Space Network (SN) Access System (SNAS) MOC Client Software Users' Guide

---

Table of Contents

1. Introduction
    - Purpose
    - Background
    - Applicable Documents
2. SNAS Overview
    - SNAS System Architecture
3. MOC Client Installation and Setup
    - Customer Setup
    - MOC Client Workstation Minimum Requirements
    - MOC Client Workstation Setup
    - Open Server TUT Access
    - MOC Client Invocation and Usage
    - Property File (client.prop)
4. General Operating Guidelines
    - General Operating Guidelines
5. MOC Client Startup and Login
    - Startup
    - Login
    - Connection Problems and Automatic Reconnection
    - Login Problems
6. Main Control Panel
    - Main Control Panel
    - Menu Access
    - SIC Selection Panel
    - File Chooser Panel
    - Utility Buttons
7. User Menu Selections and Panel Descriptions
    - User Menu
    - User/Log-in
        - Login Panel
        - User SIC/Role Panel
    - User/Log-out
    - Save Workspace
    - Load Workspace
    - User/Switch User
        - Field Descriptions

- Button Selections
- User/Change Password
  - Field Descriptions
- User/Client Properties
- User/Exit

8. View Menu Selections and Panel Descriptions
- View Menu
- View/System Clocks
- View/System Status Graphics
- View/System Status Indicators

9. Mission Setup Menu Selections and Panel Descriptions
- Mission Setup Menu
- Mission Setup/Add User Account
  - Field Descriptions
  - Button Selections
- Mission Setup/Modify User Account
  - Field Descriptions
  - Button Selections
- Mission Setup/Mission Spacecraft Characteristics
  - Mission Setup/Mission Spacecraft Characteristics/Spacecraft Characteristics
  - Mission Setup/Mission Spacecraft Characteristics/User Interface Channels
- Mission Setup/EPS Setup
  - EPS FTP Setup Example
- Mission Setup/Service Types
  - Mission Setup/Service Types/Available Service Specification Codes (SSCs)
  - Mission Setup/Service Type/DAS Service Specification Codes (SSCs)
  - Mission Setup/Service Types/NCC Service Specification Codes (SSCs)
- Mission Setup/Scheduling Defaults
  - Mission Setup/Scheduling Defaults/Default Scheduling Parameters
  - Mission Setup/Scheduling Defaults/Define Prototype Events
  - Mission Setup/Scheduling Defaults/RS Edit Super Protoype
  - Mission Setup/Scheduling Defaults/User Defined TDRS Constraints
  - Mission Setup/Scheduling Defaults/Orbital Parameters
  - Mission Setup/Scheduling Defaults/Define TSW Set ID
  - Mission Setup/Scheduling Defaults/Define Orbital Constraints
  - Mission Setup/Scheduling Defaults/Available Prototype Events

10. Orbital View & Vectors Menu Selections and Panel Descriptions
- Orbital View & Vectors Menu
- Orbital View & Vectors/Generate Geocentric
  - Field Descriptions
  - Panel Operation
- Orbital View & Vectors/Generate Geodetic
  - Field Descriptions
  - Panel Operation
- Orbital View & Vectors/Import

- Orbital View & Vectors/Import/Bulk IIRV
- Orbital View & Vectors/Import/TCW
- Orbital View & Vectors/Import/PSAT Only
- Orbital View & Vectors/Import/PSAT/UAV
- Orbital View & Vectors/Import/TSW
- Orbital View & Vectors/Transmit TSW(s)
  - Field Descriptions
  - Button Selections
- 11. Scheduling Menu Selections and Panel Descriptions
  - Scheduling Menu
  - Scheduling/TDRS Unscheduled Time (TUT)
    - Retrieve TDRS Unscheduled Time (TUT) Panel
    - TUT Summary Panel
    - Auto TUT Save on Client Workstation
  - Scheduling/TSW Summary
  - Scheduling/Scheduling Tools
    - Scheduling/Scheduling Tools/Graphical Timeline
    - Scheduling/Scheduling Tools/Schedule Request Summary
    - Scheduling/Scheduling Tools/Active Events Summary
    - Scheduling/Scheduling Tools/TSW Time Shift
    - Scheduling/Scheduling Tools/Bulk Modify
    - Scheduling/Scheduling Tools/Multiple Schedule Delete Requests
    - Scheduling/Scheduling Tools/Multiple Stored Only Schedule Requests
  - Scheduling/DAS Requests
    - Scheduling/DAS Requests/TDRS Visibility Request
    - Scheduling/DAS Requests/Resource Allocation Request (RAR)
    - Scheduling/DAS Requests/Resource Allocation Delete Request (RADR)
    - Scheduling/DAS Requests/Resource Allocation Modification Request (RAMR)
    - Scheduling/DAS Requests/Playback Search (PBKS)
    - Scheduling/DAS Requests/Playback Delete Request (PBKDR)
    - Scheduling/DAS Requests/Playback Modification Request (PBKMR)
  - Scheduling/NCC Requests
    - Scheduling/NCC Requests/Schedule Add Request (SAR)
    - Scheduling/NCC Requests/Schedule Delete Request (SDR)
    - Scheduling/NCC Requests/Wait List Request (WLR)
    - Scheduling/NCC Requests/Alternate Schedule Add Request (ASAR)
    - Scheduling/NCC Requests/Replace Request (RR)
    - Scheduling/NCC Requests/Recurrent Scheduling
  - Scheduling/Import Messages
    - Select a File to Import
    - Bulk Request Summary
    - Correct Errors in an Invalid Request
    - Submit Bulk Schedule Requests
  - Scheduling/Re-create USMs
- 12. Control & Monitor Menu Selections and Panel Descriptions

Control & Monitor Menu
Control & Monitor/ Alert Stream
Alert Stream Panel
Panel options
Control & Monitor/ UPD Parameter Warning/Critical Range Summary
Control & Monitor/ User Performance Data Summary
UPD Summary Panel
UPD Details Panel
Generate Formatted UPD Logs
Submit GCMR Panel
13. Reports & Queries Menu Selections and Panel Descriptions
Reports & Queries Menu
Reports
Query Active Schedule Upload
14. Help Menu Selections and Panel Descriptions
Help Menu
SNAS User's Guide
About SNAS MOC Client
About User
Security Warning
About SNAS Version
Contact Information
TDRS Payload Status

List of Figures

2.1. High Level SNAS Architecture
2.2. SNAS End-to-End Data Flow
4.1. Sample Window
5.1. NASA IT Security Warning Panel
5.2. Login Panel
5.3. Establishing Connection Status Box
5.4. Login Sent Status Box
5.5. Login Accepted Status Box
5.6. Sample Login Failure Message
5.7. SIC/Role Selection Dialog
5.8. Auto-Reconnect Status Box
6.1. Main Control Panel
6.2. Main Control Panel Menu Options
6.3. Role Permissions by Menu Items
6.4. SIC Selection Panel
6.5. File Chooser Panel
7.1. User Menu
7.2. User Login Panel
7.3. User SIC/Role Panel

7.4. Save Workspace File Chooser
7.5. Load Workspace File Chooser
7.6. Switch User Panel
7.7. Switch User Confirmation
7.8. Change Password Dialog
7.9. Client Properties
7.10. Client Property File Save
8.1. View Menu
8.2. Clocks Panel
8.3. Status Indicators Graphic Panel
8.4. Status Indicators Panel
9.1. Mission Setup Menu
9.2. Add User Account Panel
9.3. Modify User Account Panel
9.4. Mission Setup/Mission Spacecraft Characteristics Menu
9.5. Spacecraft Characteristics Panel
9.6. User Interface Channels Panel
9.7. Add User Interface Channel Panel
9.8. EPS Setup Panel
9.9. Add EPS Node Panel
9.10. EPS Setup Panel (for Updating Node Details)
9.11. EPS Node Details Panel
9.12. Mission Setup/Service Types Menu
9.13. Available Service Specification Codes Panel
9.14. Edit SSCs Panel
9.15. DAS SSC Panel General Tab
9.16. DAS SSC Panel Q-Channel Parameters Tab
9.17. DAS SSC Panel Data Format Parameters Tab
9.18. DAS SSC Panel I-Channel Data Format Parameters Tab
9.19. DAS SSC Panel Q-Channel Data Format Parameters Tab
9.20. NCC SSCs Panel
9.21. Add/Edit MAF Panel Fixed Parameters Tab
9.22. Add/Edit MAF Respecifiable Parameters Tab
9.23. Add/Edit MAR Panel Fixed Parameters Tab
9.24. Add/Edit MAR Panel Respecifiable Parameters Tab
9.25. Add/Edit KaSAF Panel Fixed Parameters Tab
9.26. Add/Edit KaSAF Panel Respecifiable Parameters Tab
9.27. Add/Edit KaSAR Panel Fixed Parameters Tab
9.28. Add/Edit KaSAR Panel Respecifiable Parameters Tab
9.29. Add/Edit KaSARWB Panel Fixed Parameters Tab
9.30. Add/Edit KaSARWB Panel Respecifiable Parameters Tab
9.31. Add/Edit KSAF Panel Fixed Parameters Tab
9.32. Add/Edit KSAF Panel Respecifiable Parameters Tab
9.33. Add/Edit KSAF-Shuttle Panel Fixed Parameters Tab
9.34. Add/Edit KSAF-Shuttle Panel Respecifiable Parameters Tab

9.35. Add/Edit KSAR Fixed Parameters Tab
9.36. Add/Edit KSAR Panel Respecifiable Parameters Tab
9.37. Add/Edit KSAR IF Fixed Parameters Tab
9.38. Add/Edit KSAR IF Respecifiable Parameters Tab
9.39. Add/Edit KSAR-Shuttle Panel Fixed Parameters Tab
9.40. Add/Edit KSAR-Shuttle Panel Respecifiable Parameters Tab
9.41. Add/Edit SSAF Panel Fixed Parameters Tab
9.42. Add/Edit SSAF Panel Respecifiable Parameters Tab
9.43. Add/Edit SSAF-Shuttle Panel Fixed Parameters Tab
9.44. Add/Edit SSAF-Shuttle Panel Respecifiable Parameters Tab
9.45. Add/Edit SSAR Panel Fixed Parameters Tab
9.46. Add/Edit SSAR Panel Respecifiable Parameters Tab
9.47. Add/Edit SSAR IF Panel Fixed Parameters Tab
9.48. Add/Edit SSAR IF Panel Respecifiable Parameters Tab
9.49. Add/Edit SSAR-Shuttle Panel Fixed Parameters Tab
9.50. Add/Edit SSAR-Shuttle Panel Respecifiable Parameters Tab
9.51. Add/Edit SMAF Panel Fixed Parameters Tab
9.52. Add/Edit SMAF Panel Respecifiable Parameters Tab
9.53. Add/Edit SMAR Panel Fixed Parameters Tab
9.54. Add/Edit SMAR Panel Respecifiable Parameters Tab
9.55. Add/Edit SMAR Panel More Respecifiable Parameters Tab
9.56. Add/Edit EETF/EETR Panel
9.57. Add/Edit TRKC Panel Fixed Parameters Tab
9.58. Add/Edit TRKC Respecifiable Parameters Tab
9.59. Add/Edit TRKN Panel Fixed Parameters Tab
9.60. Add/Edit TRKN Panel Respecifiable Parameters Tab
9.61. Mission Setup/Scheduling Defaults Menu
9.62. Default Scheduling Parameters Panel
9.63. Select Prototypes Events Panel
9.64. Modify Prototype Events Panel
9.65. RS Super Prototype Selection Panel
9.66. RS Edit Super Prototype Panel
9.67. RS Super Prototype Text View Panel
9.68. RS Prototype Details Panel
9.69. RS Service Details Panel
9.70. Pulldown List of Services
9.71. List of RS Prototype Service Expression Tokens:
9.72. User-defined TDRS Constraints
9.73. Add User-defined TDRS Constraints
9.74. Orbital Parameters Panel
9.75. Define TSW Set IDs Panel
9.76. Add/Modify TSW Set IDs Panel
9.77. Define Orbital Constraints Panel
9.78. Add Orbital Constraints Panel
9.79. Available Prototype Events Panel

10.1. Orbital View & Vectors Menu
10.2. Generate Geocentric Panel
10.3. Generate Geodetic Panel
10.4. Otbital View & Vectors/Import Menu
10.5. Import Bulk IIRV Panel
10.6. Transmit TSWs Panel
11.1. Scheduling Menu
11.2. TUT Selection Panel
11.3. TUT Summary Panel
11.4. TSW Selection Panel
11.5. TSW Summary Panel
11.6. Scheduling/Scheduling Tools Menu
11.7. TSW Summary Panel
11.8. Timeline Data Panel
11.9. Graphical Timeline Panel
11.10. Timeline TDRS Menu
11.11. Overlapping Events
11.12. View Details Menu
11.13. Graphical TUT
11.14. Graphical User Constraints
11.15. TSW Menu
11.16. Scheduling SAR from Timeline
11.17. Timeline SAR Panel
11.18. Timeline Stored SAR Menu
11.19. Database Stored SAR Menu
11.20. SAR Timeline Scheduling Menu
11.21. RAR Timeline Scheduling Menu
11.22. Schedule Request Summary Filtering Panel
11.23. Schedule Request Summary Panel
11.24. Viewing an SDR Panel
11.25. Confirm Delete Request
11.26. Schedule Request Summary Print Example
11.27. Active Events Summary Filtering Panel
11.28. Active Events Summary Panel
11.29. Service Display Panel
11.30. View Service Periods Panel
11.31. Time Shift Panel
11.32. Bulk Modify Panel
11.33. Bulk Modify Panel Time Slip Tab
11.34. Multiple Schedule Delete Requests Panel
11.35. Multiple Stored Only Schedule Requests Panel
11.36. Scheduling/DAS Requests Menu
11.37. DAS TDRS Visibilty Request Panel
11.38. DAS TDRS Visibilty Results Panel
11.39. DAS Resource Allocation Request (RAR) Panel

11.40. DAS RADR Selection Panel
11.41. DAS RAMR Selection Panel
11.42. Create DAS RAMR Panel
11.43. DAS PBKS Panel
11.44. DAS Playback Availabilities Panel
11.45. DAS PBKDR Selection Panel
11.46. DAS PBKMR Selection Panel
11.47. DAS PBKMR Panel
11.48. Scheduling/NCC Requests Menu
11.49. Schedule Add Request Panel
11.50. Absolute Service Time Format
11.51. Schedule Delete Request (SDR) Selection Panel
11.52. Wait List Request (WLR) Selection Panel
11.53. Wait List Request Panel
11.54. Alternate Schedule Add Request (ASAR) Selection Panel
11.55. Replace Request (RR) Selection Panel
11.56. Main Recurrent Scheduling Panel
11.57. Specify TDRS Use Panel
11.58. Specify Sub Interval Panel - Mission Orbit
11.59. Specify Sub Interval Panel - TDRS View
11.60. Specify Sub Interval Panel - Time Interval
11.61. Specify Sub Interval Panel - Orbital Event
11.62. Use RS Prototype Event Panel
11.63. Set Sub Pattern Parameters Panel
11.64. Scheduling/Import Messages Menu
11.65. Import Messages File Chooser Panel
11.66. Bulk Request Summary Panel
11.67. BSR Invalid SDR Details Panel
11.68. BSR Invalid SAR Details Panel
11.69. BSR Service Detail Panel
11.70. Bulk Schedule Request Submission Progress Panel
11.71. Re-create USMs Panel
12.1. Control/Monitor Menu
12.2. Alert Stream Panel
12.3. Alert Details
12.4. UPD Parameter Warning/Critical Range Summary Panel
12.5. UPD Parameter Warning/Critical Range Definition Panel
12.6. UPD Summary Panel
12.7. UPD Details Panel for DASMAR Service
12.8. UPD Details Panel for MAF Service
12.9. GCMR Panel
12.10. GCMR Service Reconfiguration Panel
13.1. Reports & Queries Menu
13.2. Confirmed Events Listing Selection Panel
13.3. Confirmed Events Listing

13.4. Confirmed Events Report
13.5. Confirmed Events Details
13.6. Rejected/Declined Events Report
13.7. Query Active Event Upload Panel
14.1. Help Menu
14.2. SNAS Users' Guide
14.3. About MOC Client Panel
14.4. User Panel
14.5. Security Warning
14.6. SNAS Client Version Panel
14.7. Contact Information Panel

List of Tables

5.1. Login Error Messages
6.1. Utility Buttons
7.1. Login Panel Field Descritions
7.2. User SIC/Role Panel Field Descriptions
7.3. Switch User Panel Field Descriptions
7.4. MOC Change Password Panel Field Descriptions
8.1. SNIF-NCCDS Port Connection States
9.1. Add User Account Panel Field Descriptions
9.2. Modify User Account Panel Field Descriptions
9.3. Spacecraft Characteristics Panel Field Descriptions
9.4. User Interface Channels Panel Field Descriptions
9.5. EPS Node Setup Panel Field Descriptions
9.6. Available Service Specification Codes Panel Field Descriptions
9.7. NCCDS SSC Parameter Panels
9.8. Default Scheduling Parameters Field Descriptions
9.9. Add Prototype Events Panel Field Descriptions
9.10. RS Edit Super Prototype Panel Field Descriptions
9.11. Orbital Parameters Panel Field Descriptions
9.12. Define Orbital Constraints Panel Field Descriptions
10.1. Generate Geocentric Panel Field Descriptions
10.2. Generate Geodetic Panel Field Descriptions
10.3. Transmit TSWs Panel Field Descriptions
11.1. TUT Selection Panel Field Descriptions
11.2. Retrieve TUT Data Return Panel Field Descriptions
11.3. Timeline Data Panel Field Descriptions
11.4. Timeline Graphical Events Legend
11.5. Schedule Request Summary Panel Field Descriptions
11.6. Message Class Values
11.7. Active Events Summary Panel Field Descriptions
11.8. USM Type Values
11.9. Time Shift Panel Field Descriptions

11.10. Bulk Modify Panel Field Descriptions
11.11. DAS TDRS Visibility Request Panel Field Descriptions
11.12. DAS TDRS Visibility Results Panel Field Descriptions
11.13. DAS RAR Panel Field Descriptions
11.14. DAS RADR Selection Panel Field Descriptions
11.15. DAS RAMR Selection Panel Field Descriptions
11.16. Create DAS RAMR Panel Field Descriptions
11.17. DAS Playback Availabilities Panel Field Descriptions
11.18. DAS PBKDR Panel Field Descriptions
11.19. DAS PBKMR Panel Field Descriptions
11.20. DAS PBKMR Panel Field Descriptions
11.21. Schedule Add Request Panel Field Descriptions
11.22. Main Recurrent Schedule Panel Field Descriptions
11.23. Speficy TDRS Use Panel Field Descriptions
11.24. RS Specify Sub-Interval Subpanels
11.25. RS Specify Sub Interval Panels Field and Button Descriptions
11.26. Use Prototype Event Panel Field and Button Descriptions
11.27. Set Sub Pattern Parameters Panel Field and Button Descriptions
11.28. Bulk Scheduling Line Format for DAS RAR
11.29. Bulk Scheduling Line Format for DAS RADR
11.30. Bulk Scheduling Line Format for DAS RAMR
11.31. Bulk Scheduling Line Format for DAS PBKR
11.32. Bulk Scheduling Line Format for DAS PBKDR
11.33. Bulk Scheduling Line Format for DAS PBKMR
12.1. UPD Summary Selection Panel Field Descriptions
12.2. Service UPD Status
12.3. UPD Details Item Coding
12.4. GCMR Panel Field Descriptions

Chapter 1. Introduction

Table of Contents

Purpose
Background
Applicable Documents

Purpose

This Space Network (SN) Access System (SNAS) MOC Client Software User's Guide provides instructions for operating the SNAS MOC Client software in support of SN customer mission operations.

Background

The primary function of SNAS is to provide a secure network-based Graphical User Interface (GUI) to the Network Control Center (NCC) Data System (NCCDS) and to the Demand Access System (DAS) to perform SN customer scheduling, real-time service monitoring and control, and state vector storage. The SNAS provides the following capabilities:

- Access from the Internet and NASA Integrated Services Network (NISN) Open & Closed Internet Protocol (IP) Operational Network (IONet).
- A standards-based customer interface for performing Tracking and Data Relay Satellite (TDRS) scheduling, real-time service monitoring and control.
- Robust two-way interface with existing MOC components. Refer to the SNAS External Processing System (EPS) ICD for details. *.Example: Import features for bulk scheduling products and orbital products. Export features for NCCDS/ DAS messages, mission data queries, and reports.*
- Secure access to SNAS system resources through encryption, certification, and authentication.
- Cross-platform compatible MOC Client application with a Java programming language based user interface.
- Full support NCCDS customers, including flexible scheduling.
- Transmit customer state vectors to SN.
- Orbiting or stationary state vector generation based on user input of geocentric (position & velocity) or geodetic (latitude, longitude, & altitude) coordinates.
- Internet and Open IONet access to TDRSS Unscheduled Time (TUT).
- Operational (OPS) mode for normal oprations and a separate test mode for performing Engineering Interface (EIF) testing and user training.
- Minimal user requirements. Windows, Unix, Linux, or Macintosh workstation with the following software: Java Virtual Machine (freeware), standard web browser, SNAS MOC Client application, and optionally either a FTP or sFTP package.

Applicable Documents

- *Space Network (SN) Users' Guide*, 450-SNUG.
- *SNAS System Requirements Document*, 452-SRD-SNAS.
- *Network Control Center Data System (NCCDS) Specification for World Wide Web Server for TDRSS Unscheduled Time and Nascom Information*, Draft, October 1996.
- *Interface Control Document between the Space Network and Customers for Service Management Centers*, 452-ICD-SN/CSM.

- *Interface Control Document between the Space Network and Customers for Service Data*, 452-ICD-SN/CSD.
- *Interface Control Document Between the Demand Access System and the Space Network Web Services Interface*, 452-ICD-DAS/SNAS.
- *Interface Control Document (ICD) between Space Network Access System (SNAS) and External Processing System (EPS)*,452-ICD-SNAS/EPS.
- *Interface Control Document (ICD) between the Network Control Center (NCC)/Flight Dynamics Facility (FDF) and the White Sands Complex (WSC)*, 530-ICD-NCC-FDF/WSC.
- *FDD Generic Data Product Formats Interface Control Document (ICD)*,553-FDD-91/028.
- *Space Network (SN) Access System (SNAS) Security Plan*,452-SP-SNAS.

Chapter 2. SNAS Overview

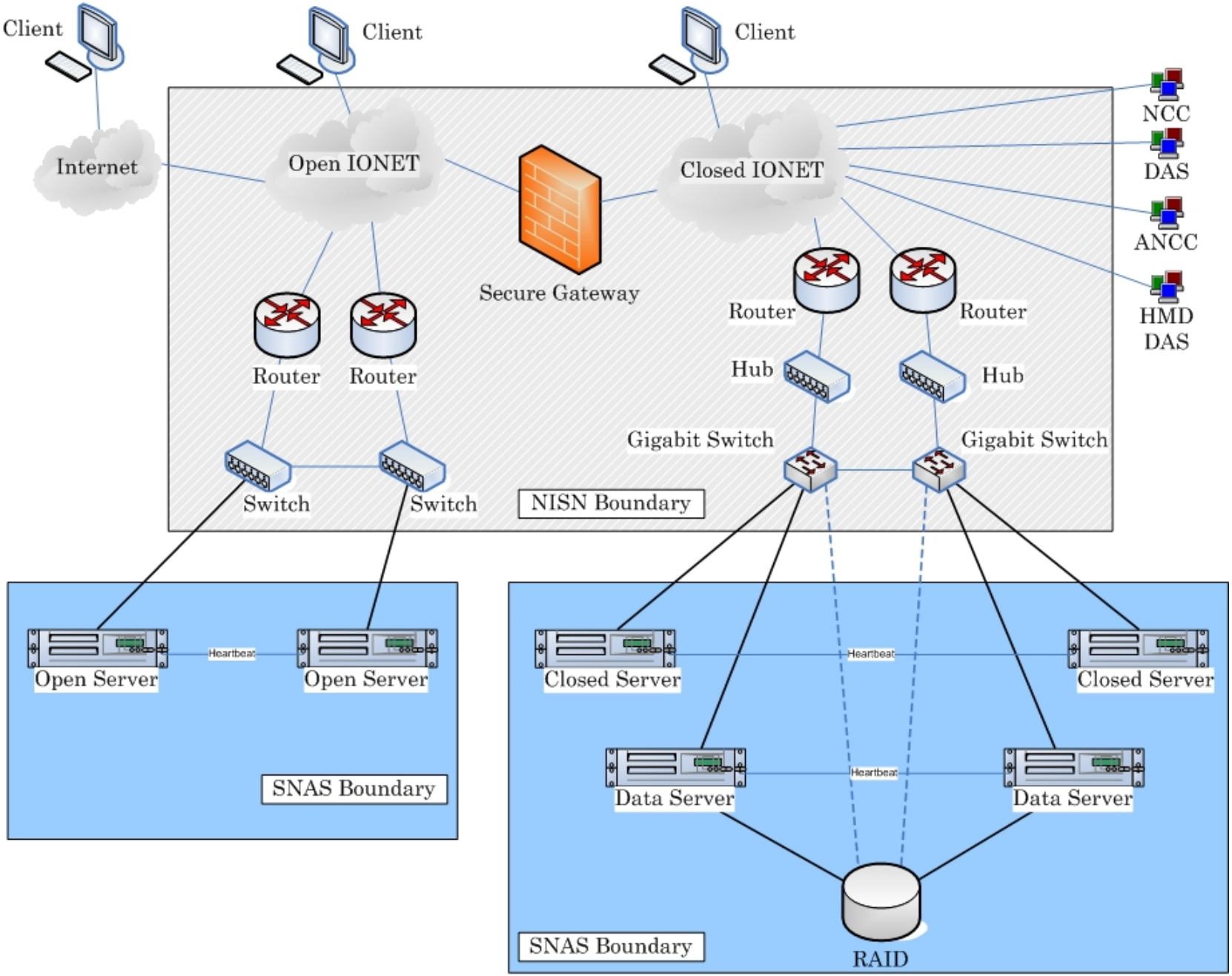
Table of Contents

SNAS System Architecture

SNAS System Architecture

A detailed knowledge of all the SNAS hardware and software components is not absolutely required to operate the SNAS MOC Client software. However, a high-level view can be helpful toward understanding how to configure a MOC Client workstation to operate with the SNAS servers and to diagnose problems when errors should occur. All SNAS operational equipment is located at WSC.

Figure 2.1. High Level SNAS Architecture



SNAS-architecture-2008-1020

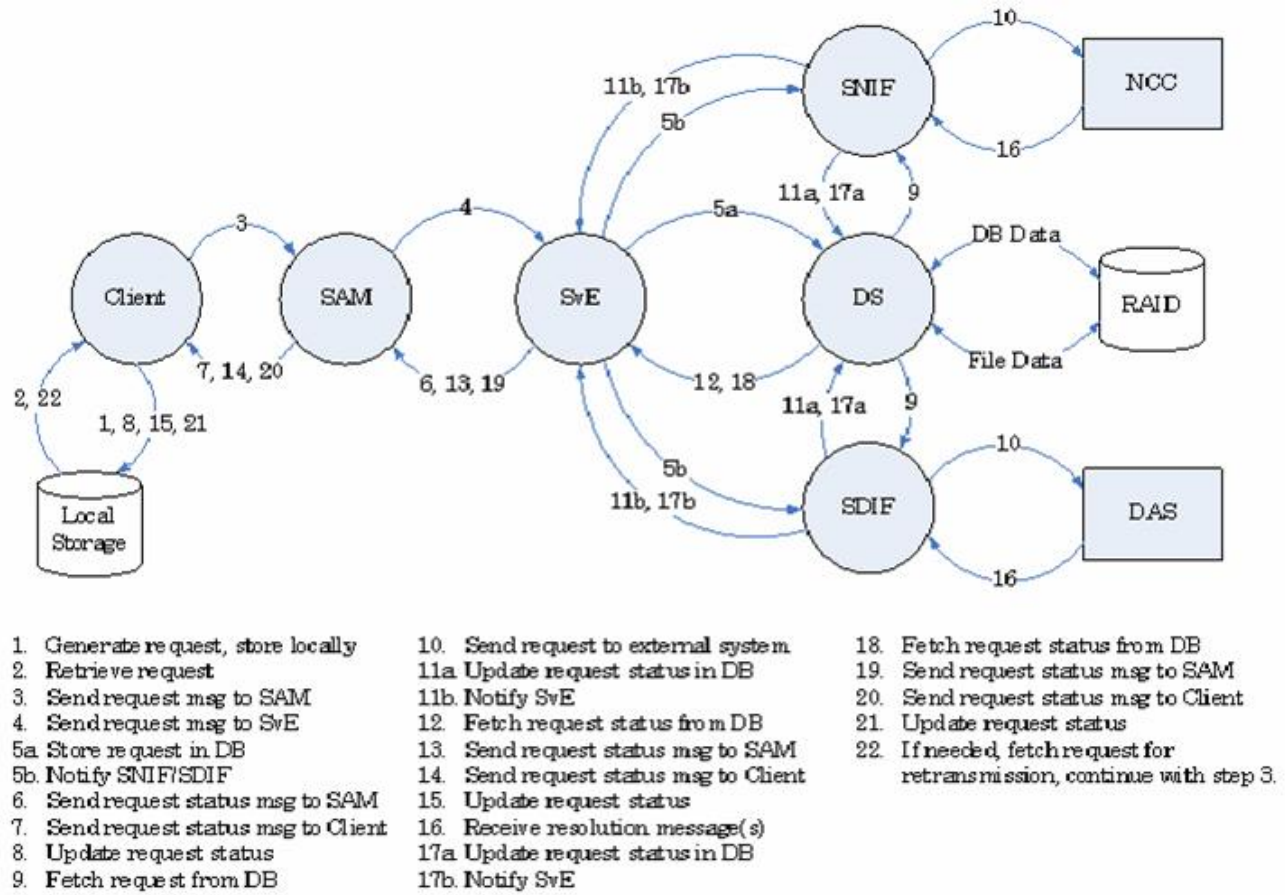
- Description of the main SNAS hardware components:
  - **Client Workstation**. User's desktop/laptop workstation, which can be any desktop/laptop that supports Sun Microsystems' Java Virtual Machine (JVM) Version 6.
  - **Open Servers**. Proxy servers which allow Open IONet, Restricted IONet, and Internet-based users to connect to SNAS.

User requests are directed from the Open Servers to the Closed Servers through the NISN Secure Gateway, using a single predefined set of rules. This allows for the addition of new customers and users without the need for adding new Secure Gateway rules. Open Servers also host a Web based TUT server that mirrors the TUT web service provided by NCCDS on the Closed IONet. The TUT data is updated hourly.
  - **Closed Servers**. Hosts the majority of the SNAS server applications. The Closed Servers also manage user login sessions, communications with NCCDS and DAS, plus routine interactions with the SNAS database.
  - **Data Server**. Hosts the SNAS applications and Oracle RDBMS for SNAS database interactions.

- Description of the main SNAS software components:
  - **MOC Client application**. Executes on a MOC Client Workstation, and provides a graphical user interface for interacting with the MOC Client application and interacting with MOC components referred to as External Processing Systems (EPS).
  - **O&M Client application**. Executes on an O&M Client Workstation, and provides a graphical user interface for interacting with the O&M Client, interfacing with MOC Clients, and the SNAS database.
  - **Service Access Manager (SAM)**. A server process that the MOC Client connects to in order to access SNAS services; keeps track of user requests and provides responses back to the Client. The Application Server runs on both the Open Server and the Closed Server.
  - **Service Enabler (SvE)**. A server process that provides the interface for the MOC Client to the SNAS Database. Responsible for processing user requests and generating responses; communicates with the MOC Client via the Service Access Manager. Communicates with NCCDS via SNAS-NCCDS Interface and with DAS via SNAS-DAS Interface processes.
  - **SNAS-NCCDS Interface (SNIF)**. A server process that communicates with the NCCDS using the messaging protocol defined in the Interface Control Document between the Space Network and Customers for Service Management Centers, 452-ICD-SN/CSM. A separate SNIF is required to communicate with each NCCDS (operations and test).
  - **SNAS-DAS Interface (SDIF)**. A server process that communicates with the DAS. A separate SDIF is required to communicate with each DAS (operations and test).
  - **Data Server Data Manager (DSDM)**. A server process that handles large volume database interactions in operations such as orbit data processing and recurrent scheduling.
  - **Database**. Provides the data storage capability to hold all customer mission configuration, scheduling data, mission users, and 24 hours of operational playback data. Allows access to customer schedules from any MOC Client Workstation from any IP network for authorized users.

The following diagram depicts the end-to-end data flows of the entire SNAS system:

Figure 2.2. SNAS End-to-End Data Flow



Chapter 3. MOC Client Installation and Setup

Table of Contents

Customer Setup
MOC Client Workstation Minimum Requirements
MOC Client Workstation Setup
Open Server TUT Access
MOC Client Invocation and Usage
Property File (client.prop)

Customer Setup

- The first step in becoming a SNAS user is to arrange to obtain SN services through the Customer Commitment Process. This process is described in the Space Network Users' Guide (SNUG).

- Once an Service Level Agreement has been reached, the mission planning phase is used to establish a SN configuration for the mission. The prospective customer project supplies the SN with information needed to fulfill mission support requirements. Customer information is maintained in the NCCDS database. Specific information in the database that is also required to configure a SNAS customer is the following:
    - Spacecraft Identification Code (SIC)
    - Vehicle Identification Code (VIC)
    - Support Identifiers (SUPIDENs)
    - Service Specification Codes (SSCs) and initial service parameter values
    - Prototype Events (PEs)
    - Spacecraft characteristics information
    - External Processing System (EPS) node information

- In addition, the following SNAS-specific information needs to be provided for inclusion in the SNAS database and server configuration:
    - **Schedule request purge time**. Specifies (in days) how long after requested event start time to keep Schedule Requests, before they are purged from the SNAS database. This affects how many requests are displayed in the Schedule Request Summary Panel.
    - **Active event upload.**Determines whether or not the customer would like to receive a file containing active events information on connected workstation. The text file contains information about all granted requests scheduled to occur in the future (with respect to transmission time of the file). The customer must also provide the following information concerning the upload process and file content:
        - Indicator to send a new file when the Active Schedule changes. Also how often to check for changes, in minutes (default 5 minute).
        - Indicator to periodically send a new file regardless of whether there are changes. Also the file update frequency, in minutes (default 60 minutes).
        - Indicator to include initial service parameter values.
        - Indicator to send the numeric value or an enumerated text string, for enumerated parameter types.
    - **User accounts**. Each SNAS user must have a separate account (group accounts are not allowed). The customer should provide a list of users requiring access, to include full user name, company, mission name, geographic location, phone number, and email address. Also a specified role for each user, e.g indicate whether they are allowed Mission Manager privileges, which allows the user to edit the initial SSC parameter values.
    - **IP addresses**. A list of IP addresses for all MOC Client workstations requiring connection to the SNAS Server(s). The customer may request access for any combination of workstations located on the Closed IONet, Open IONet, or Internet. Though not always the case, IP addresses for all workstations connecting to the SNAS Servers are treated by the SN Data Base Administrator (DBA) as For Official Use Only (FOUO). Transmission of IP addresses to the DBA should be done by the following accepted means for FOUO information: voice, fax, or PGP electronic mail.

