of person declaring the item unserviceable.

20.7.2 Stock Rotation

EED is a task order contract and Task 201 does not provide for the EED to provide DAAC distribution and other consumables; however, DAAC purchased consumables such as computer tapes, cleaning tapes, CDs, DVD, labels, etc., should be used on a first-in, first-out basis.

20.7.3 Physical Security

EED property will be stored in secured areas where access will be limited to authorized personnel and controlled by the Property Custodian

20.8 Packing and Shipping

Prior to shipping EED equipment to the EDF or other EED sites, the shipping the site will notify Property Custodian by email. The Property Custodian coordinates with the both sites to verify the shipment requirements expected shipment date, carrier, shipping document number, estimated weight and cube, number of pieces, shipper and ship-to-address. Prior to shipment, a pre-shipment inspection will be performed to verify the following:

- Correct identification of equipment on packing lists and shipping documents including configurations, serial numbers, number of containers, and ship-to address.
- Adherence to packing, packaging and marking standards.
- Inclusion of appropriately prepared documents within shipping containers.

EED property being shipped from vendors and the EDF will be shipped to the DAAC facility. . Local policy at some sites may require delivery to a site central receiving point. In such cases, written procedures will be developed between the Property Custodian and the site's central receiving office regarding notification of receipts, documentation required, and provisions for local delivery to the DAAC facility. The delivery of EED equipment to site central receiving points versus direct delivery to the DAAC facility will be determined based on agreements and procedures established between the host facility and the DAAC.

20.9 Electrostatic Discharge (ESD) Program

An Awareness program on Electrostatic Discharge (ESD) and operations and maintenance practices will be followed to eliminate ESD hazards to HW, SW, or people. Procedures for the program will be developed using DOD-HDBK-263 and DOD-STD-1686 as guides. Included in the program will be policies and procedures for prevention and safe dissipation of static electricity: Workplace common grounding requirements; and parts handling and protection when in storage, outside the manufacturer's protective packaging, and being readied for installation or removal and packaging for delivery. ESD hazard awareness and prevention will be an appropriate part of the training and certification process of EED operations and maintenance personnel. All ESD hazard awareness and prevention requirements will be passed through as requirements to all operations or maintenance subcontractors.

21. Installation Planning

21.1 Overview

Installation Planning is an integral part of the EED Task Order Delivery Process. When an EED Task Order is received from NASA the installation planning cycle begins. The Installation Coordinator in conjunction with hardware engineering will review current, hardware diagram. The Installation CCRs provide the detailed planning required by installation teams and the sites to make final preparation for installing Release equipment. Close coordination with the DAAC is required to ensure that the projected plans meet DAAC requirements. While site surveys are not required, one may be performed based on the complexity of the task described by the Task Order.

21.2 Responsibilities

Installation planning and coordination is the responsibility of the Installation Coordinator and changes and updates from the installations will be provided to ILS Property Administrator for the ILM database. The Installation Coordinator uses information obtained from the LMC and site surveys. The IS prepares the Installation CCRs and coordinates actions needed to conduct the installations. DAAC personnel support the Installation Coordinator by working to prepare DAAC specific plan for each Task Order. They also ensure that site preparations/coordination are completed on schedule and work with EDF installation technicians to complete the installation of hardware.

21.3 Process Description

DAAC information, plus design and equipment specifications, is used to provide a preliminary plan for the placement of systems at the DAACs. DAAC engineering staffs review this information and provide requested changes, which are incorporated into the Installation CCRs.

Prior to the installation of hardware, a PSR or an Installation CCR is produced to identify the planned placement of hardware in the facility and how the hardware will be configured and networked, and to identify site preparations necessary to support the installation. Installation teams use the Installation CCR to install the systems and networks. Within three weeks following the installation, the Installation Coordinator will update the hardware diagram to reflect the as-installed configuration at the site. These diagrams are submitted to the EED CCB and, when approved, become part of the operations baseline for the site and are available for viewing on the web. It is the responsibility of the LMC to notify the Installation Coordinator as changes to the baseline documentation occur. Table 21.3-1 shows the Installation Planning Activity Outline.

Table 21.3-1. Installation Planning Activity Outline

Step	Responsible Person	ACTION
1	Installation Coordinator	In conjunction with the DAAC staff prepares an installation CCR.
2	Installation Coordinator	Briefing with DAAC SE and coordinate schedule.
3	Installation Team	Install hardware based on Installation schedule.
4	Installation Team	Burn in and test new hardware.
5	Installation Coordinator	Update information to the CCR and create an As-Built document of the Hardware Diagram.
6	Installation Coordinator	Send the As-Built document to DAAC Liaison while creating a CCR for the CCB.
7	Installation Coordinator	Prepare CCR and board the new hardware diagram.