Note

SNAS maintains separate databases for OPS and EIF modes, allowing separate settings (SSCs, user accounts, etc.) for each mode.

MOC Client Workstation Minimum Requirements

- The SNAS MOC Client application requires the following minimum hardware and software to run:
    - Java Runtime Environment (JRE) 6.0, available from Sun Microsystems
    - Any platform supporting JRE 6.0.
    - System clock synchronized to network time or some other accurate time source. The clock must either be configured

for Universal Time, or if set to Local Time, then set with the proper time zone.
- 1 Gbytes Random Access Memory (RAM).
- 60 Gbytes hard disk space.
- 1024x768, 16 bit color display.
- Connection to Internet, or NASA's Open IONet or Closed IONet.
- Standard Web browser (e.g., Netscape, Internet Explorer) to view TUT, and to download SNAS MOC Client software and digital certificates.

The SNAS MOC Client has bee successfully tested with a MAC running Snow Leopard with 64-bit precision and the latest Apple JAVA.

MOC Client Workstation Setup

- Software and installation instructions are available from the Internet, the Open IONet and the Closed IONet. Information on downloads is available from the SNAS system administrators. The download sites also contain the appropriate JRE version for Windows, Solaris/Sparc, and Linux workstations. The following general steps are required in order to set up a MOC Client workstation:
  - Read, sign, and return the Rules of Behavior to the SN DBA. This document may be downloaded from the main SNAS information web page. Provide on this form your IP address, so that you can access one of the download sites.
  - Generate a certificate through one of the SNAS web sites. Each user should generate their own certificate with their own private passphrase. Certificates and passphrases should not be shared.
  - Download the appropriate JRE version, either from the Sun web site or from the SNAS web site, and install it on your workstation. On the SNAS web site, it is available through the*MOC Client Software*link.
  - Download the latest version of the MOC Client software from one of the SNAS web sites. Separate versions are provided for Windows and Unix installations.
  - Install the MOC Client software on your workstation using the detailed instructions provided on the web site. For multiple users on a single workstation, it is recommended that each user have the software installed in a separate folder/directory. This may duplicate some information on your hard disk, but the extra space used is minimal and greatly simplifies the installation.

- It should be understood that as new versions of the MOC Client software are released to provide enhancements or fix bugs, the workstation requirements might change. This is especially true of the JRE version. The latest version of the SNAS MOC Client software, requirements, and instructions is always available via links from the main SNAS web page at the sites listed above. At this time, Apple JAVA updates are only available via the Apple WEB site. Instructions for accessing any updates, should that be necessary, will be provided as part of the delivery notification.

Open Server TUT Access

- TUT may be accessed from the Internet and Open IONet at the following address:

  http://snas-www.nascom.nasa.gov/tut/

- The raw TUT data files, formatted as described in Table 7-23, TDRSS Unscheduled Time File Format in the 452-ICD-SN/CSM, may be downloaded from the following addresses:

  http://snas-www.nascom.nasa.gov/tut/eif/data/newtut.dat

http://snas-www.nascom.nasa.gov/tut/ops/data/newtut.dat

A sample TUT file is shown below:

```
TDRS Unscheduled Time Report As of 2008/152/12:00:01 TUT Stop Time
2008/172/03:00:00 1 049 SA 02    2008/152/12:00:00 2008/172/03:00:00 100 000 1
171 MAF 01   2008/152/12:00:00 2008/170/22:55:30 100 000 1 171 MAF
01   2008/170/23:02:30 2008/172/03:00:00 100 000 1 171 MAR 01
2008/152/12:00:00 2008/170/22:55:30 100 000 1 171 MAR 01
2008/170/23:02:30 2008/172/03:00:00 100 000 1 171 MAR 02
2008/152/12:00:00 2008/172/03:00:00 100 000 1 171 MAR 03
2008/152/12:00:00 2008/172/03:00:00 100 000 1 171 MAR 04
2008/152/12:00:00 2008/172/03:00:00 100 000 1 171 MAR 05
2008/152/12:00:00 2008/172/03:00:00 100 000 1 171 SA 01
2008/152/12:00:00 2008/155/16:22:24 100 000 1 171 SA 01
2008/155/16:40:24 2008/155/18:04:50 100 000 1 171 SA 02
2008/152/12:00:00 2008/172/03:00:00 100 000 1 275 MAF 01
2008/152/12:00:00 2008/172/03:00:00 100 000 1 275 MAR 01
2008/152/12:00:00 2008/172/03:00:00 100 000 1 275 MAR 02
2008/152/12:00:00 2008/172/03:00:00 100 000 1 275 SA 01
2008/152/12:00:00 2008/152/12:50:29 100 000 1 275 SA 01
2008/152/13:08:29 2008/152/13:45:32 100 000
```

- Operation of the Open TUT web page is the same as when accessed directly through the NCCDS and Auxiliary Network Control Center (ANCC) TUTs on the Closed IONet, with the exception that the main SNAS Open TUT page allows selection of either Operations or EIF TUT. For instructions on how to use the TUT web page, refer to the appropriate NCCDS TUT documentation.

MOC Client Invocation and Usage

- A Unix shell script and Windows batch file are provided with the MOC Client installation, so the user can easily start the application. The file names are runmocclient.bat (for Windows) and runmocclient.bash (for Unix) and samples of the files are shown below. Following the MainControlPanel for each java command is a "." for defining the folder to access the configured files and a second folder definition for accessing a localized version of the client.prop file which may be used to override the configured version of client.prop. The command (in a single line) should be executed while in the same folder/directory as where the provided jar files are located:

  Windows:

```
java -Xms256m -Xmx512m -cp SNAS-COTS-client.jar;SNASmocclient.jar;
resources.jar        gov.nasa.gsfc.snas.mocclient.gui.
MainControlPanel . <optional_localized_client.prop_folder>
```

  Unix:

```
java -Xms256m -Xmx512m -classpath ".:./SNAS-COTS-client.jar:./SNASmocclient.
jar:./resources.jar"        gov.nasa.gsfc.snas.mocclient.gui.
```

```
MainControlPanel . <optional_localized_client.prop_folder>
```

- A MOC Client startup splash screen appears with the current version number displayed at the bottom.

Property File (client.prop)

- The MOC Client Property File, client.prop, is a configuration or preference file that is used to tailor the execution of the SNAS MOC Client application. The sample property file provided with the SNAS MOC Client download is set with default values to start, with the exception of the names of the digital certificate files as described in the installation instructions.

- In general, the property file may be changed with any text editor. Properties may be provided in any order. A ":" character separates the property name from its assigned value. A "#" character at the beginning of a line is used to enter a comment. Boolean properties, which should be evident from examining the file, can have a value of true or false.

- The followng is a sample client.prop file for the MOC Client.

```
## $Id: mocclient.prop.beta,v 1.33 2010/07/06 15:47:02 scott Exp $
##  SNAS Client Property File
##
##   This file contains the properties used for establishing an encrypted
##   connection to the SNAS server. It also contains the properties having
##   to do with the processing of input and output files, as well as some
##   miscellaneous properties
##
##
##  NOTE: The property file may be changed with any text editor.  Properties
##        may be provided in any order.  A ":" character separates the
##        property name from its assigned value.  A "!" or a "#" character at
##        the beginning of a line is used to enter a comment.  Boolean
##        properties can have a value of true or false.
##

## Log4J Congfiguration
Log4JConfig : ./client.logging.xml

#####################################
## Login and Connection Properties ##
#####################################

# ServerIPAddress - domain name or IP address of the server used in the
#     Login Panel.  This is normally set to SNAS-server.nascom.nasa.gov for
#     connection from the Internet or Open IONet, or to
#     SNAS-server.ops.nascom.nasa.gov for connection from the Closed IONet.
# Note:  SNAS has two servers, one for the OPS and one for EIF.  Their preferred
#        host names and ports might be different, by specifing host names for
each mode, the
#        application will attempt to find the appropriate host name and port when a
#        given mode is selected.
```

```
# for OPS
ServerIPAddressOPS : snastest-ops.nascom.nasa.gov
ServerPortNumberOPS : 9312

# for EIF
ServerIPAddressEIF : snastest-eif.nascom.nasa.gov
ServerPortNumberEIF : 9310

# ConnMode - defines whether to open the Login Panel with EIF
#     mode selected.  Valid modes are EIF, OPS, Local ( for MOC client only )

ConnMode : EIF

# SelectSICsAtLogin - for multimission users, defines whether a dialog
#     will appear prior to completion of login to allow selection of which
#     SICs will be used for that session.  This is normally set to false
#     since most users are authorized for only a single SIC.  Setting to
#     false also indicates to use all authorized SICs for each session.

selectSICsAtLogin : true

# UseSSL - defines whether the socket connection to the server will be
#     encrypted.  Since the operational servers do not allow unencrypted
#     connections, this should always be set to true.

UseSSL : true

# CipherSuite - defines the algorithm used to establish the SSL
#     connection to the server.  This is normally set to match the setting
#     on the server and should not be changed unless under the direction of
#     the SNAS DBA or System Administrator.

CipherSuite : SSL_RSA_EXPORT_WITH_RC4_40_MD5

# CaPropFilePath - file name of the properties file that contains the
#     fingerprint(s) of the Certificate Authority's public certificate that
#     is to be accepted.  The file is distributed with the Client software,
#     and the user should change neither the file nor the property value.

caPropFilePath : ./CA.prop

# CertificateAuthorityFile - file name of the certificate authority's
#     public digital certificate.  This is used to check the digital
#     signature on the certificate presented by the server for
#     authentication.  The file is distributed with the Client software, and
#     the user should change neither the file nor the property value.

CertificateAuthorityFile : ./certs/betaSNAS-ca-cert.der
```

```
# ClientCertificateFile - file name of the user's public digital
#     certificate.  The user enters this when installing the Client software
#     for the first time, or when installing a new certificate with a
#     different file name.
#
# SNAS Client will allow multiple users to share the same application folder.
# Doing so, it needs to know all the registered users and where they store
# their certificates and passphrases.  For example, John Smith and Mary Jones are
# the registered users, they have their certificates stored at:
#   ./certs/htsi-jsmith-cert.der
# and
#   ./certs/htsi-mjones-cert.der
# then, these certificates must be listed as:

# jsmith certificates
#jsmithClientCertificateFile : ./certs/htsi-jsmith-cert.der
#jsmithPrivateKeyFile        : ./certs/enc-htsi-jsmith-key.der

# mjones certificates
#mjonesClientCertificateFile : ./certs/htsi-mjones-cert.der
#mjonesPrivateKeyFile        : ./certs/enc-htsi-mjones-key.der
#
# here's the usual generic one, uncommented:
#

userClientCertificateFile : ./certs/company-user-cert.der
userPrivateKeyFile        : ./certs/enc-company-user-key.der

mgakenheimerClientCertificateFile : ./certs/htsi-mgakenheimer-cert.der
mgakenheimerPrivateKeyFile        : ./certs/enc-htsi-mgakenheimer-key.der


# CertificateExpirationWarning - number of days before a certificate
#     expires that the user will receive an expiration warning during login.
#     The warning will appear during each login session until a new
#     certificate is installed.  Certificates are generated with an
#     expiration of 365 days.  The warning value is initially set to 30
#     days.

CertificateExpirationWarning : 30


# AccountExpirationWarning - number of days before a user's account
#     expires that the user will receive an expiration warning during login.
#     The warning will appear during each login session until the account is
#     renewed.  The SNAS DBA sets the account expiration time.

AccountExpirationWarning : 30
```

```
AckFrequencyMultiple : 120

# ActiveClientPingFreq - maximum time, in seconds, that the Client
#     should wait before sending an acknowledgment (ack) to the server when
#     the Client stops receiving data after active traffic flow between client
#         and server.  The Client normally sends an ack after receiving data from
#     the server, but only after the Client is able to process all the
#     outstanding data on the socket.  The redundant ack produced by
#     this time ensures that the Client continues to receive
#     data even if the server fails to receive the normal ack.  The ack
#     timeout also functions as a keepalive message to notify the Client
#     when a connection problem has occurred, so that the connection doesn't
#     remain in a half-open state where the server has closed the connection
#     but the Client may think it is still open.

ActiveClientPingFreq : 30

#PassiveClientPingFreq - max time, in seconds, that the Client
#     should wait before sending an acknowledgment (ack) to the server when
#     when there is no active traffic flow between client
#         and server. The ack timeout also functions as a keepalive
#     message to notify the Client when a connection problem has
#     occurred, so that the connection doesn't remain in a
#     half-open state where the server has closed the connection
#     but the Client may think it is still open.

PassiveClientPingFreq : 10


# InputBufferSize - TCP socket read buffer size, normally set to match
#     the server's output buffer size.  The user should not change this
#     unless directed to do so by the SNAS DBA or System Administrator.

InputBufferSize : 1024000


# OutputBufferSize - TCP socket write buffer size, normally set to match
#     the server's input buffer size.  The user should not change this
#     unless directed to do so by the SNAS DBA or System Administrator.

OutputBufferSize : 1024000


# AutoReconnect - option to try to automatically reconnect to the server
#     if the socket connection to the server is lost.

AutoReconnect : true


# MaxReconnectAttempts - if AutoReconnect is true, this property is the
```

```
#     maximum number of reconnection attempts that will be made each time
#     the connection is lost.  If AutoReconnect is false, this property has
#     no effect.

MaxReconnectAttempts : 10


# ReconnectDelay - if AutoReconnect is true, this is the delay in
#     seconds between each reconnection attempt.

ReconnectDelay : 30


# CompressSocket - indicates whether incoming data on TCP socket
#     is compressed.  This is normally set to match the setting on the
#     server and should not be changed unless under the direction of the
#     SNAS DBA or System Administrator.

CompressSocket : true


########################
## Logging Properties ##
########################

# WriteToLog - indicates whether alerts should be logged.  Alerts are
#     logged to a file if this is set to true.

WriteToLog : true


# LogDir - directory where the current (active) log file is created.

LogDir : ./logs/current


# ArchiveDir - directory to which archived (old) log files are moved.

ArchiveDir : ./logs/archive

# ArchieveLogAge - Keep logs that are as young as than this value (days)
ArchieveLogAge : 120

# PurgeArchiveAfter - Archieve that are older that this value (days) will be purged
PurgeArchiveAfter : 90

# AlertAge - Alerts that are as young as this value (hours) will be kept
AlertsAge : 24

# MaxLogFileSize - maximum output log file size in bytes.  When the log
```

```
#     file reaches this size and SwitchLogFileAtMax is set to true, the
#     current log file is closed and a new log file is started.

MaxLogFileSize : 100000

####################
## UPD Properties ##
####################

# UPDDefaultFilePath - for User Performance Data (UPD), this property
#     defines the path to the properties file that defines the default UPD
#     layouts to use for each SIC and service type.

UPDDefaultFilePath : ./UPDs.prop


# DASUPDPrimaryExpirationTime - time in seconds by which another DAS UPD
#     must arrive after which a service is flagged as expired.

DASUPDPrimaryExpirationTime : 120


# DASUPDSecondaryExpirationTime - time in seconds by which another DAS
#     UPD must arrive after which a service is removed from the list of
#     active services in the UPD Summary Frame.

DASUPDSecondaryExpirationTime : 360


# NCCUPDPrimaryExpirationTime - time in seconds by which another NCC UPD
#     must arrive after which a service is flagged as expired.

NCCUPDPrimaryExpirationTime : 30


# NCCUPDSecondaryExpirationTime - time in seconds by which another NCC
#     UPD must arrive after which a service is removed from the list of
#     active services in the UPD Summary Frame.

NCCUPDSecondaryExpirationTime : 60


# UPDLogging - defines whether UPD messages received from NCCDS or DAS
#     are logged.

UPDLogging : false

# UPDAge - UPDs that are as young as this value (hours) will be kept
UPDAge : 24
```

```
# UPDLogDir - directory where UPD messages received from NCCDS or DAS
#     are written to.

UPDLogDir : ./upd/current


# UPDArchiveDir - directory to which archived (old) UPD messages are
#     moved.

UPDArchiveDir : ./upd/archive


# UPDMaxLogSize - maximum UPD log file size in bytes.  When the UPD log
#     file reaches this size, the current UPD log file is closed and a new
#     UPD log file is started.

UPDMaxLogSize : 1048576

# UPDMaxPerFile - maximum number of UPDs contained in a single log file.
#                 When this number is reached the current UPD log file is
#                 closed and a new UPD log file is started.
UPDMaxPerFile : 250

################################
## Active Schedule Properties ##
################################

# asEnable - defines whether the Active Schedules received automatically
#     from the SNAS server are written to files.

asEnable : true


# asOutputPath - directory where Active Schedule files received
#     automatically from the SNAS server are stored.  If asEnable is false,
#     this property has no effect.

asOutputPath : ./active_sched

#############################
## DAS Playback Properties ##
#############################

# DefaultPlaybackIP - default Destination IP Address for DAS Playback
#     Planning Requests

DefaultPlaybackIP : 123.123.123.123
```

```
# DefaultPlaybackPort - default Destination Port Number for DAS Playback
#     Planning Requests

DefaultPlaybackPort : 07222

############################
## Alert Panel Properties ##
############################

# BringToFront - option to bring the Alert Panel to the front (on top of
#     any open panels or windows) when an alert message is received.  Note
#     that if the Set Warnings option in the Alert Panel is set and a
#     critical message is received, the pop-up message will bring the Alert
#     Panel to the front even if the BringToFront property is false.

BringToFront : false


# DisplayWarnings - defines whether to display a dialog box whenever a
#     critical (red) alert is received.  If true, display a dialog box.

DisplayWarnings : false

# Alert Audible - play a sound when a critical alert occurs
# Acceptable values: BELL, WHISTLE, NONE
AlertAudible : BELL

######################
## Debug Properties ##
######################

# SSLDebug - defines whether debug output is generated by the SSL
#     security system. If true, generate debug output. This is normally only
#     useful to a developer when trying to troubleshoot problems.  This can
#     generate a lot of output, thus slowing down the SSL connection,
#     default is set to false.

SSLDebug : false


# ClientDebug - defines whether debug output is generated by the Client
#     application.  As with SSLDebug, this is normally only useful to a
#     developer when trying to troubleshoot problems.

ClientDebug : true


##############################
## Bulk Schedule Properties ##
##############################
```

```
# BulkSchedDir - set the default directory for the file chooser
#      when users select Bulk Schedule Requests from the Main Control Panel

BulkSchedDir : ./bulk_sched

# Recommended Bulk Data File Size
# 300 kilobytes * 1 kilobyte * 1024 bytes
BulkDataFileSize : 307200

# Recommended BulkRequestSubmissionInterval is 2 seconds
BulkRequestSubmissionInterval : 2

################################
## Return Receipt Properties ##
################################
# MinutesToWaitForReceipt - Maximum number of minutes to wait for a Return Receipt
#                           from the server prior to retransmitting.
MinutesToWaitForReceipt : 2
#HoursToStaleReceipt - Number of hours that a server request will be managed after
#                      which it is purged from the receipt management queue.
HoursToStaleReceipt : 24
#RetransmitsOnDbFailure - Maximum number of times to retransmit when a
#                         return receipt indicates a server database error.
RetransmitsOnDbFailure : 2

##############################
## Squawk Box Properties        ##
##############################
ShowSquawkBox : true

####################################
## Hourly TUT Retrieval Properties##
####################################
HourlyTutActivated : true
HourlyTutDirName : ./hourlyTut
HourlyTutFilePrefix : tut
HourlyTutFileExt : tut
#time (in seconds) delay in between checking the property value
for HourlyTutActivated
HourlyTutActCheckInterv : 360

##################################################
##### Schedule Request Summary Properties   #####
##################################################
ScheduleRequestSummaryAutoRefresh         : true

# number of seconds
ScheduleRequestSummaryAutoRefreshInterval : 20
```

```
##########################################
###### Active Event Summary Properties  ####
##########################################
ActiveEventSummaryAutoRefresh         : true

# number of seconds
ActiveEventSummaryAutoRefreshInterval : 20

# days prior to now that an active event may have started and still appear
# on the Active Event Summary display
ActiveEventSummaryAllowablePriorDays : 0

##################################
## Timeline Summary Properties  ##
##################################
TimelineAutoRefresh         : true

# number of seconds
TimelineAutoRefreshInterval : 20

#########################################
## Recurrent Scheduling Properties     ##
#########################################
# RsBulkFileDir - The dir in which RS will drop the generated bulk file
# RsBulkFileExt - the ext of the generated bulk file
RsBulkFileDir : .
RsBulkFileExt: blk

####################################
## Auto Recreate USM Properties##
####################################
# AutoUsm - Turns on/off the auto feature for recreating USMs
# AutoUsmDur - The duration of time period for which USMs will be recreated.
#       The duration will be subtracted from the stop time of the latest USM
found in DB to
#       get the start time of the time period. Stop time of teh time period is
the stop time
#       of the latest USM found in DB. Units are seconds. (21 days is
1814400 seconds)
# AutoUsmDirName - The dir in which the files containing the USMs will be written
#AutoUsmFilePrefix - the prefix for the file name containing USMs. File name
will consist of
#                    prefix plus time stamp plus file extension
#AutoUsmFileExt - The extension for the file name containing USMs.
#AutoUsmSic - the SIC for which the USMs will be re-created.
AutoUsm : true
AutoUsmDirName : ./autoUsm
AutoUsmFilePrefix : usm
AutoUsmFileExt : cfm
AutoUsmDur : 1814400
```

```
AutoUsmSic : 1446

#####################################
## EPS (FTP) Properties             ##
#####################################
# EpsImportDirPollTime - time (in minutes) delay between searches for
#     files in EPS import dir.  Minimum is 1 minute.
#EpsTmpDir - import files are moved from import dir into this tmp dir temporarily
EpsImportDirPollTime : 5
EpsEnabled : false
EpsTmpDir : ./tmp
# MultiNativeMsgPerFile - If true, multiple native messages can be written to
a file. If false,
# each file will contain only one native message.
MultiNativeMsgPerFile : true

##########################################################################
## EPS (TCP Alternative) Properties (total: 13 parameters only)          ##
##########################################################################

# EnableEpsTcpIp - enable the EPS TCP/IP option
EnableEpsTcpIp : false

# MocLocalHostName - the host name that EPS TCP node uses to connect to MOC client
MocLocalHostName : localhost

# EnableSchedulingServices - enable the NCC scheduling service connections on ports:
# {SchReqSvcPort, SchStatusSvcPort, AcqStoreSvcPort, TswStoreSvcPort}.
# Please contact Snas O&M to enable mission's scheduling service entry in
the database schedule connection table.
EnableSchedulingServices : false

# EnableRealtimeServices - enable the NCC realtime service connections on ports:
# {PmDataSvcPort, ReconfigSvcPort}.
# Please contact Snas O&M to enable mission's realtime service entry in the
database realtime connection table.
EnableRealtimeServices : false

# SchReqSvcPort - NCC SchReq Service port that EPS TCP node uses to connect to
MOC client
SchReqSvcPort : 35101

# SchStatusSvcPort - NCC SchStatus Service port that EPS TCP node uses to connect
to MOC client
SchStatusSvcPort : 35102

# PmDataSvcPort - NCC PmData Service port that EPS TCP node uses to connect to
MOC client
PmDataSvcPort : 35103
```

```
# ReconfigSvcPort - NCC Reconfig Service port that EPS TCP node uses to connect
to MOC client
ReconfigSvcPort : 35104

# AcqStoreSvcPort - NCC AcqStore Service port that EPS TCP node uses to connect
to MOC client
AcqStoreSvcPort : 35105

# TswStoreSvcPort - NCC TswStore Service port that EPS TCP node uses to connect
to MOC client
TswStoreSvcPort : 35106

# ReportPort - Report Service port that EPS TCP node uses to connect to MOC client
ReportPort : 35107

# EpsNccNativeHexDumpOn - to log all EPS-TCP NCC Native data in Hex
EpsNccNativeHexDumpOn : true

# EpsNccNativeHexBlockSize - the block size for aligning EPS-TCP NCC Native data
Hex logs
EpsNccNativeHexBlockSize : 20

# EpsNccNativeAsciiDumpOn - to log all EPS-TCP NCC Native data in ASCII
EpsNccNativeAsciiDumpOn : true

# MaxNumOfRetransmits - maximum number of retransmits when a EPS-TCP request is
not able to be stored
# in the database with non-fatal status or not responded by the server timely.
MaxNumOfRetransmits : 1
```

- The meaning of each property in the example is given below:
  - **Log4JConfig**. Location and name of the XML file that defines the configuration of logging performed by the Client software.
  - **ServerIPAddressOPS/ServerIPAddressEIF**. Fully qualified domain name or IP address of the server in either OPS or EIF mode used in the Login Panel.
  - **ServerPortNumberOPS/ServerPortNumberEIF**. Transmission Control Protocol (TCP) port number for the socket connection to the server in either OPS or EIF mode used in the Login Panel.
  - **ConnMode (optional)**. Defines whether to open the Login Panel with EIF mode selected. If false or not present, Operations (OPS) mode is selected.
  - **SelectSICsAtLogin**. For multimission users, defines whether a dialog will appear prior to completion of login to allow selection of which SICs will be used for that session. This is normally set to false since most users are authorized for only a single SIC. Setting to false also indicates to use all authorized SICs for each session.
  - **UseSSL**. Defines whether the socket connection to the server will be encrypted. Since the operational servers do not allow unencrypted connections, this should always be set to true.
  - **CipherSuite**. Defines the algorithm used to establish the Secure Socket Layer (SSL) connection to the server. This is normally set to match the setting on the server and should not be changed unless under the direction of the SN or SNAS System Administrator.
  - **caPropFilePath**. File name of the properties file that contains the fingerprint(s) of the Certificate Authority's public certificate that is to be accepted. The file is distributed with the MOC Client software, and should not be changed unless under the direction of the SN DBA or System Administrator.
  - **CertificateAuthorityFile**. File name of the certificate authority's public digital certificate. This is used to check the

digital signature on the certificate presented by the server for authentication. The file is distributed with the MOC Client software, and should not be changed unless under the direction of the SN DBA or System Administrator.

- **xxxxClientCertificateFile**. File name of the user's public digital certificate where xxxx is the user's account name. The user enters this when installing the MOC Client software for the first time, or when installing a new certificate with a different file name. Multiple users are allowed and one parameter is required for each user.
- **xxxxPrivateKeyFile**. File name of the user's encrypted private key file where xxxx is the user's account name. This is used to digitally sign the public digital certificate for presentation to the server. The user enters this when installing the MOC Client software for the first time, or when installing a new certificate with a different file name. Multiple users are allowed and one parameter is required for each user.
- **CertificateExpirationWarning**. Number of days before a certificate expires that the user will receive an expiration warning during login. The warning will appear during each login session until a new certificate is installed. Certificates are generated with an expiration of 365 days. The warning value is initially set to 30 days.
- **AccountExpirationWarning**. Number of days before a user's account expires that the user will receive an expiration warning during login. The warning will appear during each login session until the account is renewed. The SN DBA sets the account expiration time.
- **ActiveClientPingFreq**. Maximum time, in seconds, that the Client should wait before sending an acknowledgment (ack) to the server when the Client stopsreceiving data after active traffic flow between client and server.
- **PassiveClientPingFreq**. Maximum time, in seconds, that the Client should wait before sending an acknowledgment (ack) to the server when there is not active traffice flow between client and server.
- **InputBufferSize**. TCP socket read buffer size, normally set to match the server's output buffer size. The user should not change this unless directed to do so by the SNAS DBA or System Administrator.
- **OutputBufferSize**. TCP socket write buffer size, normally set to match the server's input buffer size. The user should not change this unless directed to do so by the SNAS DBA or System Administrator.
- **AutoReconnect**. Option to try to automatically reconnect to the server if the socket connection to the server is lost.
- **MaxReconnectAttempts**. If AutoReconnect is*true*, this property is the maximum number of reconnection attempts that will be made each time the connection is lost. If AutoReconnect is*false*, this property has no effect.
- **ReconnectDelay**. If AutoReconnect is*true*, this is the delay in seconds between each reconnection attempt.
- **CompressSocket**. Indicates whether incoming data on TCP socket is compressed. This is normally set to match the setting on the server and should not be changed unless under the direction of the SNAS DBA or System Administrator.
- **WriteToLog**. Indicates whether alerts should be logged. Alerts are logged to a file if this is set to*true*.
- **LogDir**. Directory where the current (active) log file is created.
- **ArchiveDir**. Directory to which archived (old) log files are moved.
- **ArchieveLogAge**. Keep logs for this number of days.
- **PurgeArchiveAfter**. Archived files will be purged after this number of days
- **AlertAge**. In hours. The alerts stored in the database within the specified number of hours are retrieved when the user logs in successfully.
- **MaxLogFileSize**. Maximum output log file size in bytes. When the log file reaches this size and*SwitchLogFileAtMax*is set to true, the current log file is closed and a new log file is started.
- **UPDDefaultFilePath**. For UPD, this property defines the path to the properties file that defines the default UPD layouts to use for each SIC and service type.
- **DASUPDPrimaryExpirationTime**. Time in seconds by which another DAS UPD must arrive after which a service is flagged as expired.
- **DASUPDSecondaryExpirationTime**. Time in seconds by which another DAS UPD must arrive after which a service is removed from the list of active services in the UPD Summary Frame.
- **NCCUPDPrimaryExpirationTime**. Time in seconds by which another NCCDS UPD must arrive after which a service is flagged as expired/stale.
- **NCCUPDSecondaryExpirationTime**. Time in seconds by which another NCCDS UPD must arrive after which a service is removed from the list of active services in the UPD Summary Frame.
- **UPDLogging**. Defines whether UPD messages received from NCCDS or DAS are logged.
- **UPDAge**. Retention period of UPDs in hours.

- **UPDLogDir**. Directory where UPD messages received from NCCDS or DAS are written to.
- **UPDArchiveDir**. Directory to which archived (old) UPD messages are moved.
- **UPDMaxLogSize**. Maximum UPD log file size in bytes. When the UPD log file reaches this size, the current UPD log file is closed and a new UPD log file is started.
- **UPDMaxPerFile**. Maximum number of UPDs contained in a single log file.
- **asEnable**. Defines whether the capability to receive Active Schedules from the SNAS server and write them to files is enabled.
- **asOutputPath**. Directory where Active Schedule files received automatically from the SNAS server are stored. If*asEnable*is*false*, this property has no effect.
- **DefaultPlaybackIP**. Default Destination IP Address for DAS Playback Requests.
- **DefaultPlaybackPort**. Default Destination Port Number for DAS Playback Requests.
- **BringToFront**. Option to bring the Alert Panel to the front (on top of any open panels or windows) when an alert message is received. Note that if the Set Warnings option in the Alert Panel is set and a critical message is received, the pop-up message will bring the Alert Panel to the front even if the*BringToFront*property is*false*. For more details on the Alert Panel, see Section 7.
- **DisplayWarnings**. Defines whether to display a dialog box whenever a critical (red) alert is received. If*true*, display a dialog box.
- **AlertAudible**. Enable the generation of a sound (BELL or WHISTLE) when a critical (red) alert occurs. Set to NONE if no sound is desired.
- **SSLDebug**. Defines whether debug output is generated by the SSL security system. If*true*, generate debug output. This is normally only useful to a developer when trying to troubleshoot problems. This can generate a lot of output, thus slowing down the SSL connection, so it is normally set to*false*.
- **ClientDebug**. Defines whether debug output is generated by the MOC Client application. As with SSLDebug, this is normally only useful to a developer when trying to troubleshoot problems.
- **BulkSchedDir**. Defines the default path to the Bulk Schedule Data Request file. If a different path is desired, the SNAS user highlights the default path and enters the new path. When changing the path, the user must ensure that the new path maintains the same local directory construct, (e.g., "./xxxx").
- **BulkDataFileSize**. Defines the recommended Bulk Data File size (300 Kilobytes). If user chooses to change the file size, the new designation needs to be calculated using the "xxx kilobytes * 1 kilobyte * 1024 bytes" formula to obtain exact byte count.
- **BulkRequestSubmissionInterval**. Recommended interval time is 2 seconds. The 2-second pause can be reset to a higher number but not down to 1 or 0. If a lower count is entered, the SNAS system will ignore the new setting and default to 2 seconds.
- **MinutesToWaitForReceipt**. Maximum number of minutes to wait for a Return Receipt from the server prior to retransmitting.
- **HoursToStaleReceipt**. Number of hours that a server request will be managed after which it is purged from the receipt management queue.
- **RetransmitsOnDbFailure**. Maximum number of times to retransmit when a return receipt indicates a server database error.
- **EpsImportDirPollTime**. Time (in minutes) delay between searches for files in EPS import directory. Minimum is 1 minute. This property has no effect if the EpsEnabled property is set to false.
- **EpsEnabled**. The flag that enables/disables EPS processing.
- **EpsTmpDir.**Temporary directory from which EPS import files are executed.
- **MultiNativeMsgPerFile**. Logical parameter to allow multiple native messages to be written to a file before another file needs to be opened.
- **ShowSquawkBox**. This property control the initial display of the Squawk Box on the Main panel. If true, the Squawk will be display. After a successful login, use can control the display of the Squawk Box by clicking on the Show/Hide button on the Main panel.
- **HourlyTutActivated**. This flag is set to true if hourly updated TUT files are to be pushed to client workstation and saved on disk.
- **HourlyTutDirName**. Folder/directory name on the client workstation where the hourly TUT files are to be located.
- **HourlyTutFilePrefix**. The initial string (prefix) of saved TUT files.
- **HourlyTutFileExt**. The file extension of saved TUT files.

- **HourlyTutActCheckInterv**. Time delay, in seconds, between checking the property value for HourlyTutActivated.
- **EnableEpsTcpIp**. This flag is set to true to enable the EPS TCP/IP option.
- **MocLocalHostName**. The host name that EPS TCP node uses to connect to MOC client.
- **EnableSchedulingServices**. This flag is set to true to enable the NCC scheduling service connections on ports: SchReqSvcPort, SchStatusSvcPort, AcqStoreSvcPort and TswStoreSvcPort.
- **EnableRealtimeServices**. This flag is set to true to enable the NCC realtime service connections on ports: PmDataSvcPort and ReconfigSvcPort.
- **SchReqSvcPort**. NCC SchReq Service port that EPS TCP node uses to connect to MOC client. Refer to the 452-ICD-SN/CSM Section 4.3.2 Data Flow Over TCP Connections for detailed information on this service.
- **SchStatusSvcPort**. NCC SchStatus Service port that EPS TCP node uses to connect to MOC client. Refer to the 452-ICD-SN/CSM Section 4.3.2 Data Flow Over TCP Connections for detailed information on this service.
- **PMDataSvcPort**. NCC PmData Service port that EPS TCP node uses to connect to MOC client. Refer to the 452-ICD-SN/CSM Section 4.3.2 Data Flow Over TCP Connections for detailed information on this service.
- **ReconfigSvcPort**. NCC Reconfig Service port that EPS TCP node uses to connect to MOC client. Refer to the 452-ICD-SN/CSM Section 4.3.2 Data Flow Over TCP Connections for detailed information on this service.
- **AcqStoreSvcPort**. NCC AcqStore Service port that EPS TCP node uses to connect to MOC client. Refer to the 452-ICD-SN/CSM Section 4.3.2 Data Flow Over TCP Connections for detailed information on this service.
- **TswStoreSvcPort**. NCC TswStore Service port that EPS TCP node uses to connect to MOC client. Refer to the 452-ICD-SN/CSM Section 4.3.2 Data Flow Over TCP Connections for detailed information on this service.
- **ReportPort**. Report Service port that EPS TCP node uses to connect to MOC client.
- **EpsNccNativeHexDumpOn**. This flag is set to true to log all EPS-TCP NCC Native data in Hex.
- **EpsNccNativeHexBlockSize**. The block size for aligning EPS-TCP NCC Native data Hex logs.
- **EpsNccNativeAsciiDumpOn**. This flag is set to true to log all EPS-TCP NCC Native data in ASCII.
- **MaxNumOfRetransmits**. This parameter is for maximum number of retransmits when a EPS-TCP request is not able to be stored in the database with non-fatal status or not repsonded by the server timely.
- **ScheduleRequestSummaryAutoRefresh**. This flag is set to true if Schedule Request Summary panel, once activated, is to be updated periodically automatically.
- **ScheduleRequestSummaryAutoRefreshInterval**. If the ScheduleRequestSummaryAutoRefresh is set to true, this property control the interval, in seconds, between automatical refresh of Schedule Request Summary panel.
- **ActiveEventSummaryAutoRefresh**. This flag is set to true if Active Event Summary panel, once activated, is to be updated periodically automatically.
- **ActiveEventSummaryAutoRefreshInterval**. If the ActiveEventSummaryAutoRefresh is set to true, this property control the interval, in seconds, between automatical refresh of Active Event Summary panel.
- **ActiveEventSummaryAllowablePriorDays**. Number of days prior to the current day that an active event may have started and still appear on the Active Event Summary panel.
- **TimelineAutoRefresh**. This flag is set to true if the Timeline panel, once activated, is to be updated periodically automatically.
- **TimelineAutoRefreshInterval**. If the TimelineAutoRefresh is set to true, this property control the interval, in seconds, between automatical refresh of graphical TImeline panel.
- **RsBulkFileDir**. The directory in which RS will drop the generated bulk file.
- **RsBulkFileExt**. The extension of the generated bulk file.
- **AutoUsm**. Turns ON/OFF the auto feature for recreating USMs.
- **AutoUsmDirName**. The directory in which the files containing the USMs will be written.
- **AutoUsmFilePrefix**. The prefix for the file name containing USMs. This will be followed by a time stamp.
- **AutoUsmFileExt**. The extension for the file name containing USMs.
- **AutoUsmDur**. The duration of the time period for which USMs are created. The time period being defined by the latest end time of any USM in the SNAS database and a start time equal to the end time minus the duration.
- **AutoUsmSic**. The SIC for which the USMs will be re-created.

Chapter 4. General Operating Guidelines

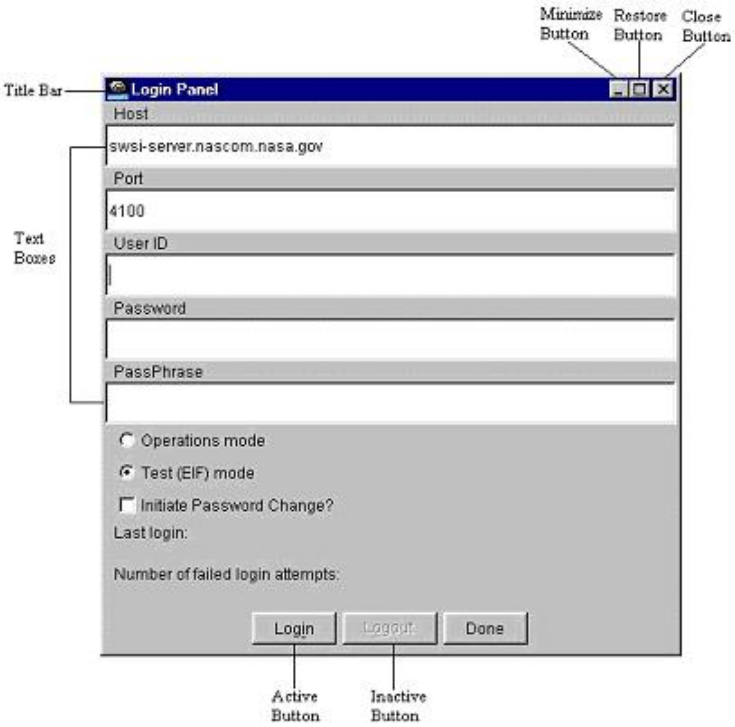
Table of Contents

General Operating Guidelines

General Operating Guidelines

The SNAS GUI consists of numerous SNAS panels that provide the means for a user to actively interact with the SNAS system or configure the SNAS application to automatically interact with MOC components (e.g. EPSs). The GUI is loaded onto the MOC Client workstation and accepts user input from the keyboard and mouse. User data requests are sent to the SNAS server for processing.

Figure 4.1. Sample Window



- **Panels and Windows.**A panel or window is a display area that is surrounded by a border. Some borders can be resized by moving the cursor to their edge and holding down the left mouse button while dragging the cursor. The edge of the window can be dragged to enlarge or reduce the current display size. Panels and windows are used interchangeably throughout this guide.

- **Mouse Movement.**To perform a mouse click or clicks, move the cursor to the designated GUI component (button, menu selection, etc.) and press and release the left mouse button once. Clicking using the right mouse button will be explicitly stated as*click with the right mouse button*.

- **Minimize Button.**The Minimize button is located on the upper right hand corner of most windows. Clicking on the

Minimize button reduces the window to an icon. On Windows platforms, this icon appears on the task bar. Note that not all panels or windows are iconifiable. To restore a minimized window, point to the icon of the desired window and double click the left mouse button. The window opens at the same position it occupied before being iconified.

- **Close Button.**On Windows platforms, the Close button is located on the upper right hand corner of all windows. Clicking on the Close button normally causes the window to be removed from the user's display.

- **Window Title Bar.**The Window Identification bar, located at the top of each window, displays the name of the window. Only one window will be active at a time. The title bar of the active window is shown in a different color than that of inactive windows. To establish an active window, move the cursor to the desired window and click the left mouse button. Characters typed on the keyboard are sent to components within the active window.

- **Active Buttons.**Buttons with black text labels are active and perform an action if clicked upon.

- **Inactive Buttons.**Buttons with gray text labels are desensitized and inactive. Buttons in this state will not perform any actions if clicked upon.

- **Radio Button.**A radio button is a labeled set of choices with a small button to the left of each choice. Only one value in a radio button may be selected at a time. The currently selected value is represented by the button that looks depressed (pushed in).

- **Combination Box.**A combination box provides a way to select one of a set of options and is similar to a radio button in operation. A combination box looks like a text box that shows the current selection with a down arrow button on the right. When pressed, the down arrow displays a menu of text choices.

- **Scrollbars.**A scrollbar is an object that allows you to view a large window within a smaller window called a viewport. Manipulating a scrollbar allows you to view portions of a larger window through the viewport. A scrollbar has three components: the scroll arrows, the scroll region, and the scroll box. The scroll box will change size depending on the percentage of information visible in the viewport. If all information is visible, the box will occupy the entire region (if the scrollbar remains visible). Scroll bars may be oriented vertically or horizontally. Use the scrollbar by clicking on the scroll arrows or by dragging the scroll box.

- **Time Component.**A number of time entry objects can be found throughout the SNAS Client. You can modify each of the components by using the up or down arrows or by typing the new value. Position the mouse cursor over the value of the time component you wish to change (year, day, hour, minute, or second). Left click on that field. Click the arrow buttons to increase or decrease the highlighted field or type in the new value.

- **Text Box.**Some windows contain one or more Text boxes. A Text box is any place within which the user can type text or numbers on the screen.

- **Dialog Box.**Dialog boxes are usually small windows containing a textual message that provide information pertinent for the current operational context. They may solicit a response from the user and may be of type Information, Alert, Note, or Error.

- **Menu Bars.**Windows may have a bar of pulldown menus that provide various operations for control. The window menu bar is located directly below the window title bar. Menu Bar pulldown menus are accessed by moving the cursor over the desired label and clicking on the left mouse button. To select a menu entry on the resulting pulldown menu, drag the cursor along the menu until the desired option is highlighted. Then click the left mouse button.

Note

"..." or "›" indicates that another submenu will be displayed. Entries without a "..." or "›" perform an action immediately.

- **Tabular Displays.**Tabular displays show data in tables. In some tables columns can be reordered by dragging a column header across other headers. Entries can be selected by clicking on the desired row.

  Tables can usually be sorted by one or more columns by clicking on the column headers. The first click on a header results in an up-pointing arrow appearing inn the header and sorting the data by the clicked column in ascending order. The second click on the same header changes the arrow to down-pointing and reverses the sorting and the data now is sorted by the clicked column in descending order. The third click on the same column removes the arrow and the sort by the column, and the order of display before the first click will be restored. To sort displayed data by multiple columns, press the Ctrl key while clicking each desired column one, two, or three times. The displayed data is sorted according to the "order" of clicked columns, and the last column changed will be the last one by which the data is sorted. For example, assume there are five columns -- c1 through c5 -- in a sortable table. Perform a Ctrl-c3 (press Ctrl key and click on the c3 column header) will sort the data in ascending order by c3. Perform another Ctrl-c3 will now sort the data in descending order by c3. Perform a Ctrl-c2 and the data is now first sorted in descending order by c3 then in ascending order by c2. Perform Ctrl-c4 twice and the data is now first sorted in descending order by c3, then in ascending order by c2, and last in descending order by c4. Perform another Ctrl-c3 and the data is now first sorted in ascending order by c2 then in descending order by c4.

  Some displays provide one or two display filtering capabilities. In conjunction with requesting data from the data server, a filter option may exist prior to bringing up the display. Then within the display may lie the option to further filter the data that has been retrieved. The latter option lies in the filtering cells are located directly below the column headers. When the diaplayed data is not filtered by a column an "ALL" will appear in the filtering cell for that column. To filter the data display by a column, click on the filtering cell for that column. All available values for the column and "ALL" are now shown in a list box. Click on the desired value and only items with the selected value for the column remain in the display. If filtering is enabled in more than one column, the display is the intersect of all filtered columns. Select "ALL" for a column will remove the filtering for that column.

  In tables with refresh/reload capabilities, click on refresh/reload does not change the sorting/filtering setup.

Chapter 5. MOC Client Startup and Login

Table of Contents

Startup
Login
Connection Problems and Automatic Reconnection
Login Problems

Startup

- To start the MOC Client application, use one of the startup scripts provided with the MOC Client distribution. For Unix systems, use the*unclient.csh*script. Be sure to first edit the script for your environment as described in the installation instructions. For Windows systems use the*unclient.bat*batch file or the shortcut created as described in the installation instructions.

Note

Do not setup your client workstation to go into "Hibernate" mode while running MOC Client software. Going into Hibernate mode will disrrupt client-server communications and likely to cause software failure.

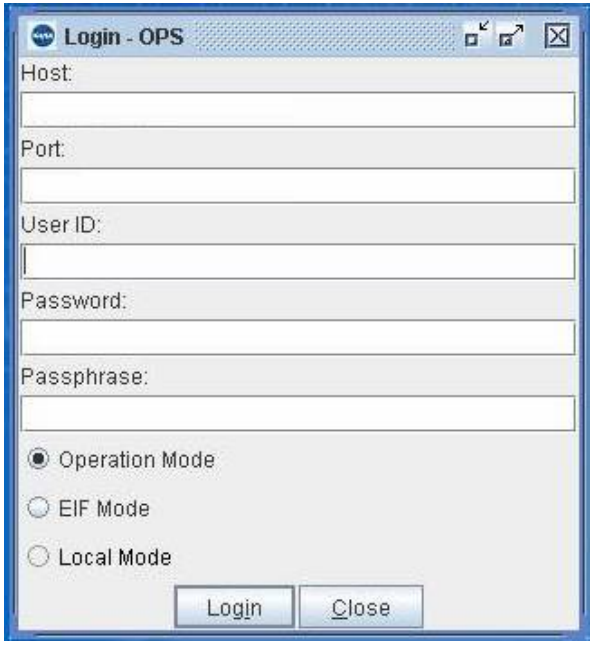
- If the MOC Client is started successfully, a dormant Main Control Panel and the NASA IT Security Warning panel appear. After clicking the OK button to acknowledge the Security Warning, the Login Panel appear. An overview of the functions available through the Main Control Panel is provided in Section 6.

Figure 5.1. NASA IT Security Warning Panel

Login

The Login Panel is displayed when the MOC Client first starts up and whenever the user logs off.

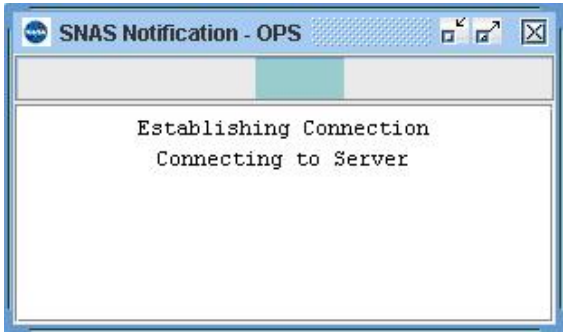
Figure 5.2. Login Panel



- The Login panel contains options for*Operations, Test, and Local*mode. The mode selected at startup is controlled by the*ConnMode*. In operations mode, the user is connected to the operations NCCDS at WSC. In test mode, the user is connected to the Auxiliary NCC (ANCC) at WSC for performing Engineering Interface (EIF) tests or user training. Note that the SNAS server maintains separate databases for operations and test modes. The database contains User IDs and Passwords, so it is possible that an operations account may not be identical to a test account; i.e., a User ID may be valid only for operations mode, or a User ID that exists for both modes may have different passwords for each mode. In local mode the SNAS MOC Client does not establish connection to the SNAS servers, and only supports local MOC EPS interfaces.

- To log in, enter User ID, Password, and PassPhrase. If the desired Host, Port, and Mode are different than what is displayed in these fields, then they may be changed at this time. To complete the login process, click on the Login button. At this time the MOC Client attempts to connect to the server and displays a status box. Connection establishment also involves generation of digital keys, which may take 15-30 seconds. Key generation is only required the first time for each MOC Client invocation, so subsequent connection attempts occur much more quickly.

Figure 5.3. Establishing Connection Status Box

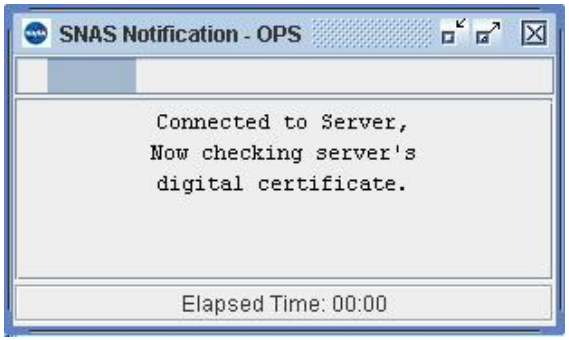


- Once a connection is established, the Login request is sent to the server and the status box is displayed.

Figure 5.4. Login Sent Status Box

- If the Login request is accepted, the status box is displayed. The server retrieves initial setup information from the SNAS database and sends it to the Client. This setup information includes the list of SICs, SUPIDENs, and SSC codes for which the user has authorization, along with other lists, such as TDRS names and display layout information.

Figure 5.5. Login Accepted Status Box



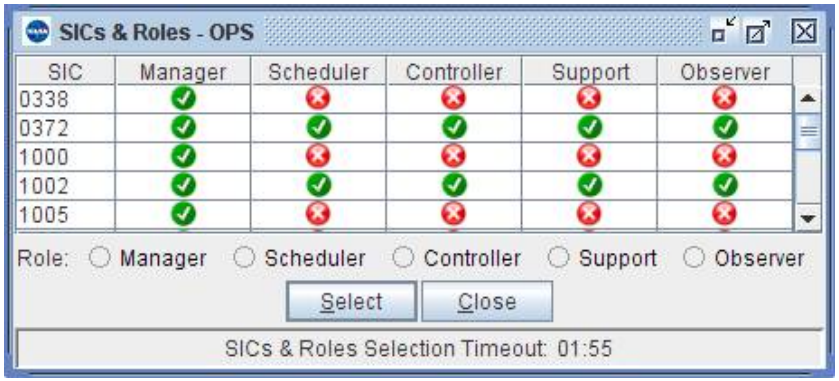
- If the SSL connectionn or Login attempt failed, a pop-up box will appear showing the reason of failure. The user then needs to acknowledge the error and repeat the login process.

Figure 5.6. Sample Login Failure Message

- If the SelectSICsAtLogin property is set to true and the user is authorized for more than one SIC, then the SIC Selection dialog box is displayed. This allows the user to select which SICs are active for this session. The available roles for each SIC have been pre-assigned to the user account by the Mission Manager. Any combination of SICs may be selected by CTRL-clicking the desired SICs. Shift-clicking allows selection of a range of consecutively-displayed SICs. The highest available role for the selected SICs will be dynamically determined. Clicking the Select button instructs the MOC Client to accept the selected list of SICs and the Role.

  The SICs and Roles have to be selected and the Select button clicked within two minutes after the panel is displayed. If the user fails to do so, the login process will be terminated and the user will be logged out.

Figure 5.7. SIC/Role Selection Dialog



- After the SICs and Role have been accepted by the SNAS server, the User ID, Role and the Mode are displayed on the bottom of the Main Control panel. Items on the Main Menu bar are activated according to the Role assigned to the user. An alert message with user session information including the Closed or Open Server the client is connected to, the time of Login and the SICs selected appears in the Alert panel.

- It is upon the Mission Manager to establish User ID and SIC/Role access for all new users by using the Add User Account panel.

- After successful SIC and Role selection, the Login process is complete. An active MOC Client Main Control panel, a system status indicator and an Alert panel appear. Refer to Main Control Panel, View Menu, and Control/Monitor Menu sections for more information on these panels.

Connection Problems and Automatic Reconnection

- Occasionally the TCP connection between the MOC Client and the server will be lost. This can happen due to a congested network, poor network performance, or a temporary failure of some network component. The MOC Client has the ability to automatically reconnect to the server if the connection is lost. The following user configurable properties (set in the client.prop file) control the reconnection behavior:
  - **AutoReconnect**. If '*true*' is set in the client.prop file the auto-reconnect feature is enabled.
  - **MaxReconnectAttempts**. If AutoReconnect is*true*, this property is the maximum number of reconnection attempts that will be made each time the connection is lost. If AutoReconnect is*false*, this property has no effect.
  - **ReconnectDelay**. If AutoReconnect is*true*, this is the delay in seconds between each reconnection attempt.

- If the connection is lost during a session, the status box is displayed. Successive attempts are then made to reconnect to the server. When successful, the login process will occur automatically, subsequently producing an alert indicating that reconnection was successful.

- At any time during the reconnection process, the user may interrupt by selecting Log-out from the User menu on the Main Control Panel.

Figure 5.8. Auto-Reconnect Status Box

Login Problems

- SNAS manages two levels of failed Login attempts. The first is at the user account level. After a user unsuccessfully tried three (3) times to log in with an invalid password, the user's account will be locked. Once locked, the user account can only be unlocked by the SNAS O&M administrator. If the user successfully logs in before the failed Login attempts reaches three, the failed Login attempt count for the user will be reset to zero. The second level is at the Client Workstation, or IP, level. When the number of failed Login attempts made from an IP reached ten (10), the IP, or the Client Workstation, will be locked and no more Logins from the IP will be accepted. Once locked, the IP can only be unlocked by the SNAS O&M administrator. If a Login attempt from the IP is successful before the failed Login attempts for the IP reaches ten, the failed Login attempt count for the IP will be reset to zero.

- Table below lists all the error messages that can appear after a failed Login along with a description and solution.

Table 5.1. Login Error Messages

Error Message	Explanation
An invalid passphrase was entered.	The passphrase entered doesn't match the passphrase chosen when the digital certificate was generated.
No connection could be made to host SNAS-server.nascom.nasa.gov at port #4100.	The MOC Client was unable to connect to the server. The host and/or port name were entered incorrectly, the server is unavailable, a network problem is preventing communication with the server, or the MOC Client workstation's IP address is blocked from accessing the SNAS server.
The re-entered password did not match the first entry.	For a password change, the two new password entries did not match.
Failure changing password. The old password entered was invalid.	For a password change, the old password entry doesn't match what the server expects.
Failure changing password. Password validation failed: Invalid length password: 3	For a password change, the new password must be a minimum of eight characters.

Failure changing password. Password validation failed: Didn't meet password requirements. Minimum requirements are: 3 contains lower case character: false contains upper case character: false contains numeric character: true contains special character: false	For a password change, the new password must have at least one character from each of three categories. In this case only one category, numeric characters, is represented.
Login failed for <userid>. Please make sure the account for <userid> has been activated, and that this user ID and the password entered are correct. Also make sure that another user is not logged in with the same ID from the same IP address.	The server rejected the login attempt for one of the following reasons: The user ID does not exist on the server. The password was entered incorrectly. The account has been deactivated because of too many failed login attempts. There is already another user with the same User ID logged in from the same IP address. Only one login session is allowed per User ID per IP address. A previous session was interrupted by a lost connection that the server has not yet detected. The server may take up to two minutes to detect the loss, during which time the user will be unable to log in because of the single User ID per IP address rule. If still unable to login after correcting all of these problems, or if you suspect your account is not properly activated, contact the SNAS DBA or Operations Supervisor.
No reconnection could be made to host SNAS-server.nascom.nasa.gov at port #4100. The server may be down. Please try again later using manual login.	Automatic reconnection failed.
Certificate Expiration Warning Your digital certificate will expire in xx days. Please visit the SNAS web page to generate a new certificate.	A new digital certificate needs to be generated. Contact O&M for instructions on how to reactivate the certificate.
Account Expiration Warning Your account will expire in xx days. Please contact the SNAS System Administrator or DBA to renew your account.	User account is about to expire and must be renewed by the SNAS DBA.

Chapter 6. Main Control Panel

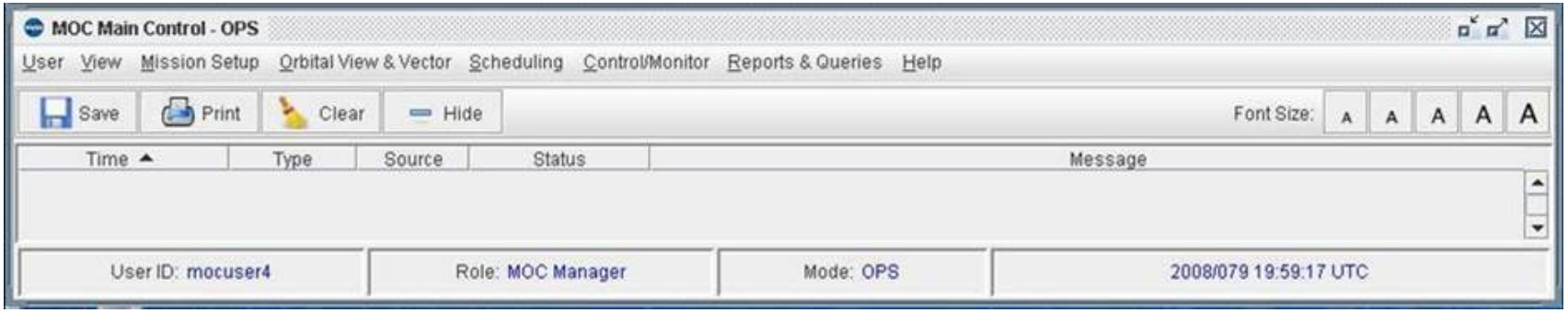
Table of Contents

Main Control Panel
Menu Access
SIC Selection Panel
File Chooser Panel
Utility Buttons

Main Control Panel

- When the user completes the MOC Client Login process, the fully activated Main Control panel appears.
- A Squawk Box area on the Main Control panel is used for displaying of any responses received from O&M on MOC requests to create or update User, SSC, or PE information in the SNAS database.
- The messages in the Squawk Box can be sorted and filtered by column heading.
- The Squawk Box can be displayed or hidden by clicking on the Show/Hide button.
- The Squawk Box contents can be cleared, or be printed or saved to user specified destinations.
- User can choose a font size by clicking one of the five available font sizes. Once a new font size is selected, the texts displayed on all SNAS panels currently active are updated for the new font size.

Figure 6.1. Main Control Panel



The figure below shows all options available from the Main Control panel.

Figure 6.2. Main Control Panel Menu Options

User	View	Mission Setup	View and Vector	Scheduling	Control/Monitor	Reports & Queries	Help
Log-in	System Clocks	Add User Account	Generate Geocentric	TDRS Unscheduled Time (TUT)	Alert Steam	Confirmed Events Listing	Users Guide
Log-out	System Status	Modify User Account	Generate Geodetic	TSW Summary	User Performance Data Summary	Confirmed Events Report	About SNAS MOC Client
Load Workspace	System Status	Mission Spacecraft Characteristics >	Import >	Scheduling Tools >	UPD Parameter Warning/Critical	Confirmed Events Details	About User
Save Workspace		Spacecraft Characteristics	Bulk IIRV	Graphical Timeline		Rejected/Declined Events Report	About SNAS Client Version
Switch User		User Interface Channels	TCW	Schedule Request Summary		Query Active Schedule Upload	Security Warning
Change Password		EPS FTP Setup	PSAT Only	Active Events Summary			Contact Information
Client Properties		Service Types >	PSAT UAV	TSW Time Shift			TDRS Payload Status >
		Available Service Specification Codes (SSCs)	TSW	Bulk Modify			TDRS Space Network Configuration
		DAS Service Specification Codes (SSCs)	Transmit TSWs	Multiple Schedule Delete Requests			TDRS Space Network Payload Status
		NCC Service Specification Codes (SSCs)		Multiple Stored Only Schedule Requests			TDRS Location Zone of Exclusion
		Scheduling Defaults >		DAS Requests >			
		Default Scheduling		TDRS Visibility Request			
		Define Prototype Event		Resource Allocation Request (RAR)			

		RS Edit Super Prototype		Resource Allocation Delete Request (RADR)			
		User Defined TDRS Constraints		Resource Allocation Modification Request (RAMR)			
		Orbital Parameters		Playback Search (PBKR)			
		Define TSW Set IDs		Playback Delete Request			
		Define Orbital Constraints		Playback Modification Request (PBKMR)			
		Available Prototype		NCC Requests >			
				Schedule Add Request			
				Schedule Delete Request			
				Wait List Request (WLR)			
				Alternate Schedule Add Request (ASAR)			
				Replace Request (RR)			
				Bulk Schedule Request			
				Recurrent Schedule			
				Import Messages >			
				NCCDS Blocked Messages			
				NCCDS Headerless			
				DAS Blocked Messages			
				DAS Headerless Messages			
				Re-create USMs			

Menu Access

The figure below shows user role access for the MOC Client User.

- **Mission Manager**. Full access to all menu options and sub-menu options.
- **Scheduler**. General access to the following menu options: User, View, Orbital View & Vectors, Scheduling, Reports & Query, Help. "NCC" and "DAS" specific submenus under the Scheduling menu are only enabled if the user is authorized for SICs configured for NCCDS and/or DAS related services. Limited access is provided for the Control and Monitor option.
- **Controller**. General access to the following menu options: User, View, Orbital View & Vectors, Control & Monitor, Reports & Query, Help. Limited access is provided for the Scheduler option.
- **Support**. General access to the following menu options: User, View, Orbital View & Vectors, Control & Monitor, Reports & Query, Help.
- **Observer**. The observer position is not intended to interact directly with the MOC Client. This position provides a ‘read only' view capability for the Control & Monitor menu options.

Figure 6.3. Role Permissions by Menu Items

Keys: R = Read, W = Write, X = Execute	Mission	Scheduler	Controller	Support	Observer

FA = Full Access, LA = Limited Access, NA = No Access	Manager				
User >	FA	FA	FA	FA	FA
Log-in	X	X	X	X	X
Log-out	X	X	X	X	X
Load Workspace	X	X	X	X	X
Save Workspace	X	X	X	X	X
Switch User	X	X	X	X	X
Change Password	X	X	X	X	X
Client Properties	X	X	X	X	X
View >	FA	FA	FA	FA	FA
System Clocks	X	X	X	X	X
System Status Indicators	X	X	X	X	X
System Status Graphic	X	X	X	X	X
Mission Setup >	FA	LA	LA	NA	NA
Add User Account	X				
Modify User Account	X				
Mission Spacecraft Characteristics >					
Spacecraft Characteristics	X	R	R	R	
User Interface Channels	X	R			
EPS Configuration >					
EPS Setup	X	R	R	R	
Service Types >					
Available Service Specification Codes (SSCs)	R	R	R	R	
DAS Service Specification Codes (SSCs)	X				
NCC Service Specification Codes (SSCs)	X				
Scheduling Defaults >					
Default Scheduling Parameters	X	R	R	R	
Define Prototype Event	X				
RS Edit Super Prototype	X				
User Defined TDRS Constraints	X	R	R	R	
Orbital Parameters	X	R	R	R	
Define TSW Set IDs	X	R			
Define Orbital Constraints	X	R	R	R	
Available Prototype Events	R	R	R	R	
Orbital View & Vectors >	FA	FA	LA	NA	NA
Generate Geocentric	X	X			
Generate Geodetic	X	X			
Import >					
Bulk IIRV (which includes State Vector)	X	X			
TCW	X	X			
PSAT Only	X	X			
PSAT UAV	X	X			
TSW	X	X	X		

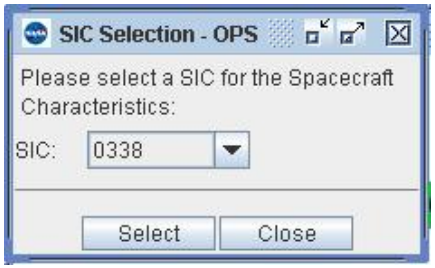
Transmit TSWs	X	X			
Scheduling >	FA	FA	LA	NA	LA
TDRS Unscheduled Time (TUT)	X	X	X		
TSW Summary	X	X	X		
Scheduling Tools >					
Graphical Timeline	X	X			
Schedule Request Summary	X	X	X	X	
Active Events Summary	X	X	X		R
TSW Time Shift	X	X			
Bulk Modify	X	X			
Multiple Schedule Delete Requests	X	X			
Multiple Stored Only Schedule Requests	X	X			
DAS Requests >					
TDRS Visibility Request	X	X	X		
Resource Allocation Request (RAR)	X	X			
Resource Allocation Delete Request (RADR)	X	X	X		
Resource Allocation Modification Request (RAMR)	X	X	X		
Playback Search (PBKR)	X	X			
Playback Delete Request (PBKDR)	X	X			
Playback Modification Request (PBKMR)	X	X			
NCC Requests >					
Schedule Add Request (SAR)	X	X			
Schedule Delete Request (SDR)	X	X	X		
Wait List Request (WLR)	X	X			
Alternate Schedule Add Request (ASAR)	X	X			
Replace Request (RR)	X	X	X		
Bulk Schedule Request (BSR)	X	X			
Recurrent Schedule	X	X			
Import Messages >					
NCCDS Blocked Messages	X	X			
NCCDS Headerless Messages	X	X			
DAS Blocked Messages	X	X			
DAS Headerless Messages	X	X			
Re-create USMs	X	X	X		
Control & Monitor >	FA	LA	FA	LA	LA
Alert Steam	X	X	X	X	X
User Performance Data Summary	X		X		R
UPD Parameter Warning/Critical Range Summary	X	R	R	R	R
Reports & Queries >	FA	FA	FA	FA	NA
Confirmed Events Listing	X	X	X	X	
Confirmed Events Report	X	X	X	X	
Confirmed Events Details	X	X	X	X	
Rejected/Declined Events Report	X	X	X	X	
Query Active Schedule Upload	X	X	X	X	
Help >	FA	FA	FA	FA	FA
Users Guide	X	X	X	X	X
About SNAS MOC Client	X	X	X	X	X
About User	X	X	X	X	X

About SNAS Client Version	X	X	X	X	X
Security Warning	X	X	X	X	X
Contact Information	X	X	X	X	X

SIC Selection Panel

Many SNAS operations begin with the selection of a SIC from a list of available SICs via a GUI panel. Most SIC Selection panels are similar to the one shown here:

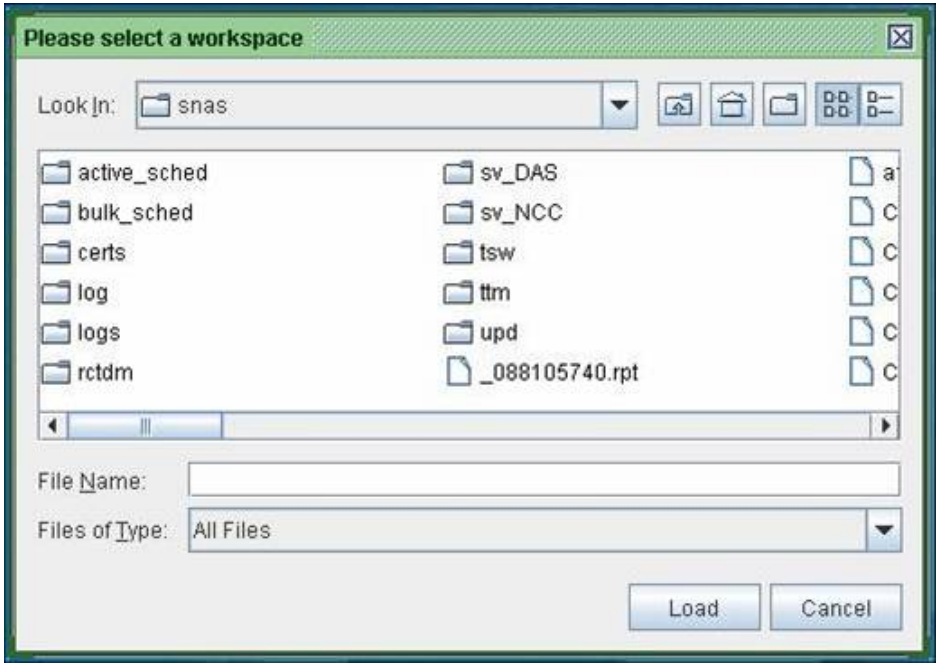
Figure 6.4. SIC Selection Panel



File Chooser Panel

When an operation involves handling of a disk file, a typical file chooser may be invoked for the user to either select an input file to process or a directory/folder and a file name to stored the output data. A typical file chooser panel is shown below:

Figure 6.5. File Chooser Panel



Utility Buttons

All SNAS panels displaying tabulated data have utility buttons at the top of the panels to perform basic functions such as Save and Print. The following table describes the most common utility buttons.