21.4 Maintenance of Hardware Diagrams

Hardware diagrams reflect the as-installed configuration. The hardware diagrams are maintained by the hardware engineering staff. As changes to these diagrams occur (e.g., relocation of equipment within the site), the LMC will inform the Installation Coordinator or responsible hardware engineer of changes. The Installation Coordinator or responsible hardware engineer will update the appropriate documents and create a CCR to present the changed documents to the EED CCB to update the documents.

22. COTS Training

This chapter outlines the procedures for DAACs to request COTS HW and SW training from the EDF. The EED program training funds allocated to train DAAC and EDF personnel, are limited. Operations Contractors at DAACs are generally ineligible to qualify for EED program's training funds. These funds are explicitly reserved for Raytheon (and Raytheon subcontractors) personnel.

The Activity Checklist in Table 22.1-1 outlines the role of the COTS Training POC (Point-of-Contact) and the section number where details for performing the tasks can be found.

Table 22.1-1. COTS Training - Activity Checklist

Task	Section
Requesting COTS Training	22.1
Coordinating COTS Training	22.2
Canceling/Rescheduling COTS Training	22.3
Contractor COTS Training Funds Accounting	22.4

22.1 Requesting COTS Training

DAAC Leads will submit training requests to the Senior DAAC lead and the COTS Training POC, simultaneously.

The following steps outline the process:

- a. The training request will contain the following information:
 1. Student name(s) and DAAC representation.
 2. Justification for training need.
 3. COTS course (i.e. name, course code, description, type (instructor-led, web-based) requested.
 4. Dates preferred (i.e. 1st choice, 2nd choice..).
 5. Price of COTS course (i.e. unit price per student, per session).
 6. Manager approving purchase of training.
 7. Course location.
 8. Duration of course.
- b. The COTS Training POC verifies the training request meets the following criteria:
 1. Meets the appropriate company/location criteria.
 2. Relates to COTS hardware or software in the EED system design.
 3. Is cost effective and within budget constraints.

- c. COTS Training POC determines the proposed training details, including the following:
 - 1. Training vendor.
 - 2. Individual or group training, based on cost effectiveness.
 - 3. On-site or off-site class location.
 - 4. Available vendor training dates.
- d. The COTS HW/SW Maintenance IPT (Integrated Patch Team) Lead (prior to procurement) receives the training request (forwarded by the COTS Training POC) for approval. The COTS HW/SW Maintenance IPT (Integrated Patch Team) Lead will either approve or deny the training request.
- e. COTS Training POC maintains record of approval of training purchase.

22.2 Coordinating COTS Training

After the COTS HW/SW Maintenance IPT (Integrated Patch Team) Lead approves the request for COTS training, the COTS Training POC will work with the COTS procurement office to schedule and procure the training. The procedures to purchase training are accomplished in the following order:

- a. When approved, the COTS Training POC submits all training details to the COTS Purchasing Manager.
- b. The COTS Training POC orders training from the vendor.
- c. Purchasing Manager processes the purchase order and provides a copy to the COTS Training POC.
- d. The COTS Training POC forwards the purchase order to the vendor to reserve training.
- e. The COTS Training POC generates a notice to students that includes training vendor, course, date(s), and other relevant information.
- f. For on-site training, at the EDF, the COTS Training POC makes necessary arrangements for classroom space and equipment configurations; coordinates use of any operational equipment as required for course affecting on-going operations; forwards site location details to vendor instructor.
- g. Prior to Group COTS training, the COTS Training POC provides students with a COTS Training Evaluation Form to evaluate the effectiveness of the course. In cases when COTS training is found to be substandard or ineffective, the COTS Training POC contacts COTS HW/SW Maintenance IPT (Integrated Patch Team) Lead and DAAC Senior Lead so they come to a consensus as to whether or not to pursue compensation for the training.
- h. Training course(s) rendered to be substandard or ineffective, the COTS Training POC pursues refund, replacement training seat(s), or training credit from the vendor (as defined by the training procurement agreement).

22.3 Canceling/Rescheduling COTS Training

COTS training vendors generally withhold all or part of registration fees for course seat(s) canceled just prior to the start date of training. The deadline for cancellation, without penalty, varies between vendors. Generally, the maximum cancellation deadline is three weeks prior to course start date. In order to preserve EED COTS training funds, any cancellations of COTS training, by EED personnel, must be made prior to any outlined/specified cancellation deadline date(s) to avoid financial penalties.

- If student(s) need to cancel within the specified cancellation deadline, the DAAC Lead will be responsible for substituting an equally qualified individual to attend the course, and for notifying the COTS Training POC to ensure proper record keeping and registration changes with the vendor.

22.4 Contractor COTS Training Funds Accounting

While the coordination and purchasing responsibilities for COTS training fall primarily with the COTS Training POC, the training funds allocation will be approved by the COTS HW/SW Maintenance IPT Lead. Training funds should and will be spent in the most efficient and effective manner for the improvement and success of the EED program.

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