Table 6.1. Utility Buttons

Utility Button	Function
Save	Save the contents of the tabulated display to a disk file
Print	Print out the contents of the tabulated display
Clear	Clear the contents of the display
Close	Close the panel

Chapter 7. User Menu Selections and Panel Descriptions

Table of Contents

User Menu
User/Log-in
Login Panel

User SIC/Role Panel
User/Log-out
Save Workspace
Load Workspace
User/Switch User
Field Descriptions
Button Selections
User/Change Password
Field Descriptions
User/Client Properties
User/Exit

User Menu

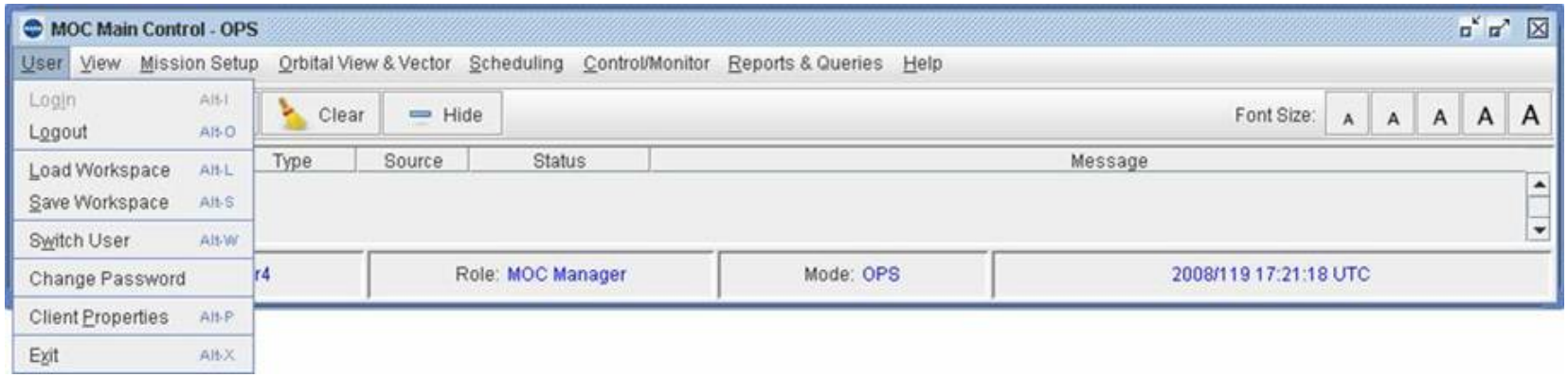
The processing and panels for each main menu selection are described in the following sections. Processing descriptions, field descriptions, and button selections are described where panels are displayed in the processing stream. Similar information is included where Sub-panels are encountered.

Note

All "delete" function performed by a User will require a "confirmation" in dialog panes. Additionally, the "confirmations" will not impede any auto-processing selections set by a user.

The User menu options are generally used to establish and terminate User interaction with the MOC Client. The user menu also allows the user to save and later on restore the layout of workspace.

Figure 7.1. User Menu



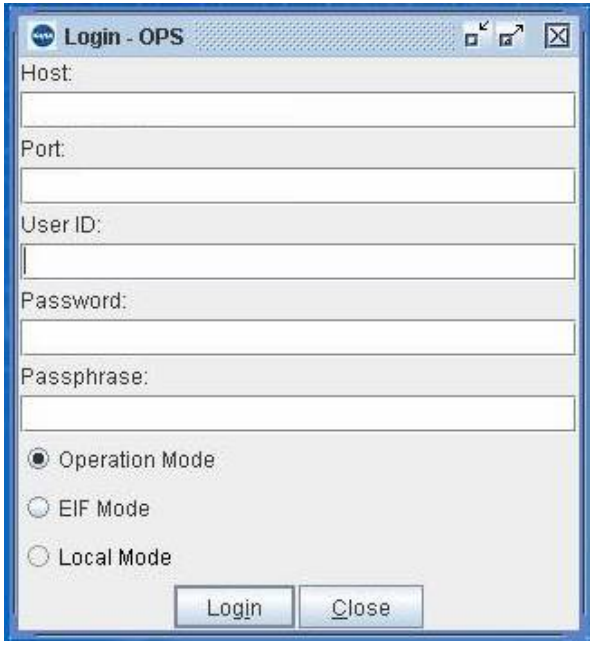
User/Log-in

The Login menu option is available only if the user is not already logged in. Selection of this option causes the User

Login Panel to be displayed. The login process is described in detail in Section 5.

Login Panel

Figure 7.2. User Login Panel



Field Descriptions

Table 7.1. Login Panel Field Descritions

Field	Description
Host	Fully qualified domain name or IP address of the server to connect to. Initially set according to the ServerIPAddress property in the client.prop file.
Port	Transmission Control Protocol (TCP) port number to connect to on the server. Initially set according to the ServerPortNumber property in the client.prop file.
User ID	Account name of the logged-in user. The User ID must be a unique identifier under each SIC.
Password	Encrypted password of user. Each password character appears as an asterisk as it is entered.
Passphrase	Passphrase for the security certificate validation. This is the same passphrase entered when generating a certificate. Each passphrase character appears as an asterisk as it is entered
Mode Selection	The radio selection of Operations Mode, Test (EIF) Mode, or Local Mode controls the login to the selected DBMS. Radio selections are: Operations, Test, Local.

Button Selections

- **Login**– Processes the current user information and selections as described in Section 5.

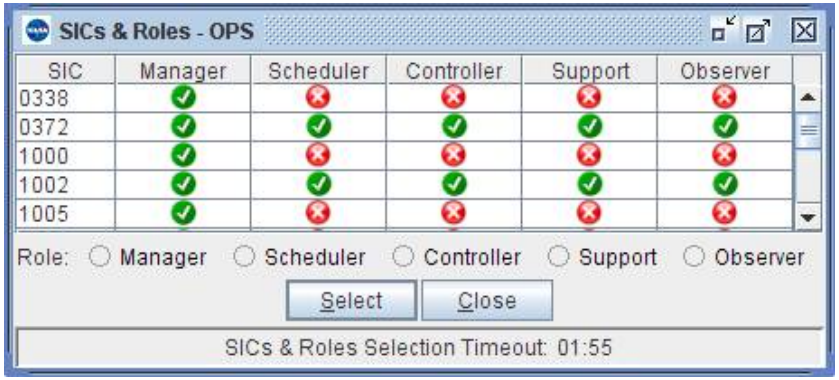
- **Close**– Closes the login panel without logging into SNAS. The main control panel will be displayed with only the User menu available.

User SIC/Role Panel

During the login process after the User ID and password have been verified, a list of SICs the user is authorized to access along with Role(s) authorized for each listed SIC is displayed. Select one or more SICs. The common Role radio button for all selected SICs is dynamically updated with the common roles for all SICs selected. After all desired SICs have been selected, click on the Select button to complete the Login process. If there are no common role(s) for the SICs selected, SNAS will assign the Observer Role to the user and the user needs to acknowledge the assigned role on a confirmation dialog box in order to proceed.

SIC(s) and associated role(s) available for a user were assigned by the Mission Manager(s) for the SIC(s) and authorized by the SNAS O&M administrator.

Figure 7.3. User SIC/Role Panel



Field Descriptions

Table 7.2. User SIC/Role Panel Field Descriptions

Field	Description
Authorized SIC(s)	Returns all Support Identification Codes applicable to the User ID
Role for SIC(s)	Returns all Roles applicable to the User ID for each SIC: MissionManager, MissionScheduler, MissionController, MissonSupport, MissonObserver. The user will select one role which determines the level of access for all SICs.

Button Selections

- **Select**- Selects the chosen SICs/Roles and proceeds with login process

- **Close**- Abandons login process

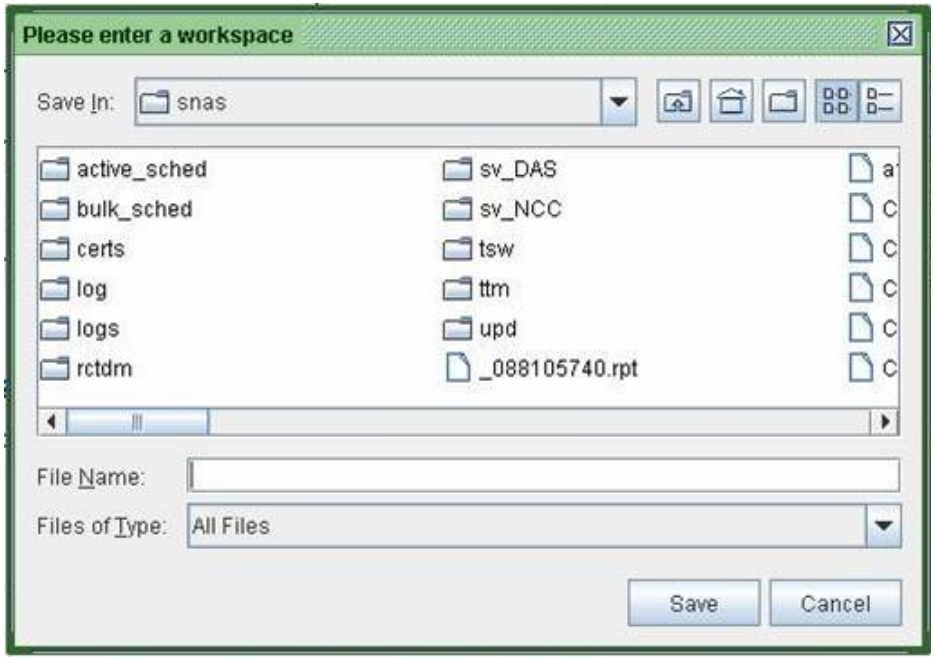
User/Log-out

The Log-out menu option is available only if the user is logged in. Selecting Log-out causes the user to be logged out of and disconnected from the server. After the connection has been terminated and the user logged out, the status of all server processes changes from green Connected to red Disconnected and the Login Panel appears.

Save Workspace

A user's Workspace layout can be saved by selecting this menu item. When activated, the data and the properties of the Schedule Request Summary display, Active Schedule Summary display, Timeline, and the Alert panel, along with the Main Control panel are saved. The user will be prompted by a file chooser panel to enter a file name and its location for storing the Workspace information.

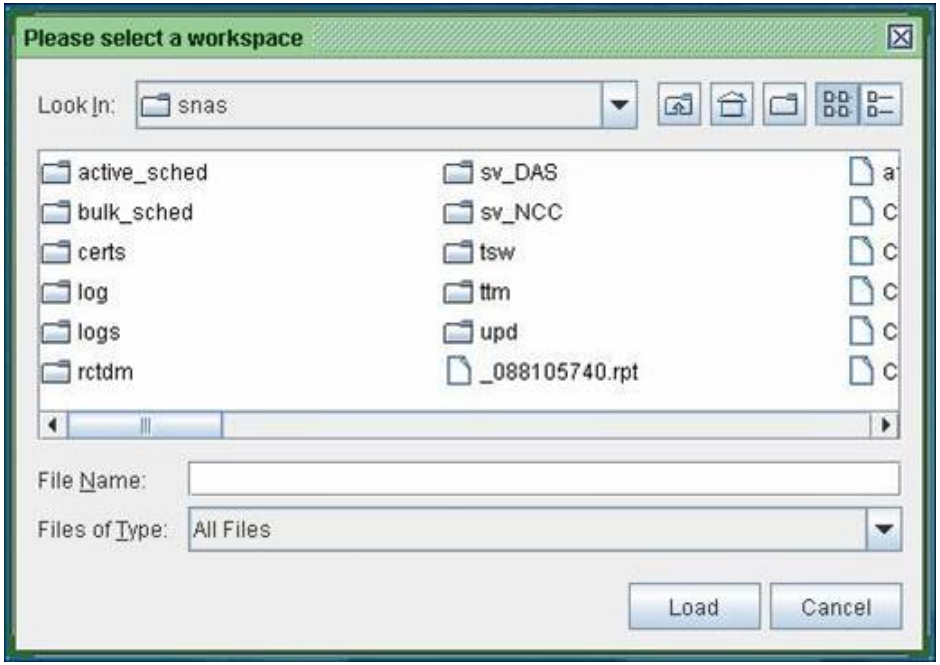
Figure 7.4. Save Workspace File Chooser



Load Workspace

A user can restore the Workspace from any saved Workspace file. Select this menu option and select a saved Workspace file from the file chooser panel. The existing Client Workspace will be replaced with the saved Workspace with all saved data being displayed.

Figure 7.5. Load Workspace File Chooser



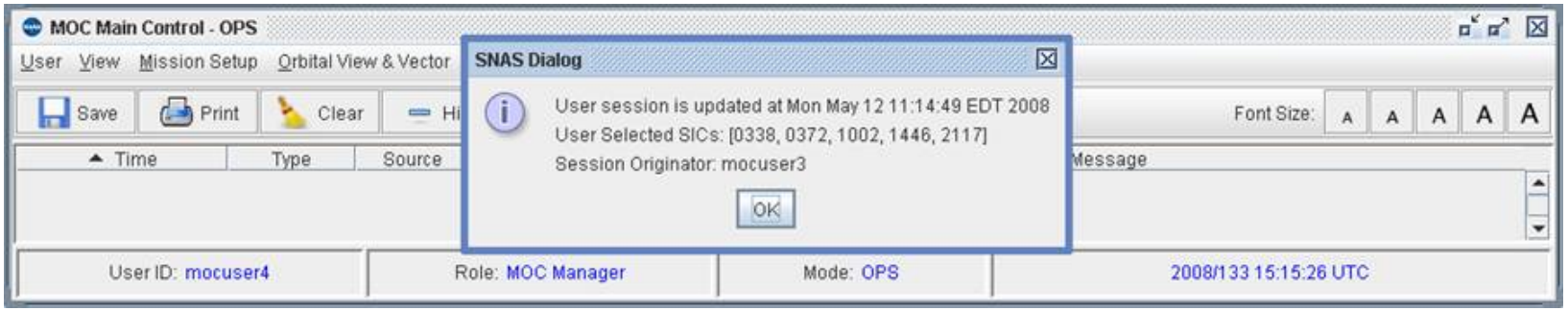
User/Switch User

Switch User process, when initiated, places any currently open panels in the ‘background' and calls the Switch User Panel. The currently open panels cannot be interacted with until the switch user process is completed or terminated. The purpose of switch user is to allow a user with active panels to perform a session ‘handover' to a new user while the panel content remains active. The new user must be authorized for all SICs selected by the old user. This feature may be useful for enabling shift changes or possibly position changes during active events.

Figure 7.6. Switch User Panel

If the Switch User operation is unsuccessful, a message will be displayed and the existing user does not get logged off. If the Switch User is successful, the User ID and the Role displays on the bottom of the Main Control panel are updated with the new user information and a Switch User confirmation dialog box appears.

Figure 7.7. Switch User Confirmation



Field Descriptions

Table 7.3. Switch User Panel Field Descriptions

Field	Description
User ID	User ID of the User attempting the log-in.
Password	Encrypted password of user attempting to log in. Each password character appears as an asterisk as it is entered.
User Role	Return the User Role from the current Logged in User. The new use can choose between the displayed Role or the Manager Role if authorized.

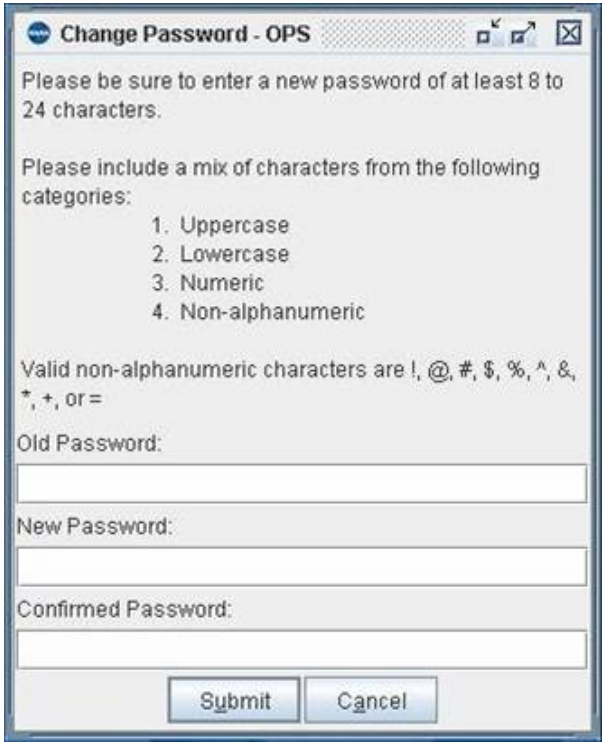
Button Selections

- **Login**- Switches user ID while retaining panel content
- **Cancel**- Closes the Switch User panel and returns to main control panel

User/Change Password

A user can change the password by selecting this menu option. According to the security requirements, passwords are to expire after 60 days. If a user fails to change the password before it expires, the user must contact the SNAS O&M administrator so the password can be reset and the user can be allowed to log in. Upon a successful password change, the user will be notified by a pop-up dialog.

Figure 7.8. Change Password Dialog



Field Descriptions

Table 7.4. MOC Change Password Panel Field Descriptions

Field	Description
Old Password	Encrypted password of user. Each password character appears as an asterisk as it is entered.
New Password	Encrypted password of user. Each password character appears as an asterisk as it is entered.
Confirmed Password	Re-type of the new password entered by user. Each password character appears as an asterisk as it is entered

After entering the user's old password, a new password should be selected that meets the stated criteria. The password must be at least eight characters long and contain at least one character from each of three categories of characters. For example, a password with at least one uppercase, one numeric, and one non-alphanumeric (punctuation mark) character would be a valid password. After entering the new password twice for verification, the user clicks*Submit*to send the request to the server. Clicking*Cancel*causes the user's password not to be changed and for the user to login using the old password. If the old password is expired, the user will be forced to return to the Password Change Dialog and enter a new password.

User/Client Properties

The properties specified in the Client Property file (client.prop) can be viewed and updated by selecting this menu option. Properties are grouped in display. Although all properties can be updated, modifications to many properties can significantly change the way the Client software functions. To save the updated properties, click on the Save button and

a message appears indicating the original file has been renamed to client.prop.YYYY.DDD.HH.MM.SS.GMT and the new properties are now saved to the client.prop file. Clicking on the Close button will simply exit the panel without changing the client.prop file.

If a client-localized Client Property file has been opened, the localized version is read after the configured version. If an update is made, both files are updated with all of the parameters and with the original versions being renamed as indicated above.

Figure 7.9. Client Properties

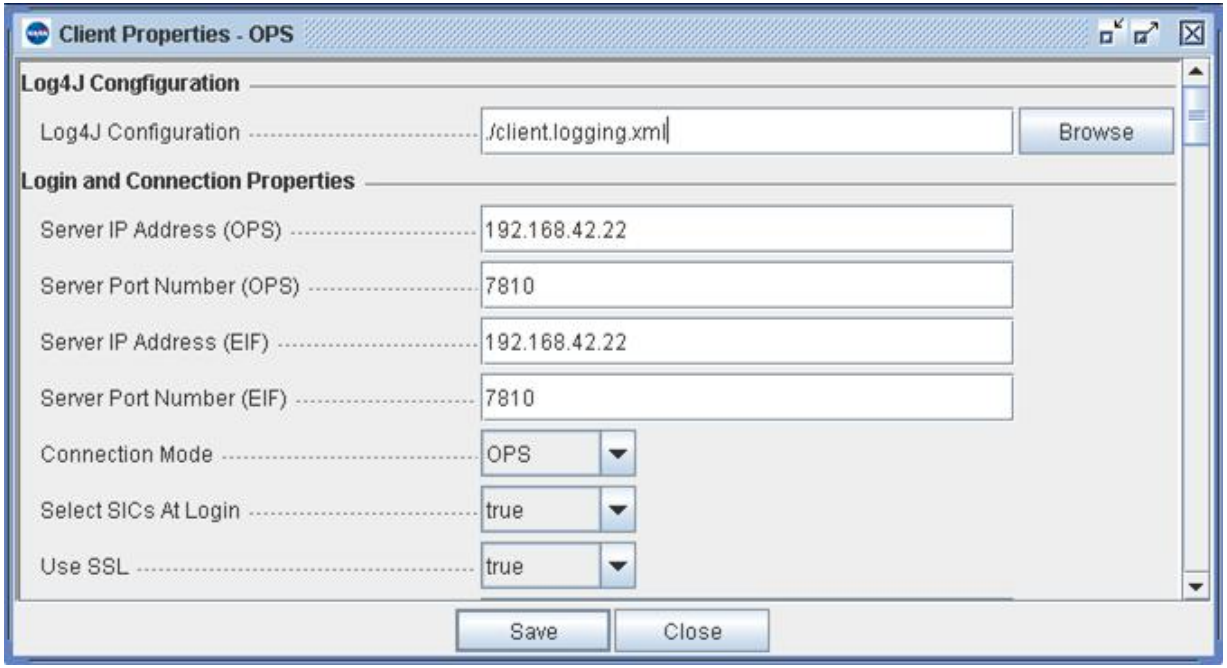
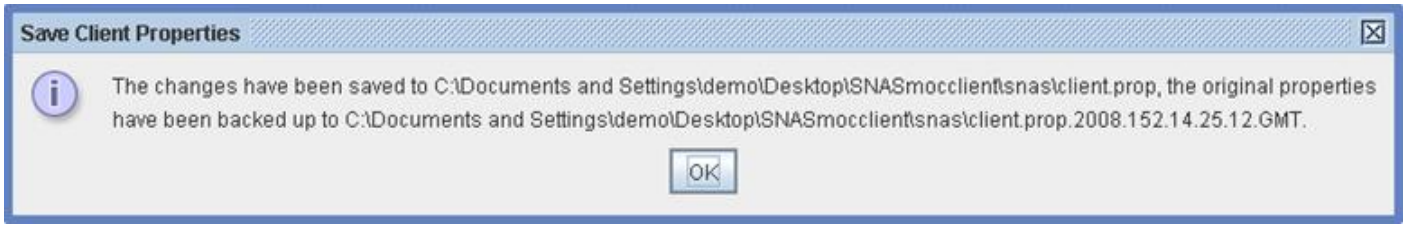


Figure 7.10. Client Property File Save



User/Exit

The Exit menu option is used to exit from the MOC Client application. Upon termination, the user is logged out from the server and the connection is closed.

Chapter 8. View Menu Selections and Panel Descriptions

Table of Contents

View Menu
View/System Clocks
View/System Status Graphics
View/System Status Indicators

View Menu

The View Menu provides the User with a current time and system status.

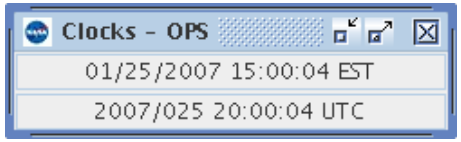
Figure 8.1. View Menu

View/System Clocks

The System Clocks Menu provides clock displays of the current date and time. A sample time display is shown below. Year and Julian days are used for the date display and 24-hour time is used for the time display. Separate clocks are provided for Universal Time (UT) and Local Time. Both clock settings are dependent on the local time and location configuration of the MOC Client workstation.

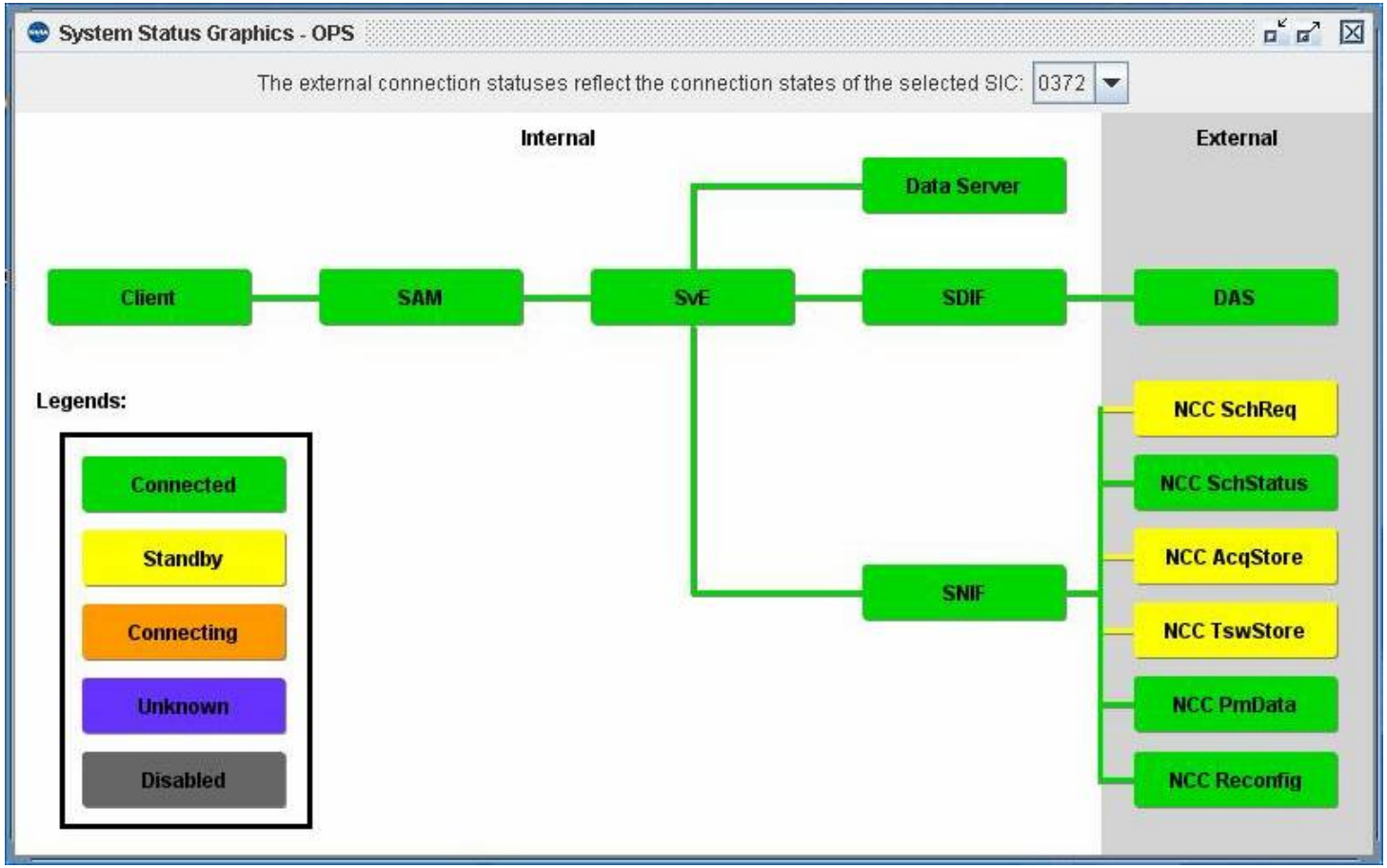
The GMT time is also displayed on the bottom of the Main Control panel.

Figure 8.2. Clocks Panel



View/System Status Graphics

Figure 8.3. Status Indicators Graphic Panel



SNAS software comprises one Client component (MOC or O&M) and five Server components -- SAM, SvE, SNIF, SDIF, and the Data Server. SAM, the Service Access Manager, handles all interfaces with the Client on one end and interfaces with SvE on the other. SvE, the Service Enabler, manages all SNAS Server traffic. SvE interfaces with SAM on one end and with SNIF, SDIF, the Data Server and the SNAS database on the other. SNIF handles all interfaces with NCCDS/ANCC. SDIF handles all interfaces with DAS and HMD DAS. Data Server is responsible for database transactions for heavy-duty processing such as orbit data processing and recurrent scheduling.

Under normal operational condition, all component boxes on the graphical indicator show green, signalling that all component-to-component communications are normal. When a Server component fails, or loses connection with other component(s), the loss of connection is detected and reported back to the Client. The box(es) at the point of loss of communication and beyond will turn red. For example, if SvE fails, although SNIF may still be connected to NCCDS/ANCC, its status will still turn red since the status of SNIF cannot be determined without a fully functional SvE.

The graphical indicator also shows the states of the six TCP ports SNIF uses to communicate with NCCDS/ANCC. The descriptions of the ports and types of messages each port handles are provided in Table 4-3 of the 452-ICD-SN/CSM. There are five distinct connection states for each port. The definitions of the states are provided in the table below.

Table 8.1. SNIF-NCCDS Port Connection States

State	Description
Connected (Green)	Indicates socket connection is established successfully and socket thread is ready for messaging. For NCC service connector, it also indicates database entry is defined and enabled for the target SIC. If service is NCC SchReq, NCC AcqStore, or NCC TswStore service, it indicates the service does not reach the service timeout set by O&M user in schedule connection table.
Standby (Yellow)	Indicates the socket connection is closed, and connector thread is performing periodic task unrelated to connection. For NCC service connector, it also indicates database entry is defined and enabled for the target sic. This state is set for NCC SchReq, NCC AcqStore, or NCC TswStore service if there is no queued request when service timeout is reached. This state is not applicable to NCC SchStatus, NCC PmData and NCC Reconfig services.
Connecting (Orange)	Indicates socket connection is not established yet or was lost due to a socket error. The socket thread is currently attempting to (re)establish the connection, and will automatically retry within pre-defined interval if it fails. For NCC service connector, it also indicates database entry is defined and enabled for the target SIC.
Unknown (Blue)	Indicates there is no schedule or real time connection name entry (NULL in database) defined for the target SIC. This state is also used as default initial state before any usage.
Disabled (Grey)	Indicates there is a database entry already defined in schedule connection or real time connection table for the target SIC, but the status of the entry in the database is "Disabled."

Note

TCP/IP protocol provides the facility for the SNAS component health alert reporting.

View/System Status Indicators

The System Status Indicator is a simplified version of the Graphical Indicator and shows only the SNAS component status.

Figure 8.4. Status Indicators Panel

Chapter 9. Mission Setup Menu Selections and Panel Descriptions

Table of Contents

Mission Setup Menu
Mission Setup/Add User Account
Field Descriptions
Button Selections
Mission Setup/Modify User Account

- Field Descriptions
- Button Selections

Mission Setup/Mission Spacecraft Characteristics
- Mission Setup/Mission Spacecraft Characteristics/Spacecraft Characteristics
- Mission Setup/Mission Spacecraft Characteristics/User Interface Channels

Mission Setup/EPS Setup
- EPS FTP Setup Example

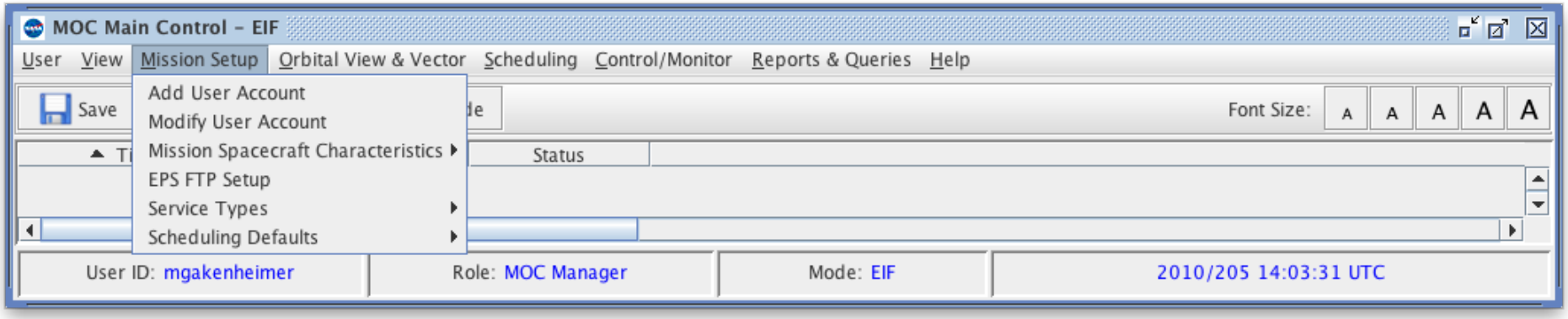
Mission Setup/Service Types
- Mission Setup/Service Types/Available Service Specification Codes (SSCs)
- Mission Setup/Service Type/DAS Service Specification Codes (SSCs)
- Mission Setup/Service Types/NCC Service Specification Codes (SSCs)

Mission Setup/Scheduling Defaults
- Mission Setup/Scheduling Defaults/Default Scheduling Parameters
- Mission Setup/Scheduling Defaults/Define Prototype Events
- Mission Setup/Scheduling Defaults/RS Edit Super Protoype
- Mission Setup/Scheduling Defaults/User Defined TDRS Constraints
- Mission Setup/Scheduling Defaults/Orbital Parameters
- Mission Setup/Scheduling Defaults/Define TSW Set ID
- Mission Setup/Scheduling Defaults/Define Orbital Constraints
- Mission Setup/Scheduling Defaults/Available Prototype Events

Mission Setup Menu

The mission setup menu is used to maintain user accounts and to configure the mission parameters. The available operations are add and modify user accounts, create and maintain mission characteristics and interface channels, EPS setup, SSC creation and maintenance, and creation and maintenance of scheduling parameters.

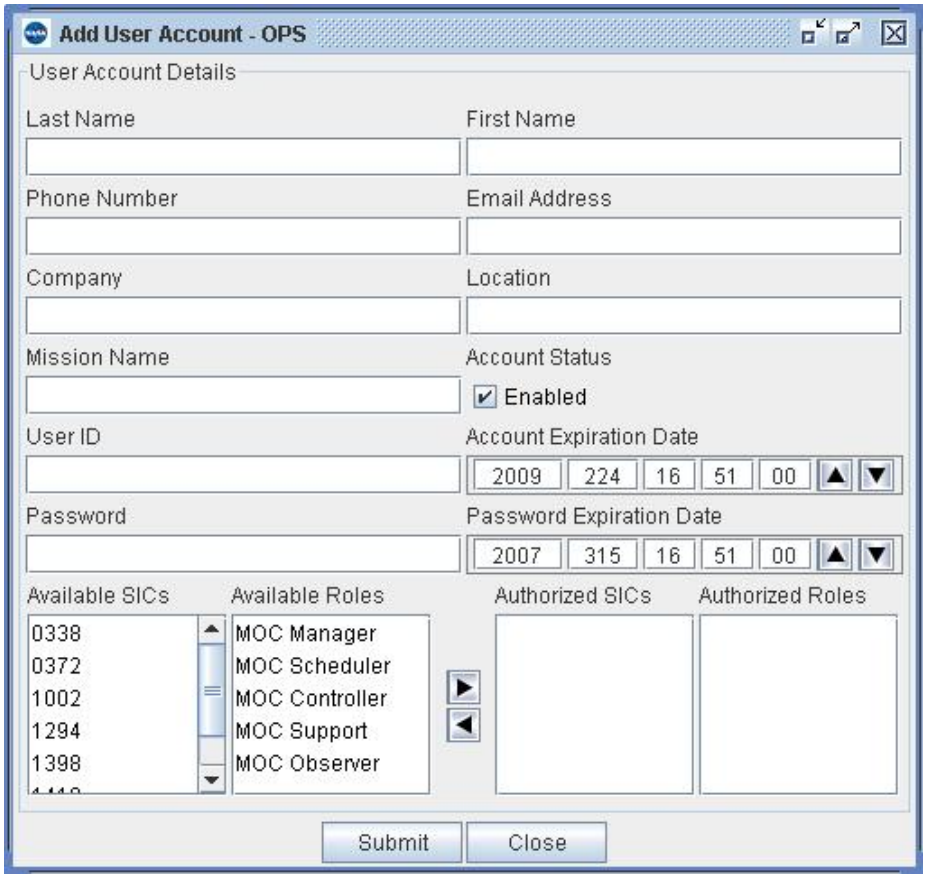
Figure 9.1. Mission Setup Menu



Mission Setup/Add User Account

This menu option is used by a Mission Manager to submit a new user account request to O&M administrator for approval to establish a new user account for one of more SICs authorized for the Mission Manager. Mission Manager can submit Add User request one at a time. O&M will either approve or reject each request and the O& action/response will be displayed on the Squawk Box. The new user account is established when an approval message appears on the Squawk Box.

Figure 9.2. Add User Account Panel



Field Descriptions

Table 9.1. Add User Account Panel Field Descriptions

Field	Description
Last Name	Last name of the user being added
First Name	First name of the user being added
Phone Number	Phone number of the user being added
Email Address	Email address of the user being added
Company	Employer of the user being added

Location	Location of user's MOC
Mission Name	Name of mission
Account Status	Unchecking 'Enabled' disables the user account and does not allow the user to log in to SNAS MOC Client
User ID	Login ID, as requested by the MOC Mission Manager, for user being added
Account Expiration Date	Date user's account will expire; expiration time span set by SNAS DBA
Password	Initial Login password for user being added
Password Expiration Date	Date user's password will expire and require the user to change their password; expiration time span set by SNAS DBA
Available SICs/Roles	SICs and the Roles that the Mission Manager is authorized for and are available to be assigned to the user.
Authorized SICs/Roles	SICs and the associated Roles for which the user will be authorized for SNAS. To select a SIC and its associated Roles, highlight the SIC and desired Roles in the Available SICs/Roles boxes and click on the right-pointing arrow. The selected SIC and Roles should now be added to the Authorized SICs/Roles boxes. To de-select a SIC and its associated Roles, highlight the SIC in the Authorized SICs box and click on the left-pointing arrow. The selected SIC and its Roles will now be removed from the Authorized SICs/Roles boxes.

Button Selections

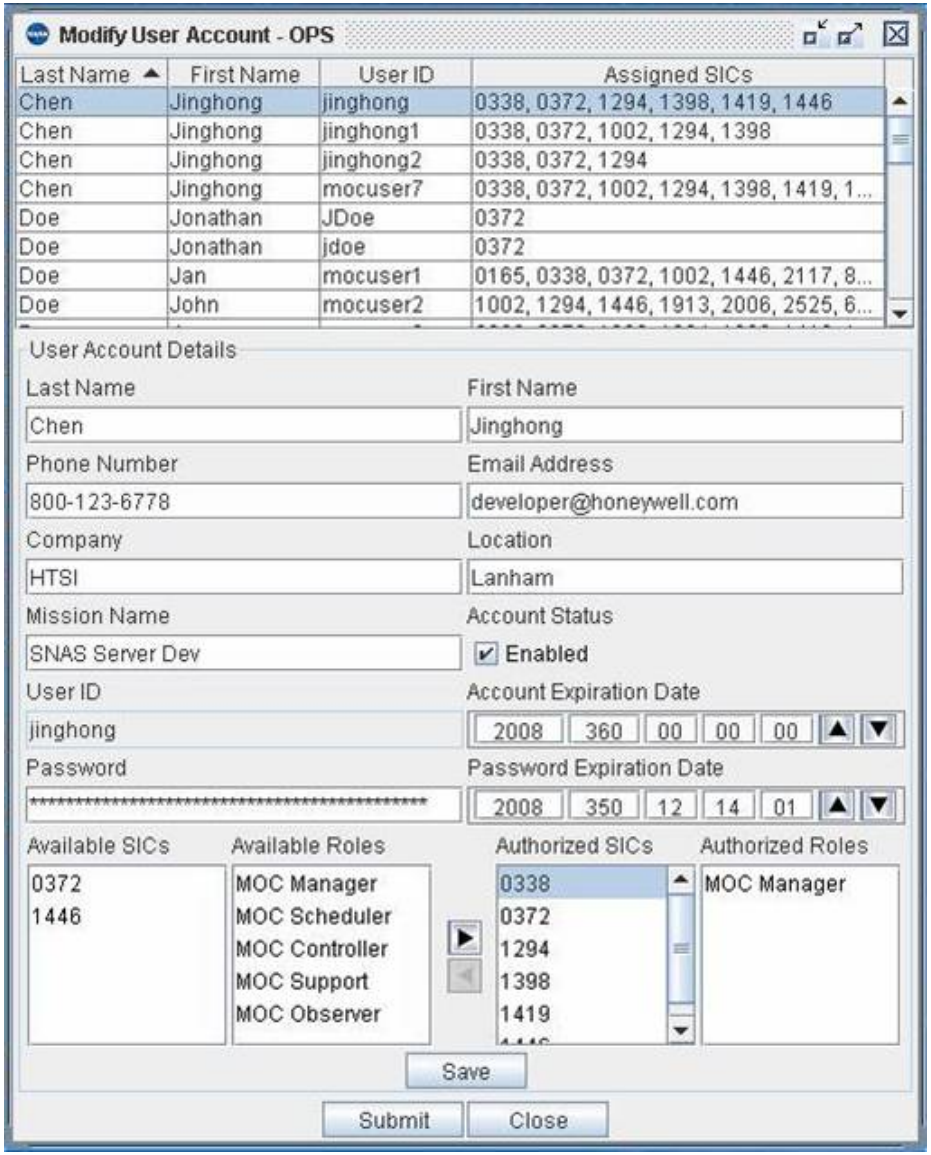
- **Submit**- Submit the Add User request to O&M.
- **Close**- Closes the Add User panel without submitting the request.

Mission Setup/Modify User Account

The Modify User Account panel contains two sections. The top section shows all users in the database that are authorized to one or more of the SICs the Mission Manager is authorized for. The bottom section contain detailed information on the selected user and is similar to the Add User panel described above.

As in the Add User operation, a Modify User request by the Mission Manager also requires O&M action. O&M can either approve or reject a Modify User quest and the O&M action/response will be displayed on the Squawk Box. The Modified User account becomes effective when an approval message appears on the Squawk Box.

Figure 9.3. Modify User Account Panel



Field Descriptions

Table 9.2. Modify User Account Panel Field Descriptions

Field	Description
Last Name	Last name of the user being updated
First Name	First name of the user being updated
Phone Number	Phone number of the user being updated
Email Address	Email address of the user being updated

Company	Employer of the user being updated
Location	Location of user's MOC
Mission Name	Name of mission
Account Status	Unchecking 'Enabled' disables the user account and does not allow the user to login to SNAS MOC client
User ID	Login ID for user being updated
Account Expiration Date	Date user's account will expire; expiration time span set by SNAS DBA
Password	Encrypted Login password for user being updated
Password Expiration Date	Date user's password will expire and require the user to change their password; expiration time span set by SNAS DBA
Available SICs/Roles	SICs and the Roles that the Mission Manager is authorized for and are available to be assigned to the user.
Authorized SICs/Roles	SICs and the associated Roles for which the user will be authorized for SNAS. To select a SIC and its associated Roles, highlight the SIC and desired Roles in the Available SICs/Roles boxes and click on the right-pointing arrow. The selected SIC and Roles should now be added to the Authorized SICs/Roles boxes. To de-select a SIC and its associated Roles, highlight the SIC in the Authorized SICs box and click on the left-pointing arrow. The selected SIC and its Roles will now be removed from the Authorized SICs/Roles boxes. If the user has been authorized for SICs not on the Mission Manager's authorization list, those SICs/Roles will still show on the Authorized SICs/Roles boxes and the Mission Manager will not be able to change them.

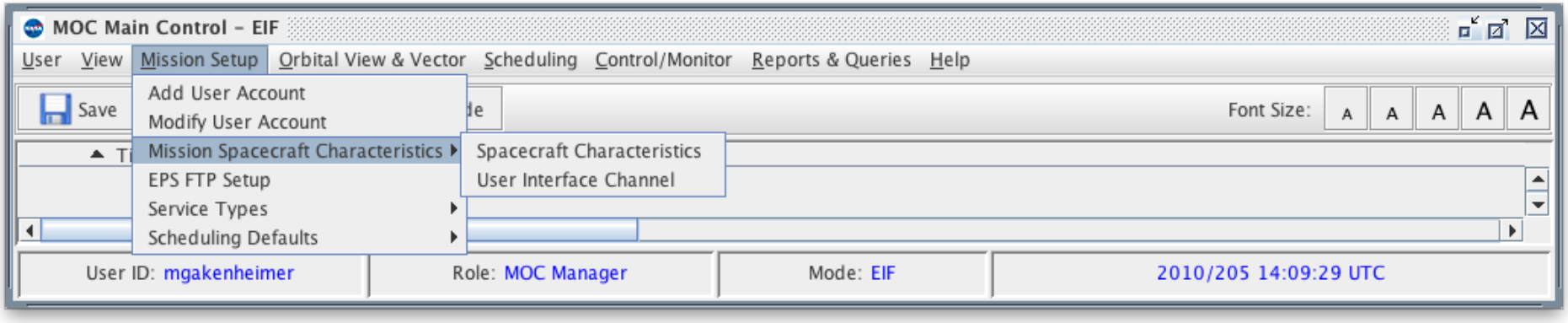
Button Selections

- **Save**- Save the changes made.
- **Submit**- Submit only the saved changes to O&M.
- **Close**- Closes the Modify User panel without submitting the request.

Mission Setup/Mission Spacecraft Characteristics

This menu option includes two sub-items to be used to set up the mission/spacecraft characteristics and the user interface channels.

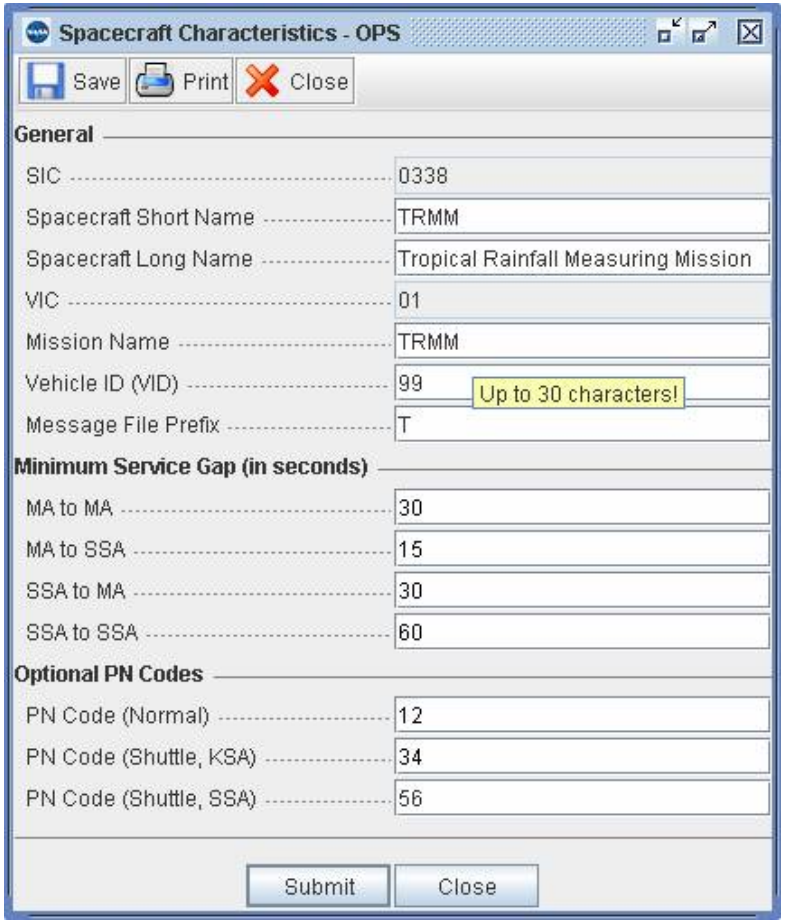
Figure 9.4. Mission Setup/Mission Spacecraft Characteristics Menu



Mission Setup/Mission Spacecraft Characteristics/Spacecraft Characteristics

This menu option is intended for the Mission Manager to define and maintain the mission's characteristics. When this menu option is selected the Mission Manager selects a SIC from the ensuring SIC Selection panel and the Mission Spacecraft Characteristics panel appears. Except for the SIC and VIC fields, all other text boxes are updateable. SIC and VIC are preset by O&M adminstrator. Move the cursor over a box and the valid value for the parameter is displayed shortly.

Figure 9.5. Spacecraft Characteristics Panel



Field Descriptions

Table 9.3. Spacecraft Characteristics Panel Field Descriptions

Field	Description
SIC	Spacecraft Identification Code for spacecraft. Pre-set.
Spacecraft Short Name	Text entry field for the abbreviated spacecraft name (e.g. HST, UARS).
Spacecraft Long Name	Text entry field for the extended mission/spacecraft name (e.g., Hubble Space Telescope or Upper Atmosphere Research Satellite).
Vehicle Identification Code (VIC)	Text entry field for the two-character VIC. Pre-set.
Mission Name	An arbitrary name
Vehicle ID (VID)	Text entry field for the three-character octal VID, which is used to identify the spacecraft with which the SN data block is associated.
Message File Prefix	A single alphabetical character to be used for file name identification

Minimum Service Gaps: MA to MA	Minimum Service Gaps. These text entry values specify, in seconds, the minimum gap allowable between any two service types for the user's mission. These values are used in two ways: 1. The user should inform the NCCDS to store these values in their database, which allows NCCDS to keep the mission's services separated by the specified gap, and; 2. The Recurrent Scheduling (RS) process will only create SARs where the specified gap can be maintained, taking into account the flexibilities specified in the SAR (e.g., minimum duration, service plus and minus tolerance). Setting for the minimum gap in sections to switch between the specified types of SN services. MA to MA (Multiple Access). Displays the minimum time gap between these services that the NCCDS enforces for the mission.
Minimum Service Gaps: MA to SA	Minimum Service Gaps. These text entry values specify, in seconds, the minimum gap allowable between any two service types for the user's mission. These values are used in two ways: 1. The user should inform the NCCDS to store these values in their database, which allows NCCDS to keep the mission's services separated by the specified gap, and; 2. The Recurrent Scheduling (RS) process will only create SARs where the specified gap can be maintained, taking into account the flexibilities specified in the SAR (e.g., minimum duration, service plus and minus tolerance). Setting for the minimum gap in sections to switch between the specified types of SN services. MA to SA (Single Access). Displays the minimum time gap between these services that the NCCDS enforces for the mission.
Minimum Service Gaps: SA to SA	Minimum Service Gaps. These text entry values specify, in seconds, the minimum gap allowable between any two service types for the user's mission. These values are used in two ways: 1. The user should inform the NCCDS to store these values in their database, which allows NCCDS to keep the mission's services separated by the specified gap, and; 2. The Recurrent Scheduling (RS) process will only create SARs where the specified gap can be maintained, taking into account the flexibilities specified in the SAR (e.g., minimum duration, service plus and minus tolerance). Setting for the minimum gap in sections to switch between the specified types of SN services. SA to SA. Displays the minimum time gap between these services that the NCCDS enforces for the mission.
Minimum Service Gaps: SA to MA	Minimum Service Gaps. These text entry values specify, in seconds, the minimum gap allowable between any two service types for the user's mission. These values are used in two ways: 1. The user should inform the NCCDS to store these values in their database, which allows NCCDS to keep the mission's services separated by the specified gap, and; 2. The Recurrent Scheduling (RS) process will only create SARs where the specified gap can be maintained, taking into account the flexibilities specified in the SAR (e.g., minimum duration, service plus and minus tolerance). Setting for the minimum gap in sections to switch between the specified types of SN services. SA to MA. Displays the minimum time gap between these services that the NCCDS enforces for the mission.
Optional PN Codes (Normal)	Optional PN Codes. Text entry fields used to assign the Pseudorandom Noise (PN) codes for various service types. The relevant codes are required if transmissions of USMs are to be performed for the EPS user. PN Code setting for normal.
Optional PN Codes (Shuttle KSA)	Optional PN Codes. Text entry fields used to assign the Pseudorandom Noise (PN) codes for various service types. The relevant codes are required if transmissions of USMs are to be performed for the EPS user. PN Code setting for KSA supporting Shuttle missions.

Optional PN Codes (Shuttle SSA)	Optional PN Codes. Text entry fields used to assign the Pseudorandom Noise (PN) codes for various service types. The relevant codes are required if transmissions of USMs are to be performed for the EPS user. PN Code setting for SSA supporting Shuttle missions.

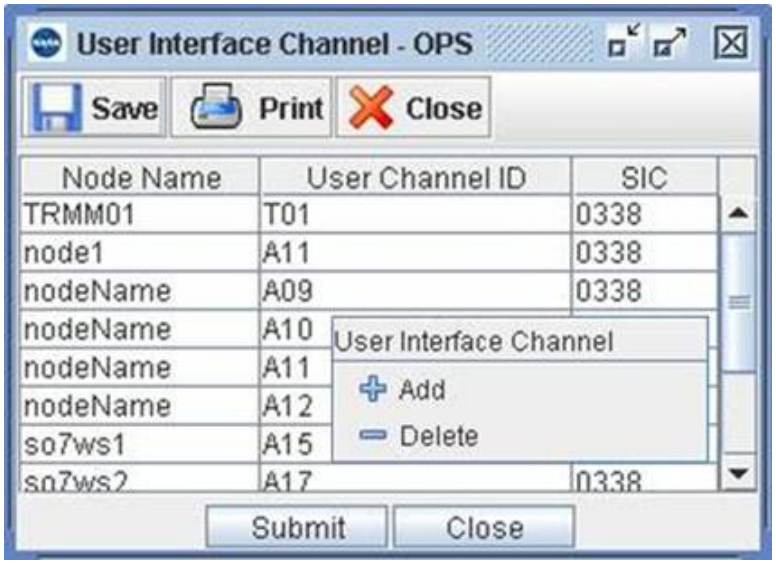
Button Selections

- **Save**– Saves the spacecraft characteristics data to a file
- **Print**– Prints the spacecraft characteristics data
- **Submit**– Submits spacecraft characteristics updates to SNAS serever and returns to the Main Control panel
- **Cancel**– Discards changes and returns to the main control panel

Mission Setup/Mission Spacecraft Characteristics/User Interface Channels

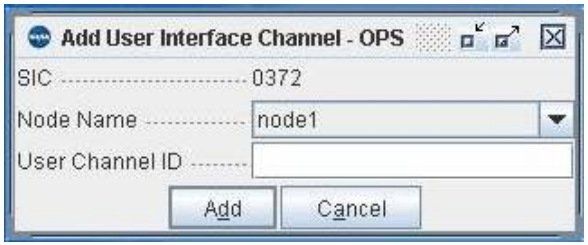
This panel is used to set up and update User Interface Channels. When selecting this menu option, a SIC selection panel appears. Select a target SIC and click on Select, a list of defined User Interface Channel appears. If executing this menu option, at least one EPS node for the SIC needs to be defined for this menu option to work properly.

Figure 9.6. User Interface Channels Panel



A new User Interface Channel can be added and an existing UIC can be deleted. To add a new UIC, move the cursor to the UIC panel and right click. A menu with two items: Add and Delete appears. Click on Add and an Add UIC panel appears. Select an EPS node from the list and enter a 3-character name for the UIC and click on Add. The new UIC now shows up on the UIC panel. To delete an existing UIC, select the channel on the UIC panel, right click and then select Delete. Confirm the delete on the pop-up confirmation panel and the to-be-deleted channel is removed from the UIC panel. After all changes are made, click on the Submit button to forward the saved changes to SNAS server for database updates.

Figure 9.7. Add User Interface Channel Panel



Field Descriptions

Table 9.4. User Interface Channels Panel Field Descriptions

Field	Description
Node Name	A defined EPS Node name for the selected SIC
User Channel ID.	User interface channel ID. Text entry field used to enter such a code. Format is three characters where the first character is an alpha character followed by two numeric characters (e.g., Ann).
SIC	Spacecraft Identification Code referenced.

Button Selections

- **Save**– Saves the user interface channels data to a file
- **Print**– Prints the user interface channels data
- **Close**– Closes User Interface Channels panel and returns to main control panel
- **Submit**- Submit the changes to server for database updates
- **Add (Add UIC panel)**- Add the newly created UIC to the displayed UIC list

Mission Setup/EPS Setup

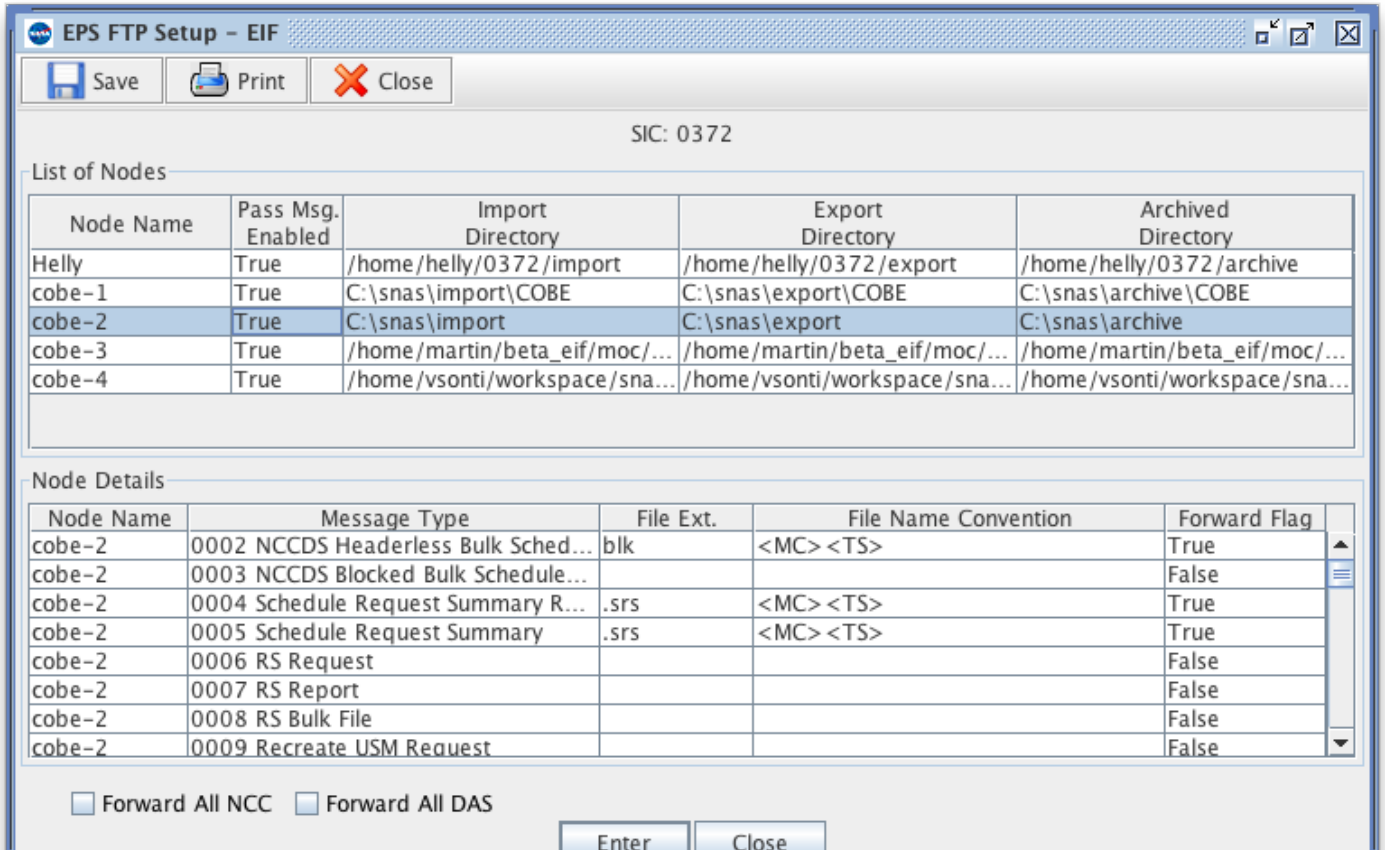
SNAS supports both an SFTP and TCP/IP interaction with an External Processing System (EPS). For FTP interaction, SNAS imports, exports and archives files as defined in the SNAS/ EPS ICD in a locally defined directory for the external processing system to handle the files from there. The SNAS FTP configuration for handling these files is described in this section. For TCP/IP, the MOC Client passes through streams of data both from an external processing system to the SNAS servers and from the SNAS servers to an external processing system as defined in the SNAS/EPS ICD. For TCP/IP, the external processing interface requirements are defined in the client.prop and the EPS setup defined in this section does not apply. There is no restriction on using both EPS setups concurrently. (One difference between FTP and TCP/IP is that FTP and GUI utilize the SNAS request ID number sequence, unique for each SIC, while requests submitted by TCP/IP pass through the system using request IDs established by the user. It is the user's responsibility to keep these number sequences separate as SNAS and NCCDS cannot handle redundant numbers for any SIC.)

EPS is designed to allow automonous operations of importing requests and saving reponses to disk files. EPS handles both NCCDS and DAS requests and responses. EPS FTP is controlled by the EpsEnabled flag and the EpsImportDirPollTime specified in the Client.prop file (Chapter 3). When the EpsEnabled flag is set to true, the SNAS Client will, according to the interval specified by the EpsImportDirPollTime property, periodically poll the import directory established for each enabled node and import the files that conform with an enabled-node, forward-designated message types. (For EPS TCP/IP, TCP/IP is enabled by the EnableEpsTcpIp flag. Scheduling and real-time services for an active TCP/IP connection are enabled by EnableSchedulingServices and EnableRealtimeServices flags respectively when EnableEpsTcpIp is True. Unlike FTP, there are no forward flags for specific message types. Also the TCP/IP user must be aware of how to use the six ports that handle specific functions of scheduling and real-time operations and recognize that there is a seventh port designated to handle reports.)

An example of how to setup EPS FTP node is given at the end of this section.

The EPS FTP Setup panel has two sections to facilitate EPS FTP management by the Mission Manager. The top section shows a list of nodes defined in the SNAS database for the SIC. Click on a node in the top section and detailed information on the node is displayed on the bottom Node Details section. Forward Flag for all NCC message types can be set to true by checking "Forward All NCC" box. Similarly, Forward Flag for all DAS message types can be set to true by checking "Forward All DAS" box.

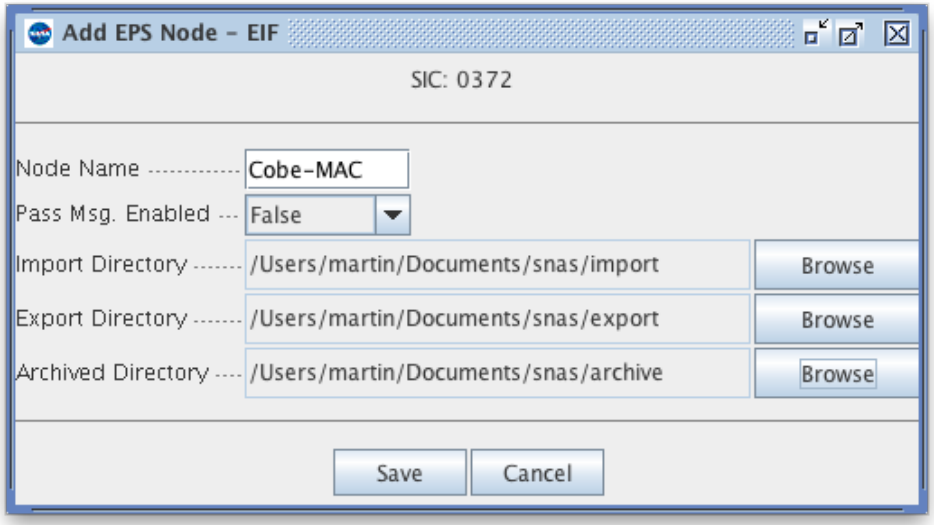
Figure 9.8. EPS Setup Panel



To add a new node, move the cursor to the top section and right click. Left click the Add EPS Node option and a panel for defining the new node (see below) appears. To delete a node, click on the target node and right click. Left click on the Delete EPS Node option. To modify a node, click on the target node and right click. Left click the Modify EPS Node option and a panel for modifying the node property appears. The panels for adding a new node and modifying an existing node are similar. After adding or modifying each node, click the Save button to save the updates for later submission to the SNAS server. After all node changes and node detail changes have been made, click the Enter button to submit all changes to the SNAS server.

EPS FTP node definition includes a node name (character string), Pass Message Enabled (True for enabling), and full path names for import directory, export directory and archive cirectory, respectively.

Figure 9.9. Add EPS Node Panel



After a new node is added, click on the node and a list of available message types is displayed on the Node Details section of the panel. To update the setup for a message type, click the message type and right click, then click on Modify EPS Node Details. Enter required FIle Extension, select FIle Name Convention components, select True for Forward Flag. Click on the Save button to save the node details for later submission to the SNAS server.

After all node and node detail changes have been made, click the Enter button to submit all changes to the SNAS server. To activate the node or node detail changes, Exit SNAS MOC Client and log back in.

Figure 9.10. EPS Setup Panel (for Updating Node Details)

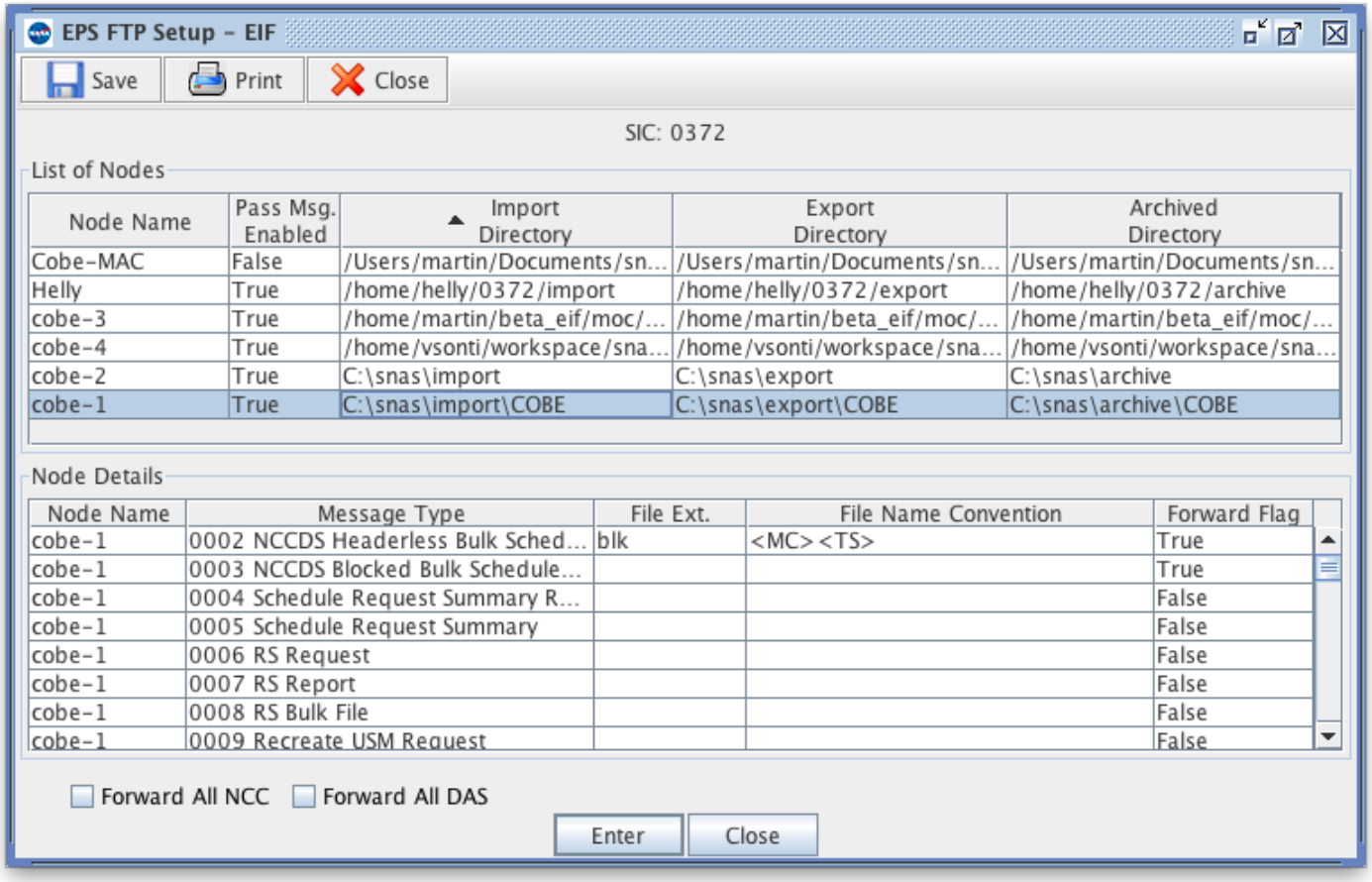
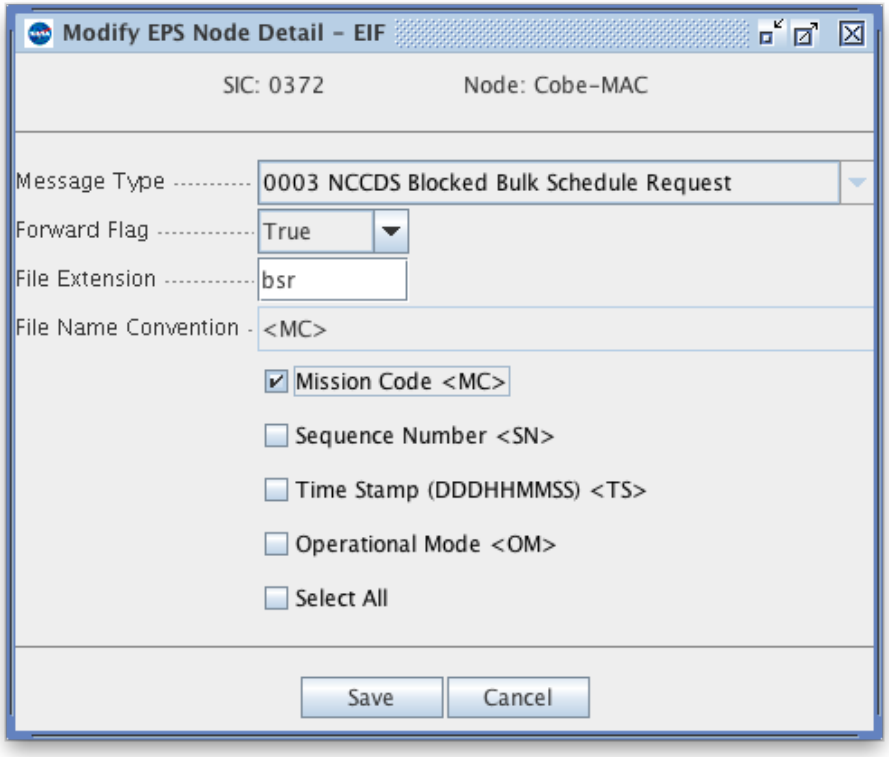


Figure 9.11. EPS Node Details Panel



For EPS FTP interface to execute successfully, it is critical to set up EPS nodes and their details properly. It is recommended that each node has its own set of import, export and archive subdirectories, and each data type within a node should have a unique file extension with the following exceptions: Various report requests (message type 9340) can share the same file extension. Also, message types 0310 and 0315 can share the same file extension. Various orbital files (message types 9704, 9705, 9710, 9925) can share the same file extension. Various GCMR files (message types 9803 - 9808) can share the same file extension.

Field Descriptions

Table 9.5. EPS Node Setup Panel Field Descriptions

Field	Descriptions
Node Parameters	
Node Name	Node identifier - a character string
Pass Msg Enabled	True if passing messages is to be performed. When this flag is set to True, EPS processing for all selected message types -- with True in Forward Flag -- for the node is enabled. When this flag is set to False, no EPS processing is performed for this node regardless the values of Forward Flags for any message types.
Import Directory	Directory where the files to be imported are kept
Export Directory	Directory where the exported files are to be kept
Archived Directory	Directory where successfully imported files are to be moved into

Node Detail Parameters	
Message Type	Type of message to be processed for this node
File Ext.	File extension for local file naming (include a "." if the export file name should include that character)
File Name Convention	The list of file naming conventions to be used for file identifications (SNAS only checks for the file extension on import files but the file name convention needs a non-blank input, <MC> is recommended)
Forward Flag	True if this type of message is selected for automated processing for this EPS node when the EPS is enabled by the Client Property file

Button Selections

- **Enter (EPS FTP Setup)**– Submits changes to server for database updates

- **Close (EPS FTP Setup)**– Discards changes and closes the EPS Node Setup panel.
- **Save (EPS FTP Setup)** - Writes a summary of the EPS FTP node and node detail setup
- **Print (EPS FTP Setup)** - Prints a summary of the EPS FTP node and node detail setup

- **Save (EPS Node & Details)**– Save changes for later submission to server

- **Cancel (EPS Node & Details)**– Discards changes to node info and return to EPS FTP Setup

EPS FTP Setup Example

Here is an example of how to set up an EPS node (node1) for an NCCDS SIC (5555, pre-defined with a 'Z' as its Mission File Prefix in Spacecraft Characteristics) to automatically import Headerless Bulk Schedule Request files (0002) with . blk extension and save UPDs (91/01) to files starting with a mission code followed by a time stamp and .upd extensions:

1. Select EPS FTP Setup menu option from the Main Control panel.
2. On the ensuing SIC Selection panel, select SIC **5555**and click on the Select button.
3. On the EPS Setup panel, move the cursor to the List of Nodes section and right click. Left click on Add EPS Node.
4. On the Add EPS Node panel, enter **node1**as Node Name. Select and **True** for Pass Message Enabled.
5. Click on the Browse button for each of the three directories and select a desired directory for import, export and archive, respectively for the EPS node node1 for SIC 5555.
6. Click the Save button. The new node node1 should now appear on the EPS Setup panel.
7. Click on the node just created. A list of available NCCDS message types available for EPS processing is displayed in the Node Details section of the EPS FTP Setup panel.
8. Select **0002 NCCDS Headerless Bulk Schedule Request** from the Node Details section and right click. Click on Modify EPS Node Details.
9. On the EPS Node Details panel, enter **blk** in File Extension box and select **True** for Forward Flag. Click the Save button to save the changes for later submission to SNAS server. Note the Forward Flag for 0002 type on the Node Details section shows True.
10. Now select **91/01 UPD** from the Node Details section and right click. Click on Modify EPS Node Details.
11. On the EPS Node Details panel, select **True** for Forward Flag, enter **.upd** in File Extension box and check the **Mission Code <MC>** and **Time Stamp <TS>** check boxes. Click the Save button to save the changes for later submission to SNAS server. Note the Forward Flag for 91/01 type on the Node Details section shows True.
12. Click on the Enter button on the EPS Setup panel. EPS setup is successful if no critical alerts appear on the Alert panel.
13. On the Main Control panel, select EPS FTP Setup menu option again and select SIC **5555**. Select the EPS node **node1** from the List of Nodes. The 0002 and 92/01 should be the only two types with True status in the Forward Flag field on the

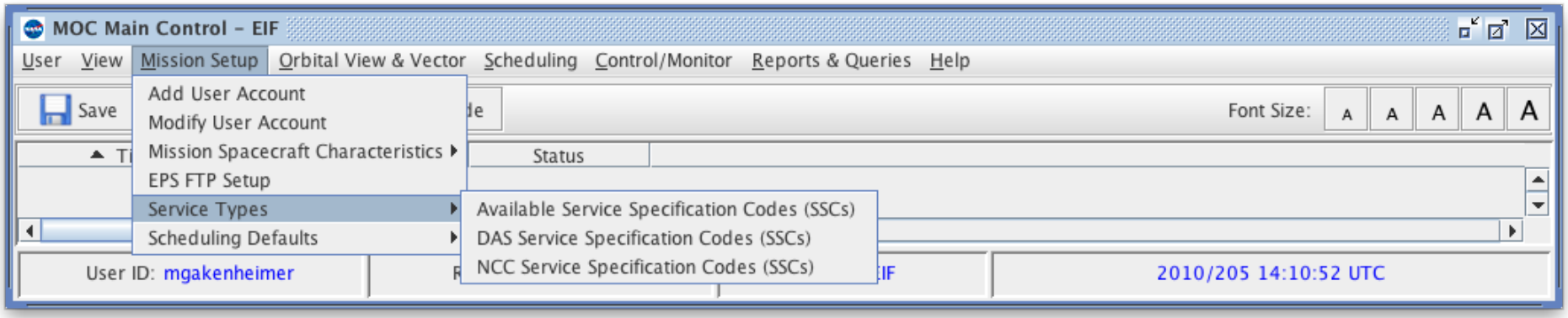
Node Details display.

14. Exit the client software. Change the **EpsEnabled** flag in the client.prop file to **true**. Restart the client software and log back in with SIC 5555. Any file with a file name of *.blk located in the import directory specified in Step 5 will be processed as a file containing "Headerless" NCCDS schedule requests. All UPDs received for SIC 5555 will be written, in native form, to disk files with names of ZDDDHHMMSS.upd in the export directory specified in Step 5.

Mission Setup/Service Types

This menu option allows the Mission Manager to create and maintain Service Specifications Codes (SSCs). There are three sub-menu options. One to be used to view a list of all available SSCs for the SICs the Mission Manager logged on with and the other two for separately managing the NCC and DAS SSCs.

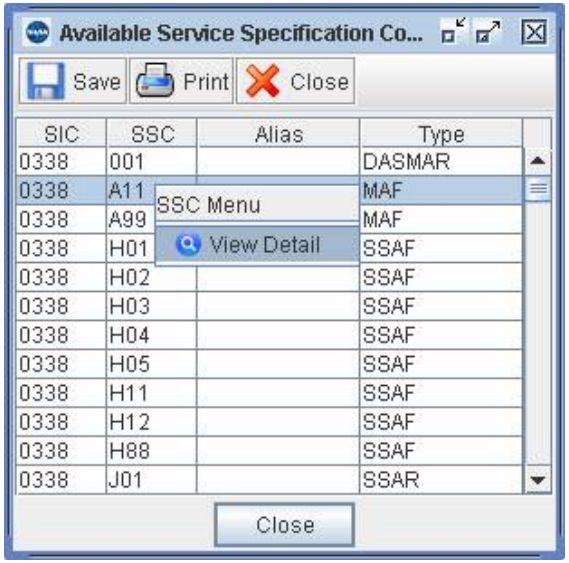
Figure 9.12. Mission Setup/Service Types Menu



Mission Setup/Service Types/Available Service Specification Codes (SSCs)

When activated, this menu option displays a list of all SSCs stored in the SNAS database for all SICs the user is logged in to. The user can view the details of any of the listed SSC by selecting the SSC, right click, the left click on View Details. An SSC Parameter panel for the selected SSC appears. Refer to DAS SSCs and NCCDS SSCs sections for examples of the SSC Parameter panels.

Figure 9.13. Available Service Specification Codes Panel



Field Descriptions

Table 9.6. Available Service Specification Codes Panel Field Descriptions

Field	Description
SSC	Service Specification Code.
SSC Alias	Alias name for the SSC. For information only.
Service Type	Associated service type for the SSC.

Button Selections

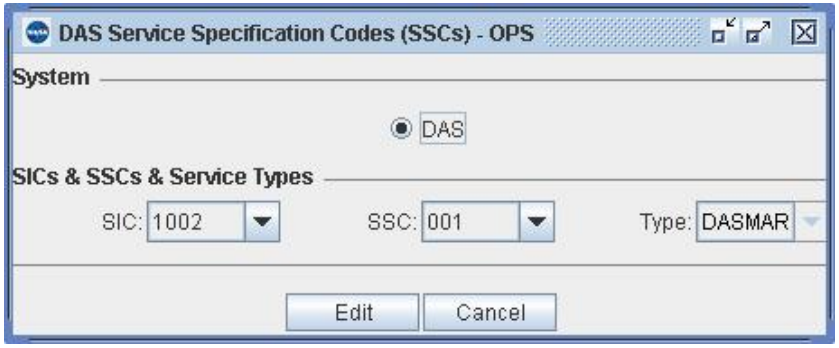
- Right clicking on a selected SSC and then click on the View Detail allows the user to view SSC details and will open the appropriate SSC Parameter panel. Sample SSC Parameter panels for all DAS and NCCDS services are shown in this section.

- **Close**– Closes Available SSCs Panel and returns to Main Control panel

Mission Setup/Service Type/DAS Service Specification Codes (SSCs)

The DAS Service Specification Codes (SSCs) menu option allows the user to edit an existing DAS SSC and the associated parameter values. Only a user with Mission Manager Role authorization can select this menu option. Editing a DAS SSC by a Mission Manager on the MOC client does not require O&M approval.

Figure 9.14. Edit SSCs Panel



When the DAS SSC menu option is selected, a panel to select SIC and SSC appears. Select a SIC, select the desired SSC and click on the Edit button. There's only one service type, DASMAR, available for DAS scheduling. An ensuing DAS SSCs panel appears. Parameters for DAS SSCs are divided into five groups -- General, Q-Channel, Data Format, I-Channel Data Format, and Q-Channel Data Format. Parameters in each group are displayed on a separate tab within the DAS SSCs panel. To enter/update parameters of a group, click on the tab and the parameters for the group appear.

In general, there are two types of parameters: pre-defined available choices shown in combination boxes and user-entered values in text boxes. For a text box, move the cursor to the box and the valid range/value for the box will appear.

Descriptions of all DAS SSC parameters are provided in the 452-ICD-DAS/SNAS.

Figure 9.15. DAS SSC Panel General Tab

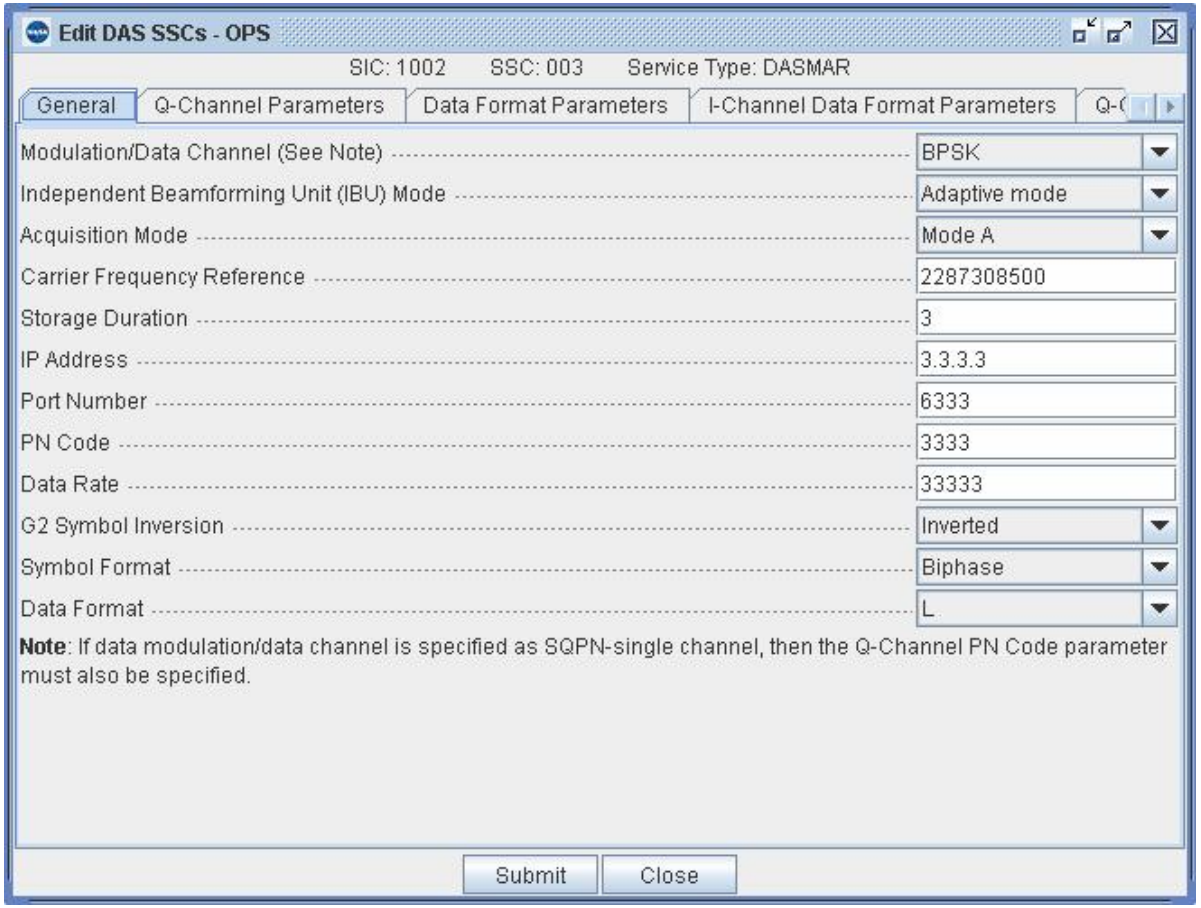


Figure 9.16. DAS SSC Panel Q-Channel Parameters Tab

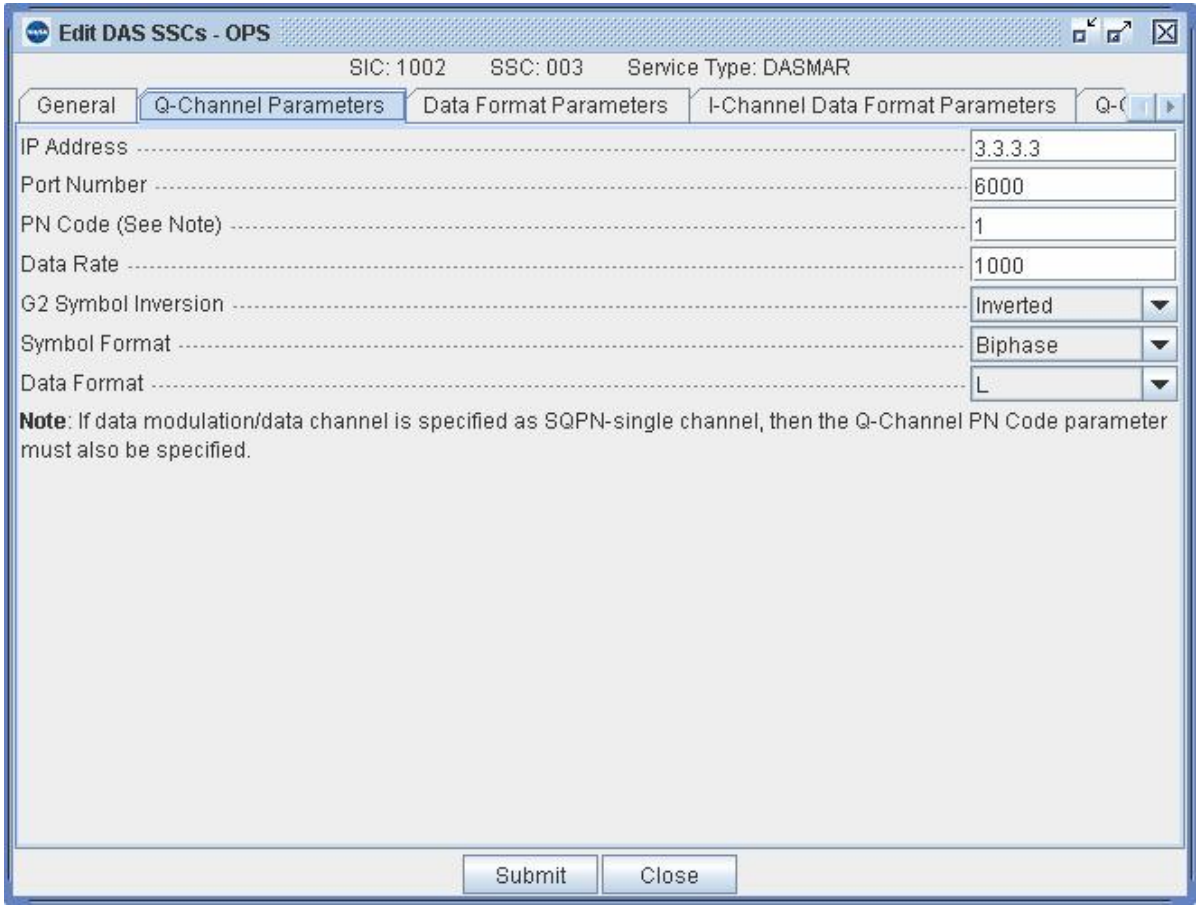


Figure 9.17. DAS SSC Panel Data Format Parameters Tab

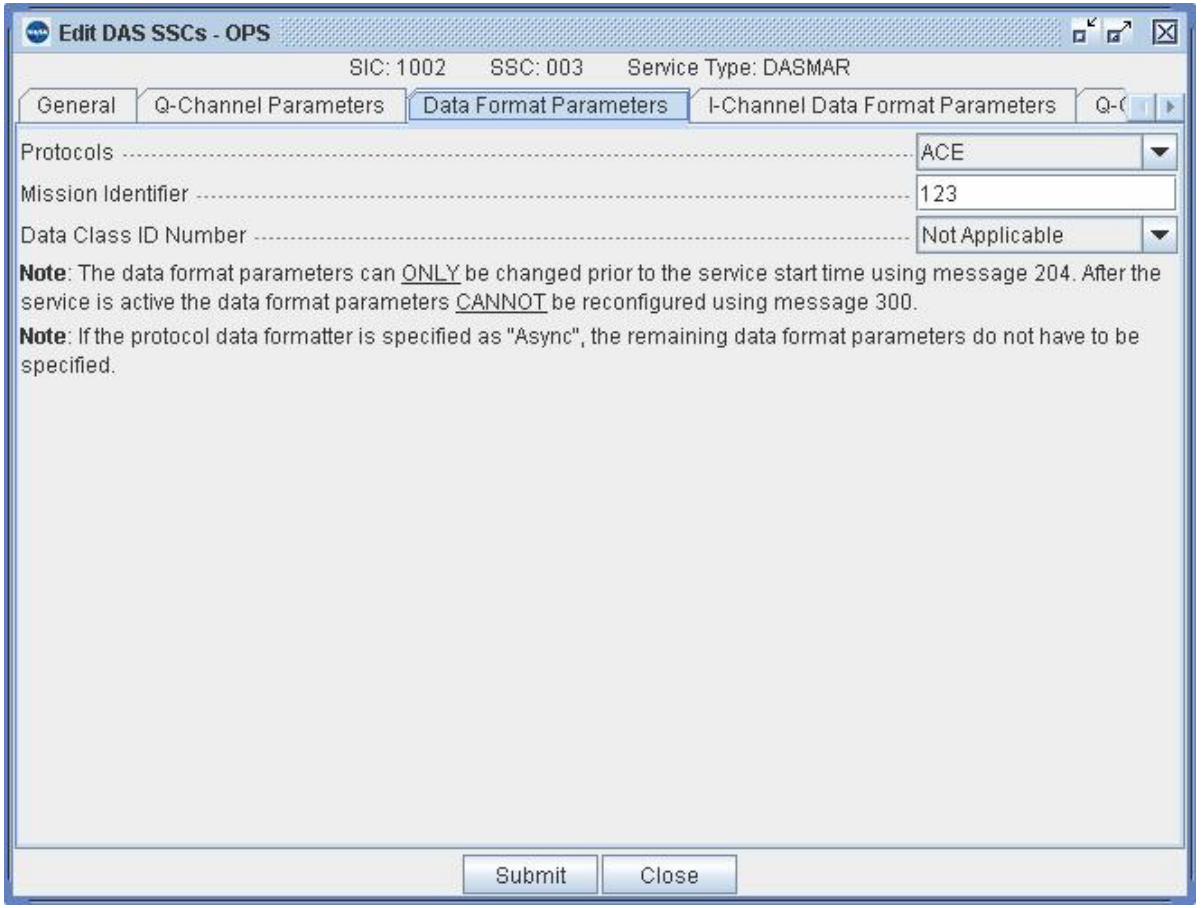


Figure 9.18. DAS SSC Panel I-Channel Data Format Parameters Tab

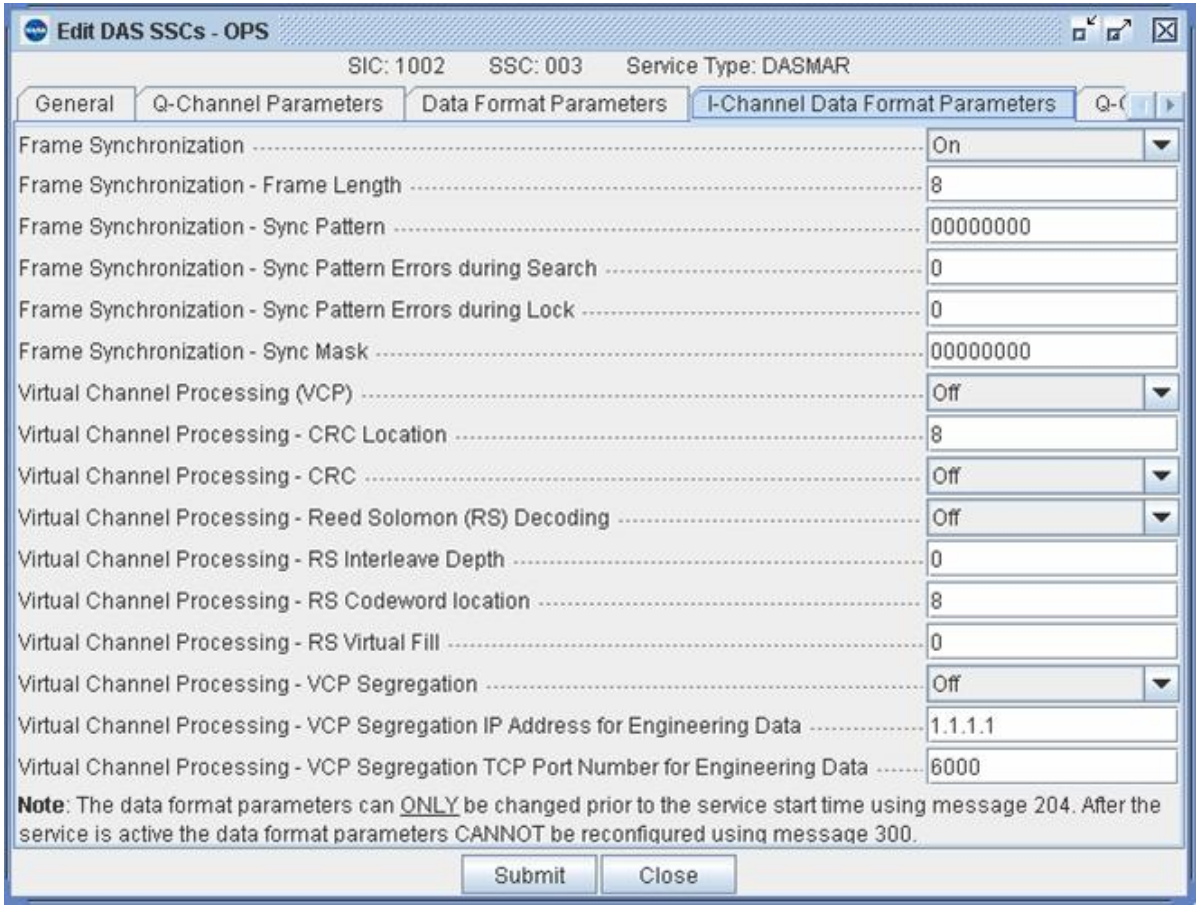
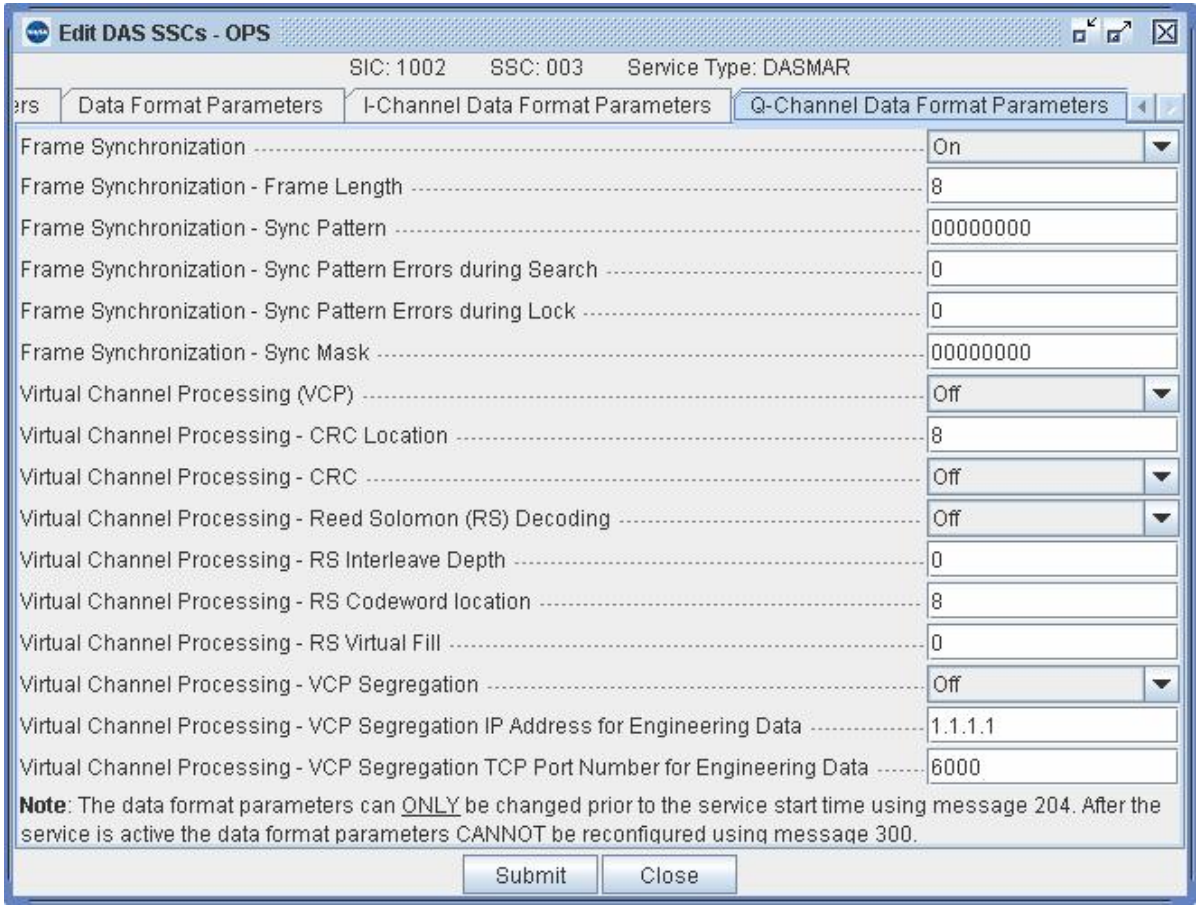


Figure 9.19. DAS SSC Panel Q-Channel Data Format Parameters Tab



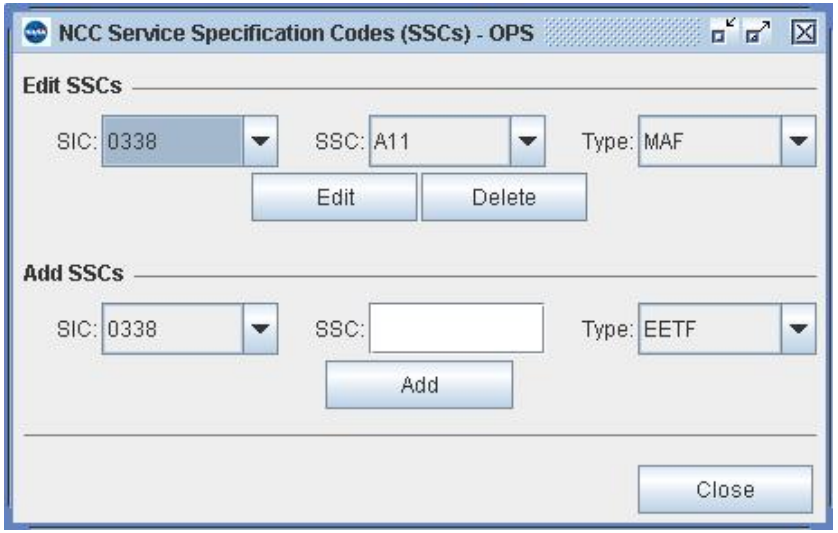
Mission Setup/Service Types/NCC Service Specification Codes (SSCs)

SSCs and Service Types

The NCCDS Service Specification Codes (SSCs) menu option allows the Mission Manager to submit a request to O&M administrator for creating or updating NCCDS SSCs and associated parameters for the SIC the Mission Manager is authorized for. The master NCCDS SSCs and their parameters for all NCCDS SICs are stored on the NCCDS database. An exact copy of the SSCs and parameters are also available on the SNAS database for scheduling purposes. List of SSCs and parameters in both NCCDS and SNAS databases must be in sync and the NCCDS DBA and SNAS O&M administrator are responsible that they stay in sync at all times.

While DAS SSCs can be updated by Mission Manager without approval by the O&M administrator, any changes to NCCDS SSCs must be approved by the O&M administrator via the O&M Client software. O&M administrator can either approve or reject the request. The decision of the O&M on the NCCDS SSC add/delete/modify request will appear on the Squawk Box on the Main Control panel. A requested change will not take effect until an approval message for the request shows up in the Squawk Box.

Figure 9.20. NCC SSCs Panel



Button Selections:

- **Edit**- Initializes the NCCDS SSC Parameter panel for the selected SSC depending on the service type.
- **Delete**- Submits to O&M the request to delete the selected SSC.
- **Add**- Initializes the NCCDS SSC Parameter panel for the selected service type for entering parameters.
- **Close**- Closes the NCCDS SSCs panel and returns to the Main Control panel

When the NCCDS SSCs menu option is selected, a panel to select SIC, SSC and service type appears. The top section of the panel is used for updating an existing SSC and the bottom section for creating a new one. To update an existing SSC, select a SIC and the SSC to be updated on the top section. The service type associated with the selected SSC will appear in the Type box. Click on the Edit button to activate the SSC parameters panel for the service type.

To delete an existing SSC, select the SIC and the target SSC and click on the Delete button. The delete request is submitted to O&M administrator for approval.

To create a new SSC, select a SIC on the bottom section. Select a service type. Enter an SSC name. The first letter of the SSC should follow the SSC naming guidelines provided in the Appendix A of 452-ICD-SN/CSM. Click on the Add button and an NCCDS SSC parameter panel associated with selected service type appears. An SSC can be added with one or more parameters unspecified.

Except for the end-to-end testing/simulation services, each service type contains a number of fixed parameters and respecifiable parameters. For those service types, the NCCDS SSC Parameter panels will include one or more tabs for the fixed parameters and one or more tabls for the respecifiable parameters. The list of available NCCDS SSC Parameter panels and 452-ICD-SN/CSM tables that define the the service types are provided in the table below.

Table 9.7. NCCDS SSC Parameter Panels

NCCDS SSC Parameter Panel	Service Name	SN/CSM ICD Table
MAF	Multi-Access Forward	A-1
MAR	Multi-Access Return	A-3
KaSAF	Ka-band Single Access Forward	A-9
KaSAR	Ka-band Single Access Return	A-11
KaSARWB	Ka-band Single Access Return, Wide Band	A-11
KSAF	Ku-band Single Access Forward, Normal	A-9
KSAF-SHTL	Ku-band Single Access Forward, Shuttle	A-10
KSAR	Ku-band Single Access Return, Normal	A-11
KSARIF	Ku-band Single Access Return, Intermediate Frequency	A-11
KSAR-SHTL	Ku-band Single Access Return, Shuttle	A-12
SSAF	S-band Single Access Forward, Normal	A-4
SSAF-SHTL	S-band Single Access Forward, Shuttle	A-5
SSAR	S-band Single Access Return, Normal	A-6
SSARIF	S-band Single Access Return, Intermediate Frequency	A-6
SSAR-SHTL	S-band Single Access Return, Shuttle	A-8
SMAF	S-band Multi-Access Forward	A-2
SMAR	S-band Multi-Access Return	A-7
EETF, EETR	End-to-End Testing/Simulation	A-13
TRKN, TRKC	Normal/Cross Tracking	A-14

NCCDS SSC Parameter Panels

In general, there are two types of parameters: pre-defined available choices shown in combination boxes and user-entered values in text boxes. For a text box, move the cursor to the middle of the box and the valid range/value for the box will appear.

Each NCCDS SSC Parameter panel has two buttons at the bottom of the panel. The Submit button is to submit the SSC parameter changes to O&M for approval. The Cancel button is to discard changes and to return to NCCDS SSCs panel.

Figure 9.21. Add/Edit MAF Panel Fixed Parameters Tab

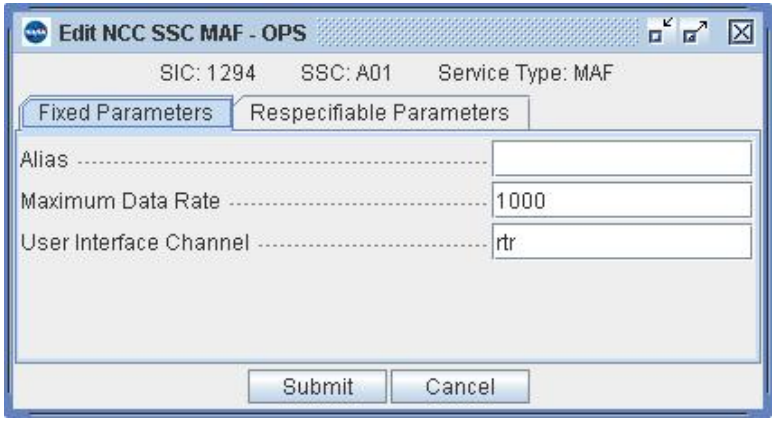


Figure 9.22. Add/Edit MAF Respecifiable Parameters Tab

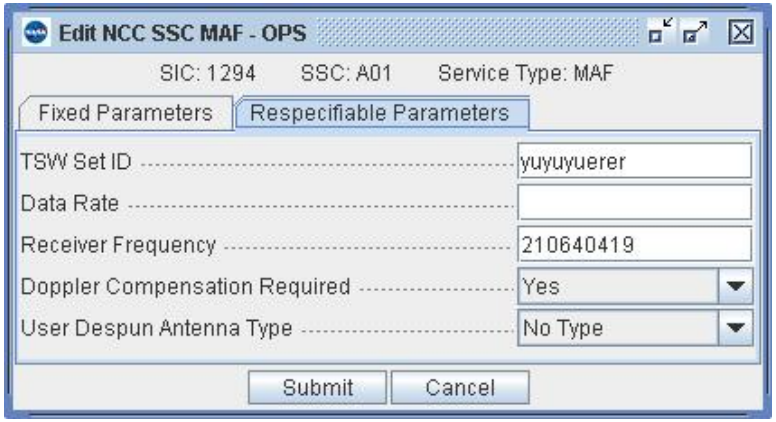


Figure 9.23. Add/Edit MAR Panel Fixed Parameters Tab

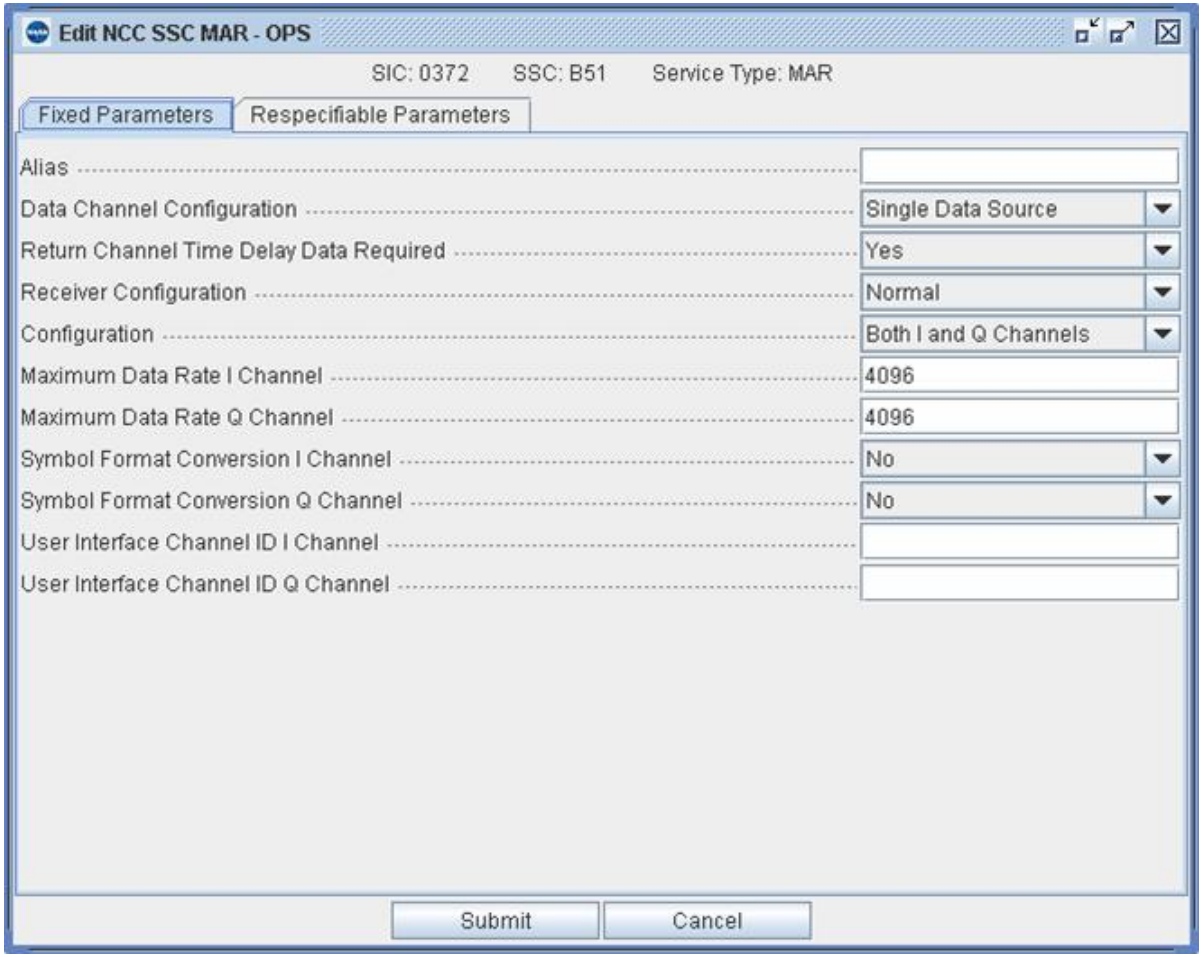


Figure 9.24. Add/Edit MAR Panel Respecifiable Parameters Tab

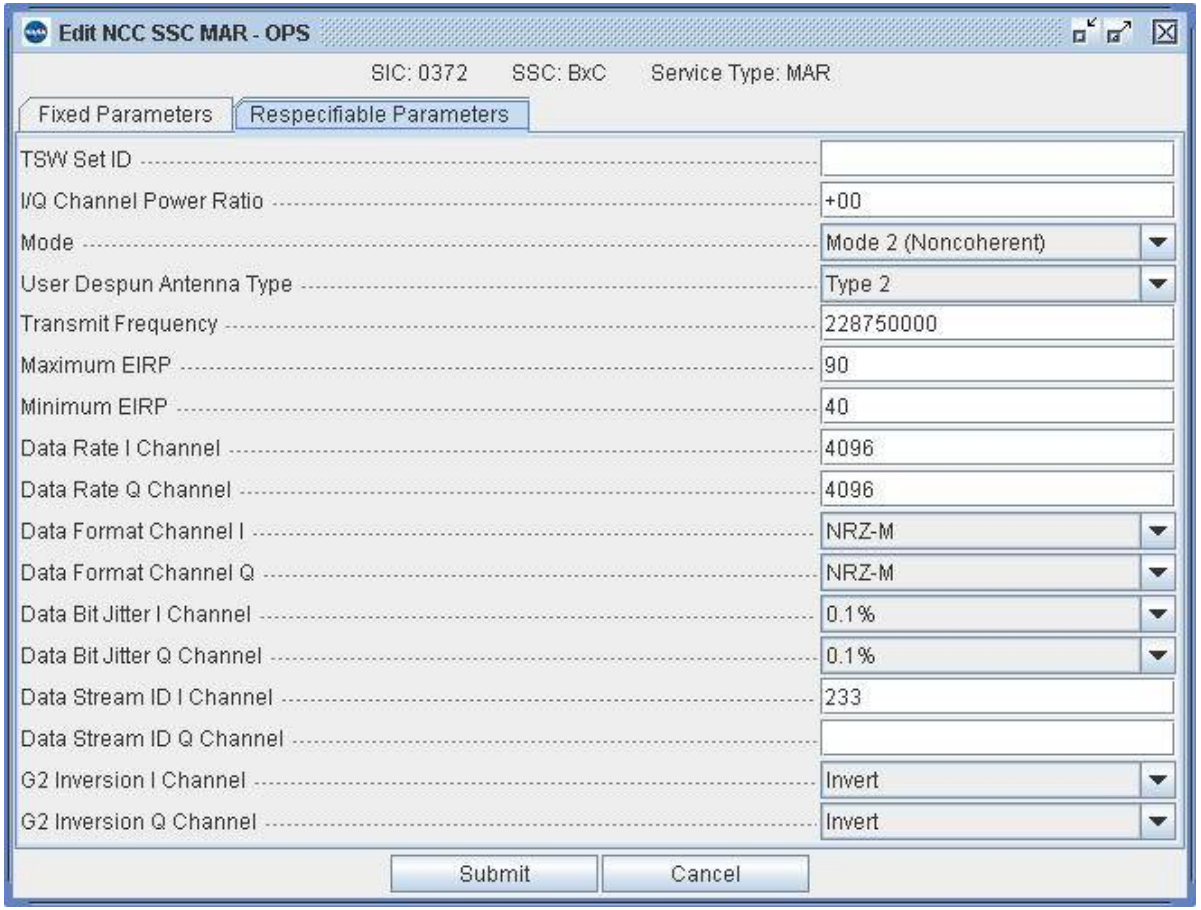


Figure 9.25. Add/Edit KaSAF Panel Fixed Parameters Tab

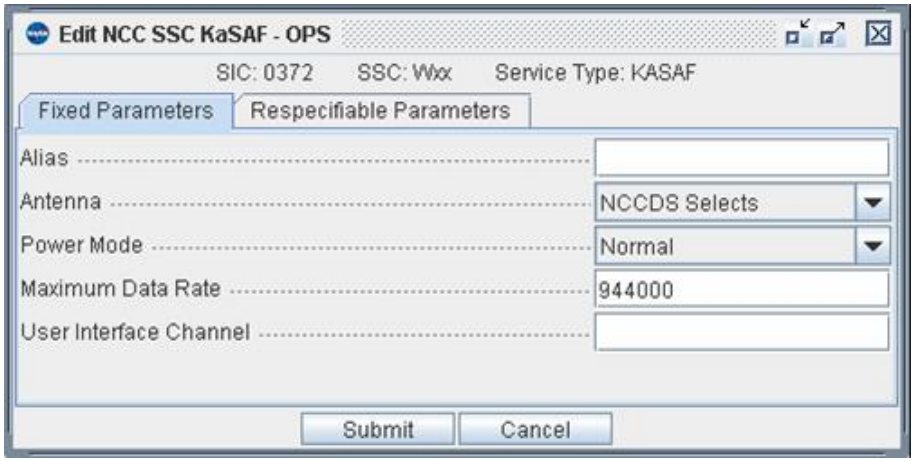


Figure 9.26. Add/Edit KaSAF Panel Respecifiable Parameters Tab

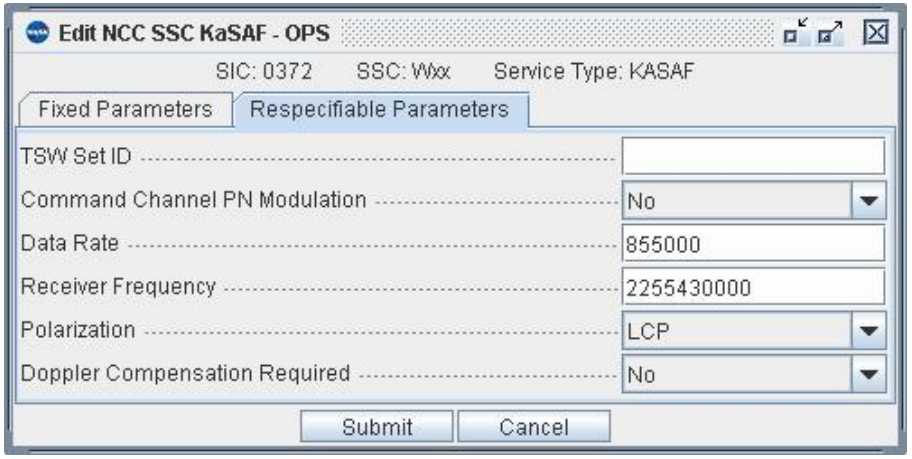


Figure 9.27. Add/Edit KaSAR Panel Fixed Parameters Tab

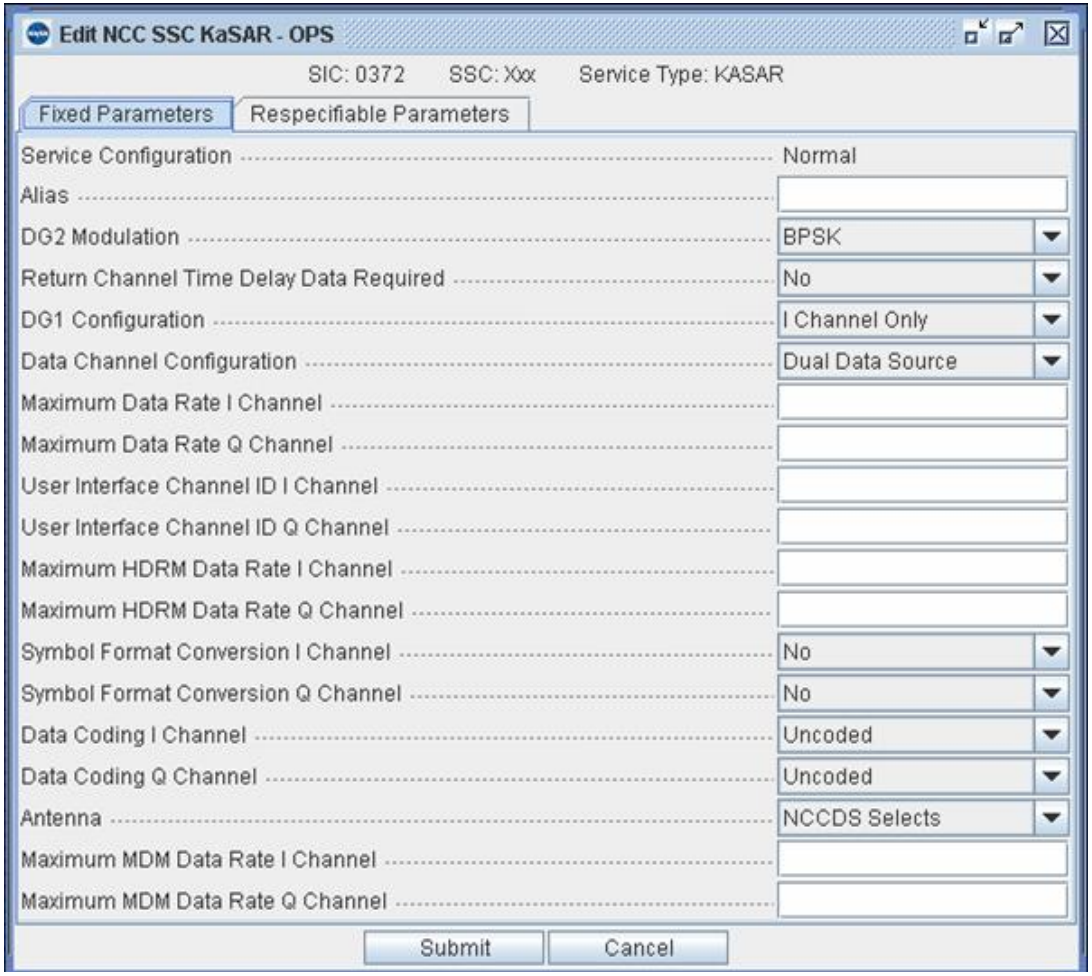


Figure 9.28. Add/Edit KaSAR Panel Respecifiable Parameters Tab

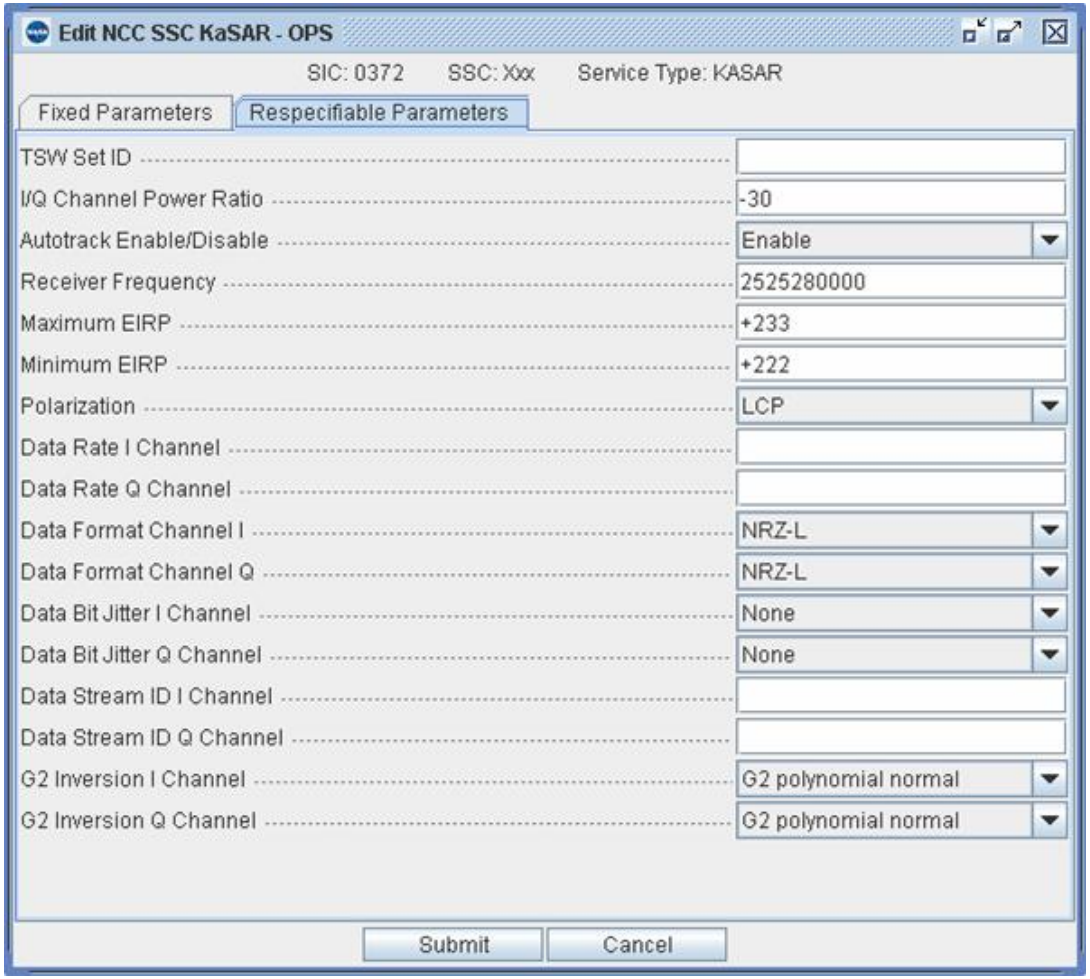


Figure 9.29. Add/Edit KaSARWB Panel Fixed Parameters Tab

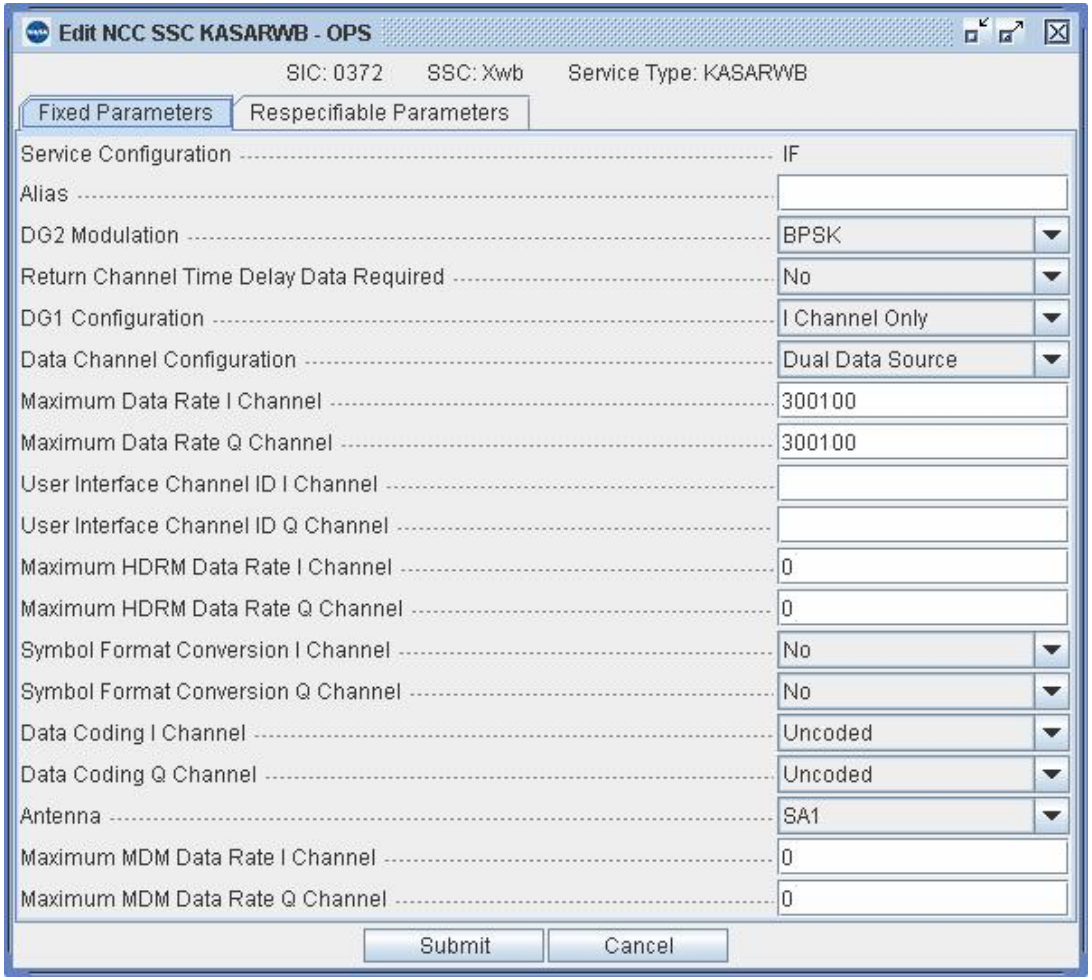


Figure 9.30. Add/Edit KaSARWB Panel Respecifiable Parameters Tab

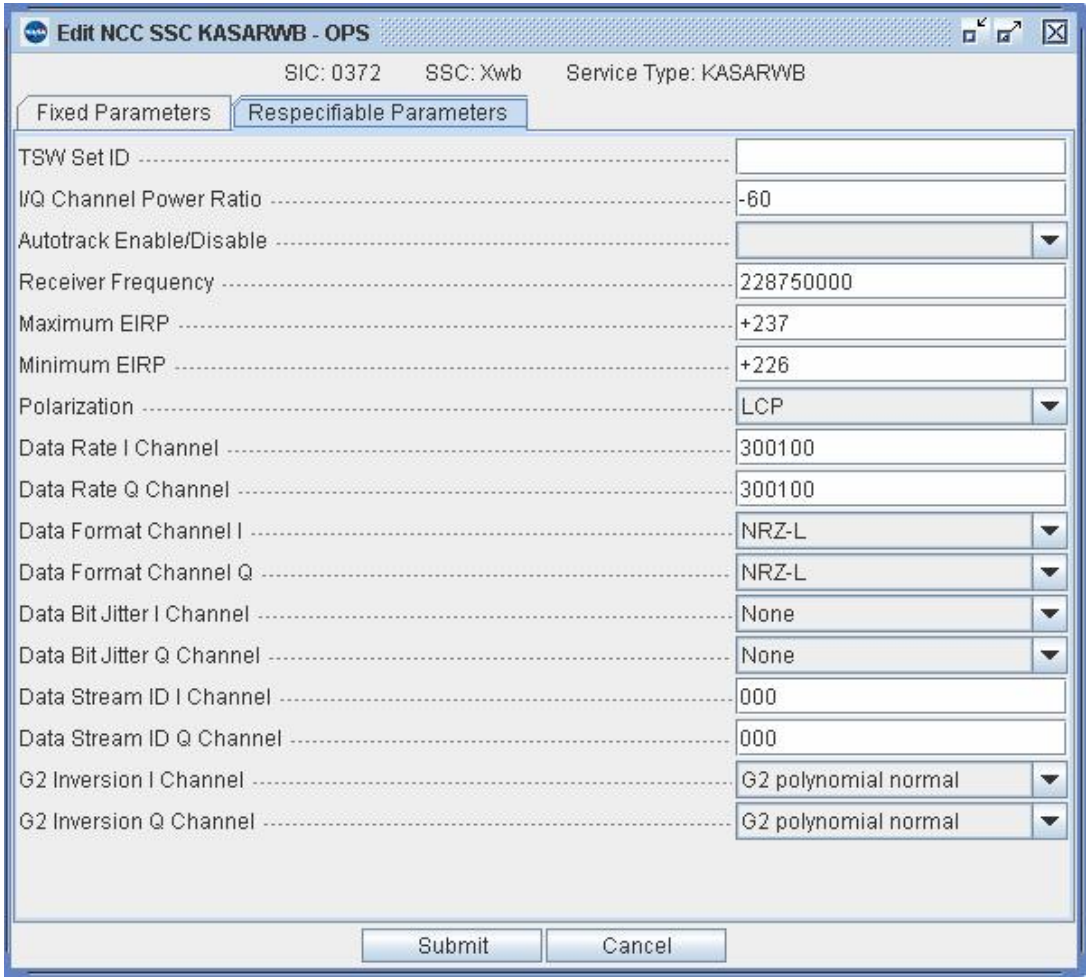


Figure 9.31. Add/Edit KSAF Panel Fixed Parameters Tab

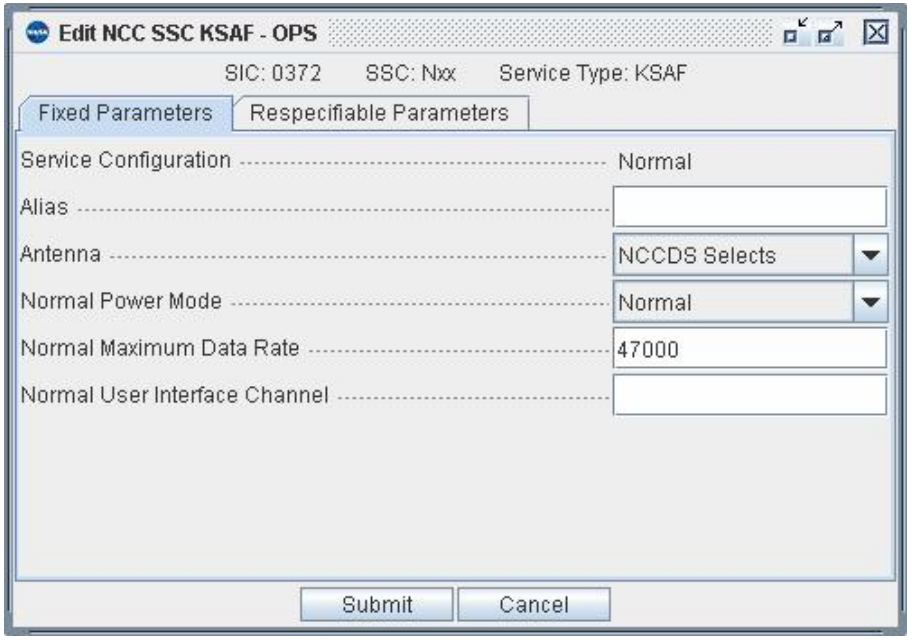


Figure 9.32. Add/Edit KSAF Panel Respecifiable Parameters Tab

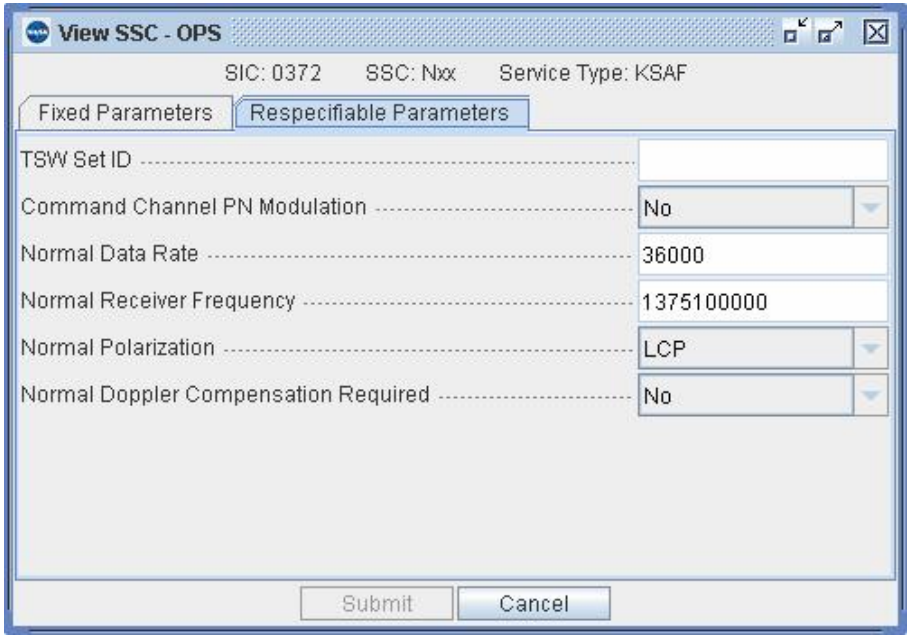


Figure 9.33. Add/Edit KSAF-Shuttle Panel Fixed Parameters Tab

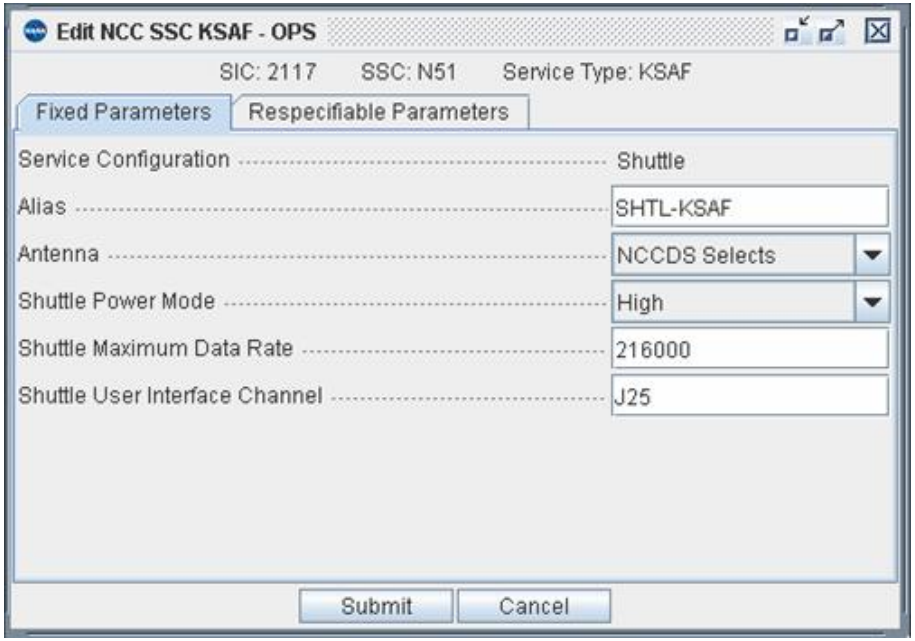


Figure 9.34. Add/Edit KSAF-Shuttle Panel Respecifiable Parameters Tab

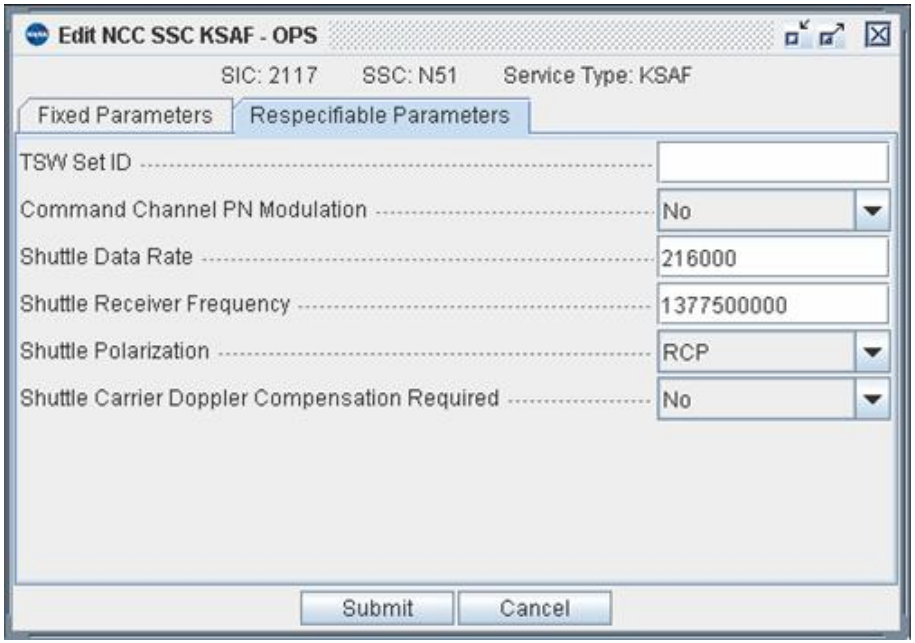


Figure 9.35. Add/Edit KSAR Fixed Parameters Tab

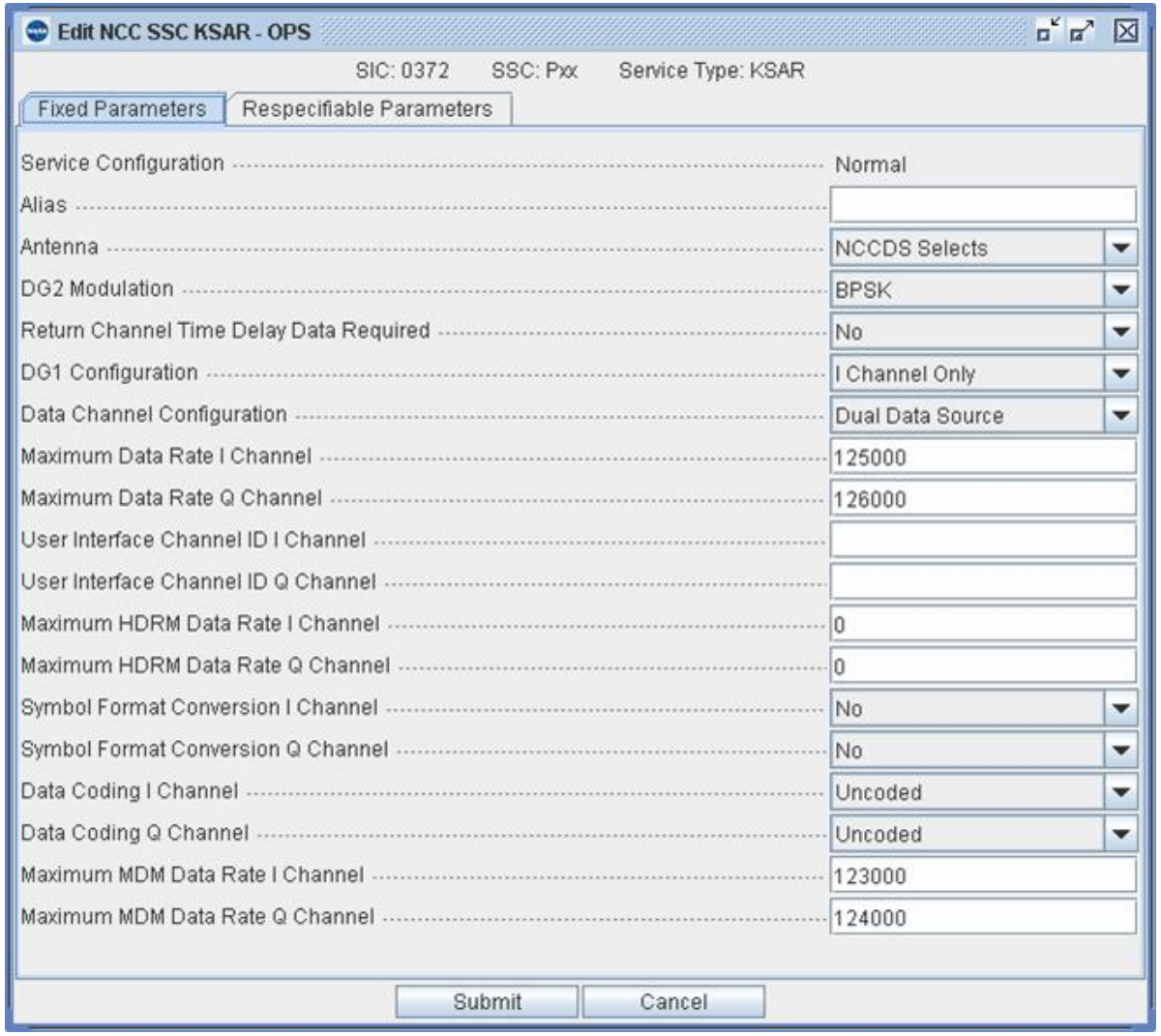


Figure 9.36. Add/Edit KSAR Panel Respecifiable Parameters Tab

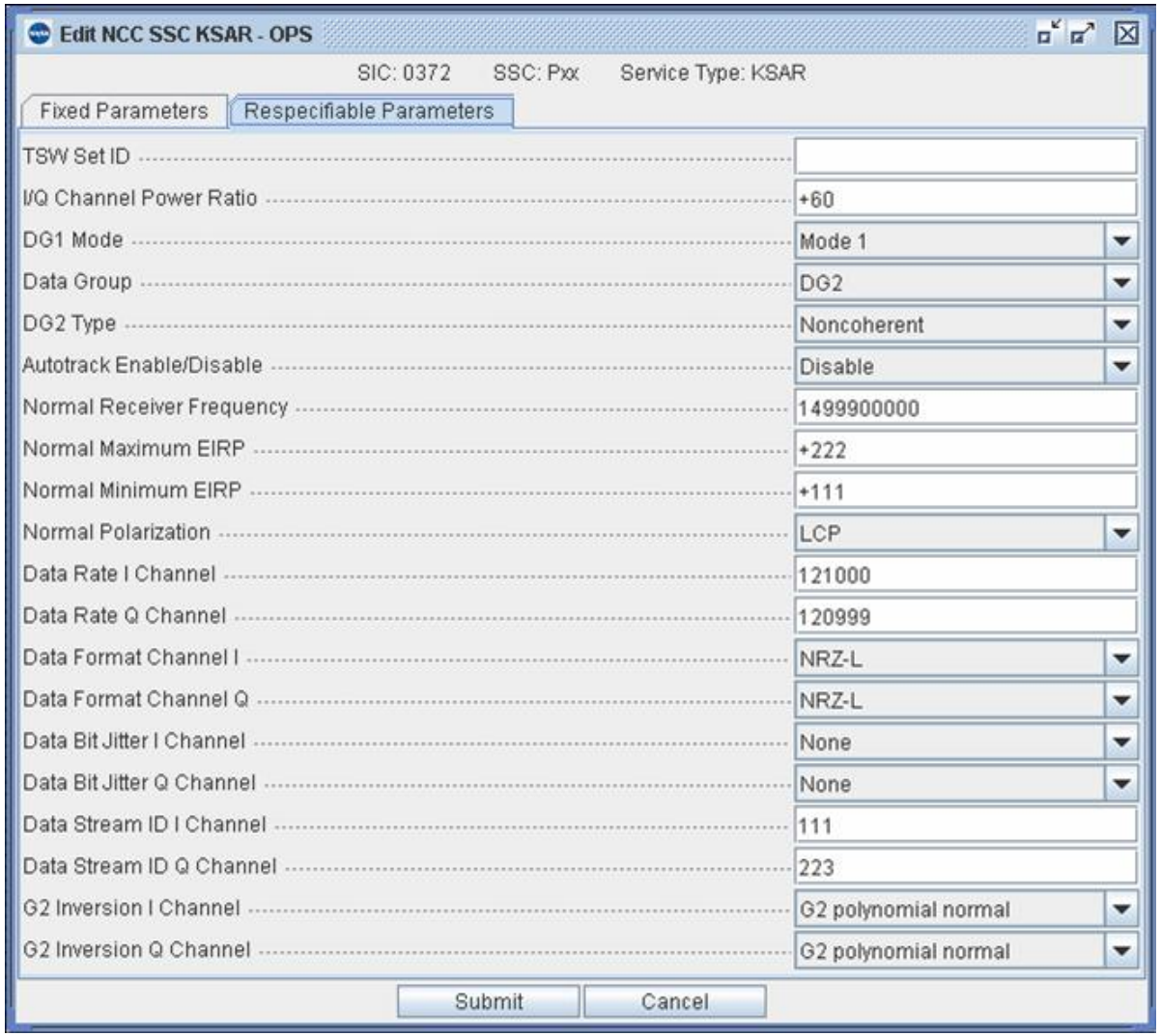


Figure 9.37. Add/Edit KSAR IF Fixed Parameters Tab

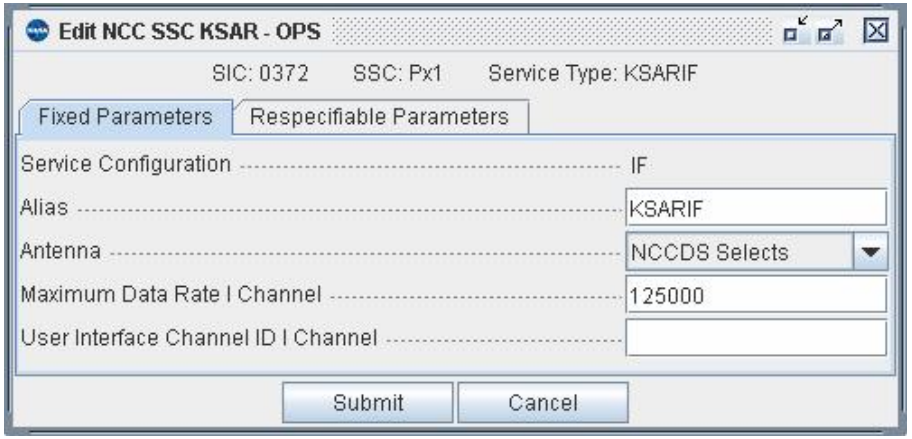


Figure 9.38. Add/Edit KSAR IF Respecifiable Parameters Tab

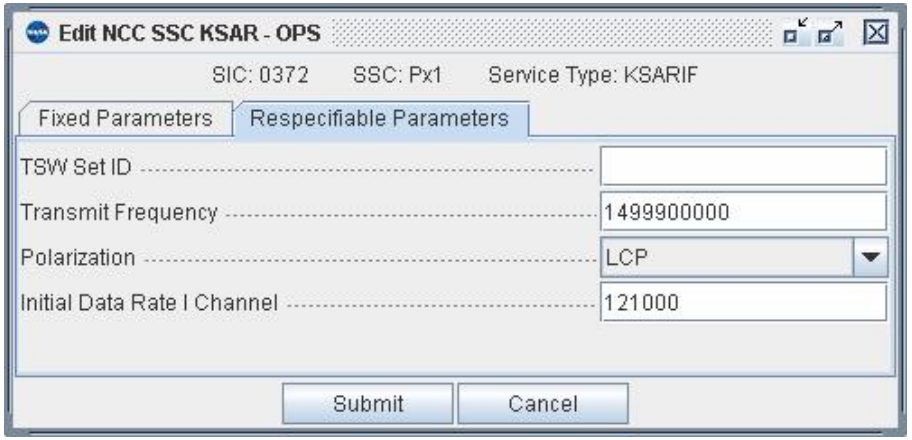


Figure 9.39. Add/Edit KSAR-Shuttle Panel Fixed Parameters Tab

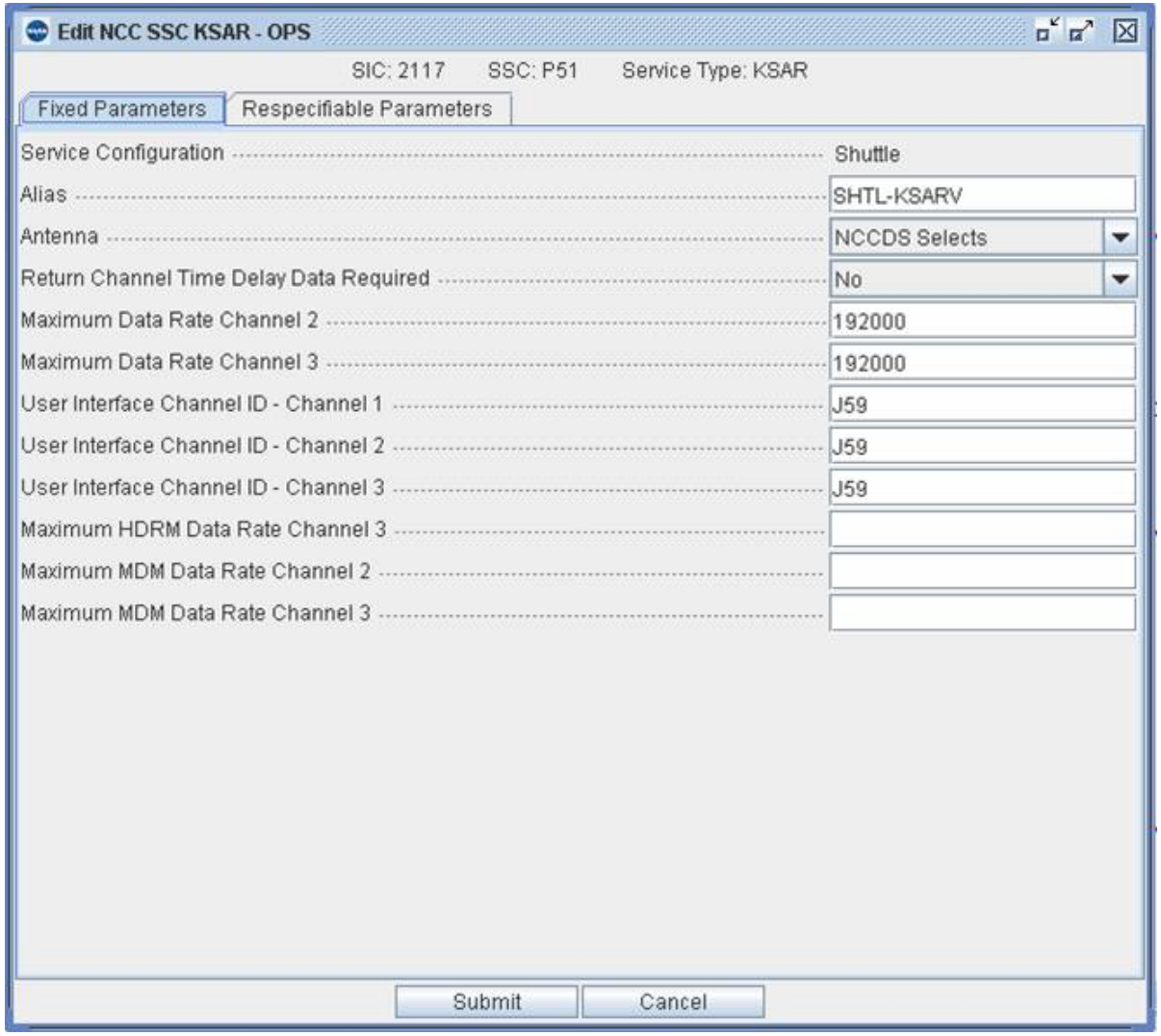


Figure 9.40. Add/Edit KSAR-Shuttle Panel Respecifiable Parameters Tab

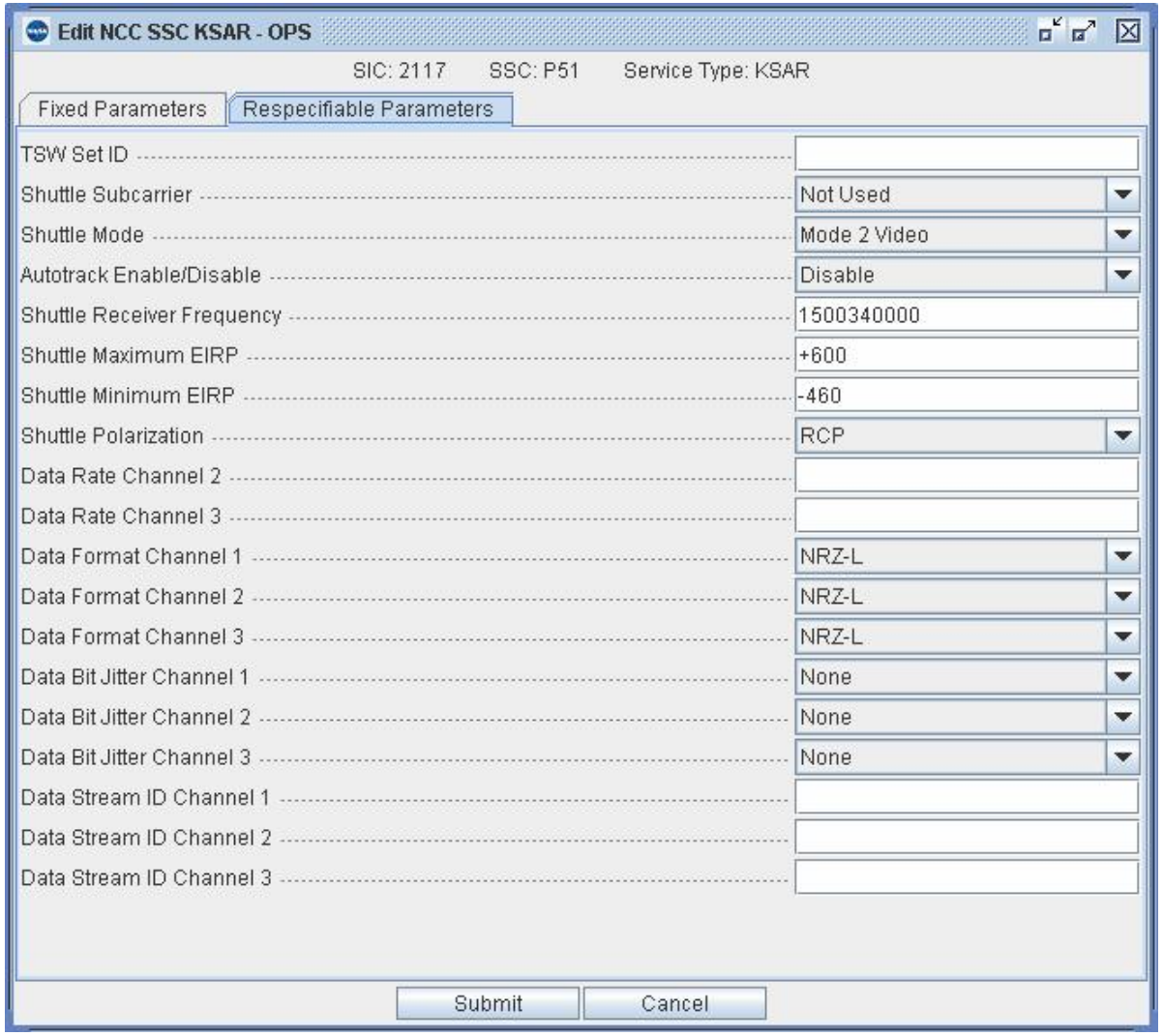


Figure 9.41. Add/Edit SSAF Panel Fixed Parameters Tab

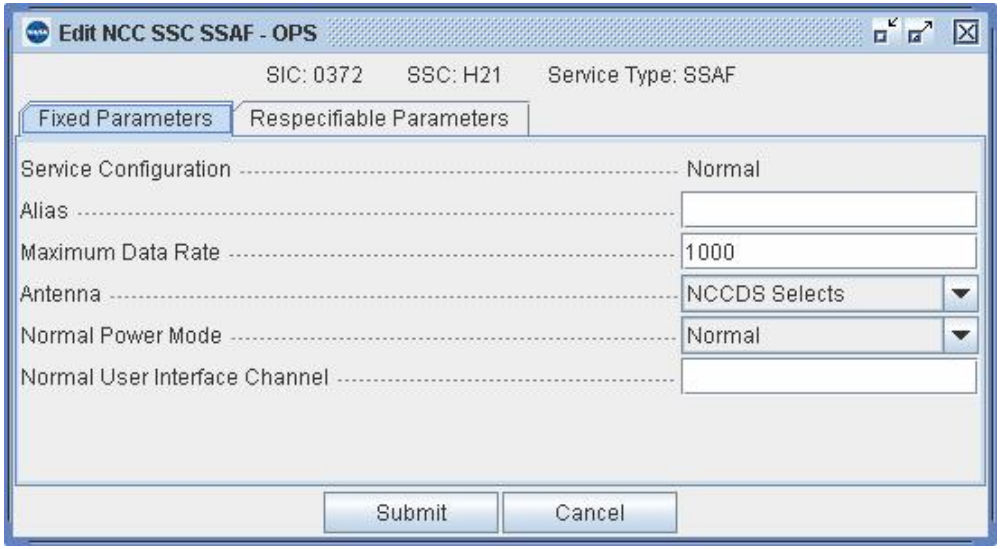


Figure 9.42. Add/Edit SSAF Panel Respecifiable Parameters Tab

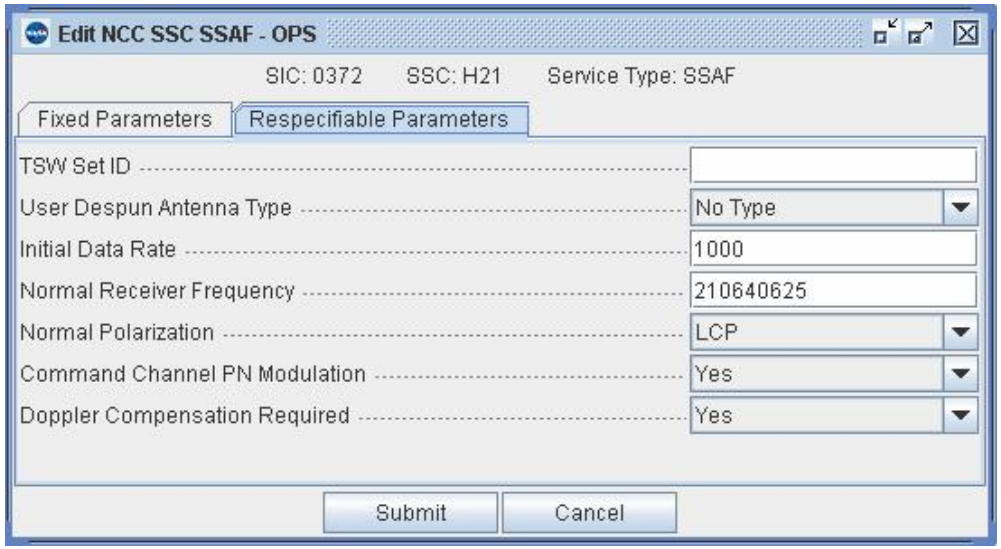


Figure 9.43. Add/Edit SSAF-Shuttle Panel Fixed Parameters Tab

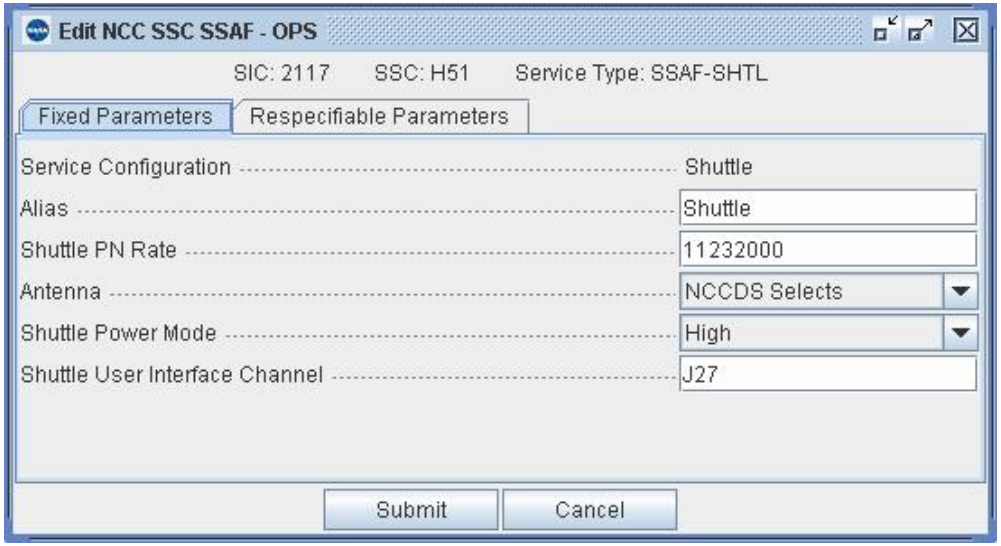


Figure 9.44. Add/Edit SSAF-Shuttle Panel Respecifiable Parameters Tab

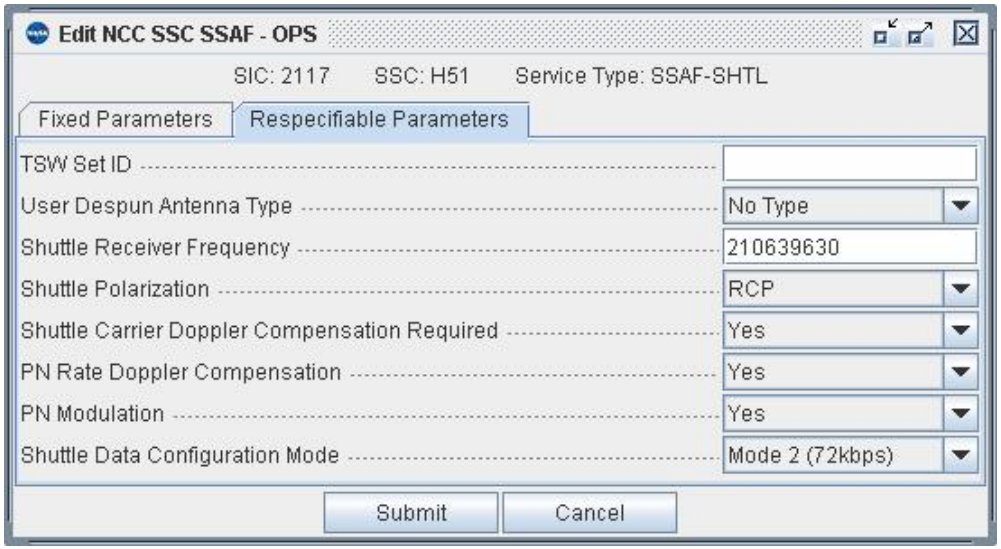


Figure 9.45. Add/Edit SSAR Panel Fixed Parameters Tab

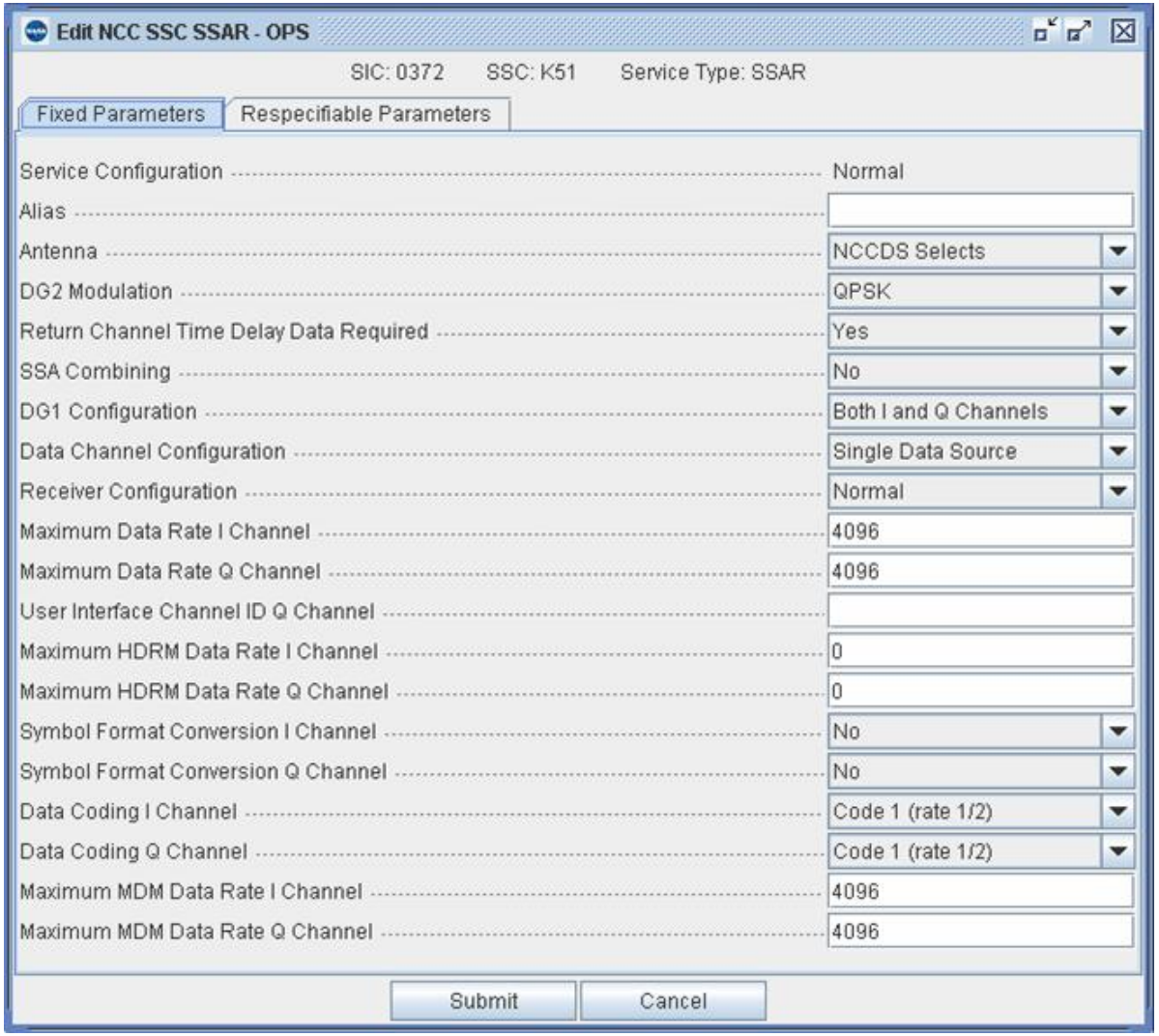


Figure 9.46. Add/Edit SSAR Panel Respecifiable Parameters Tab

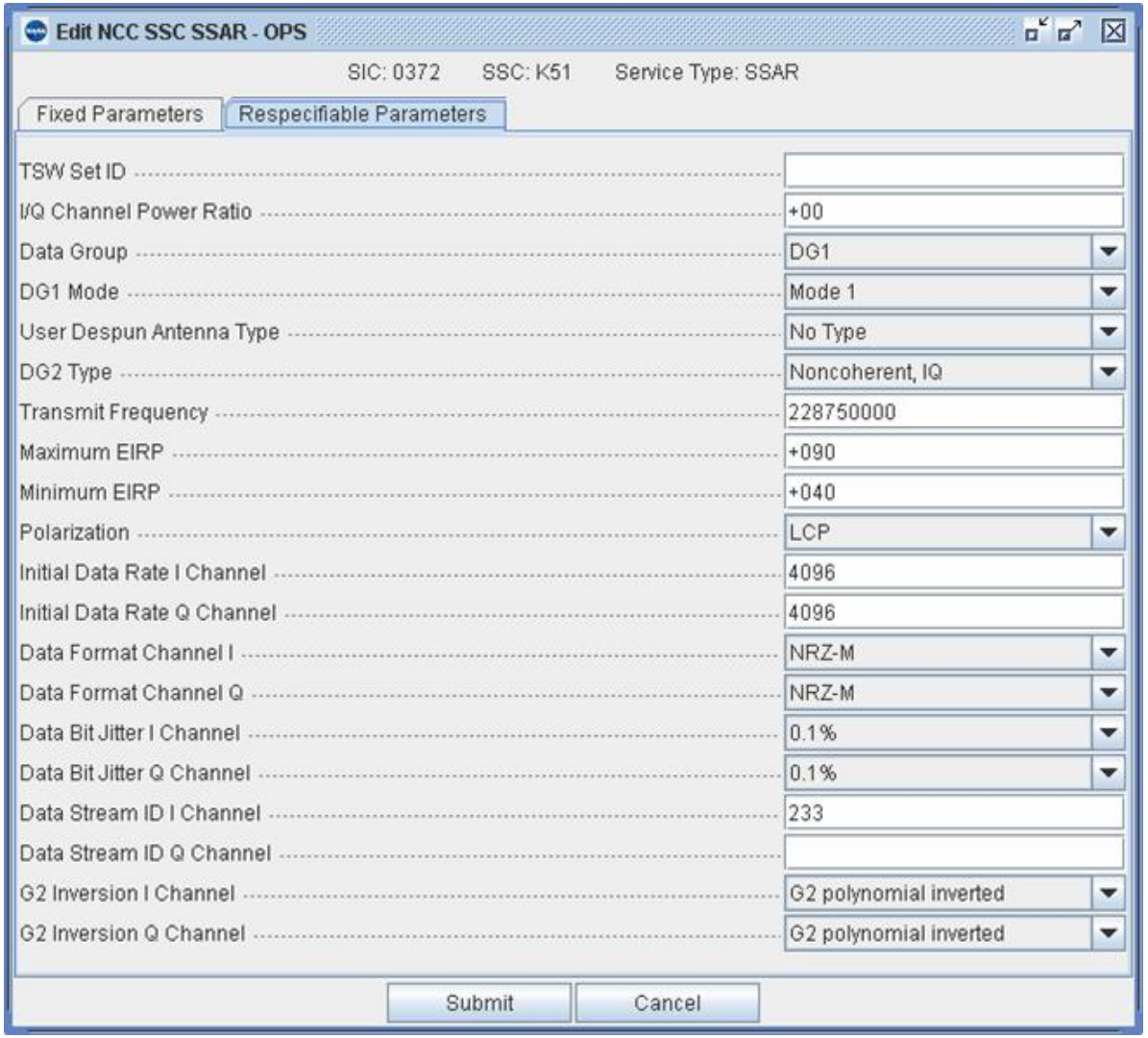


Figure 9.47. Add/Edit SSAR IF Panel Fixed Parameters Tab

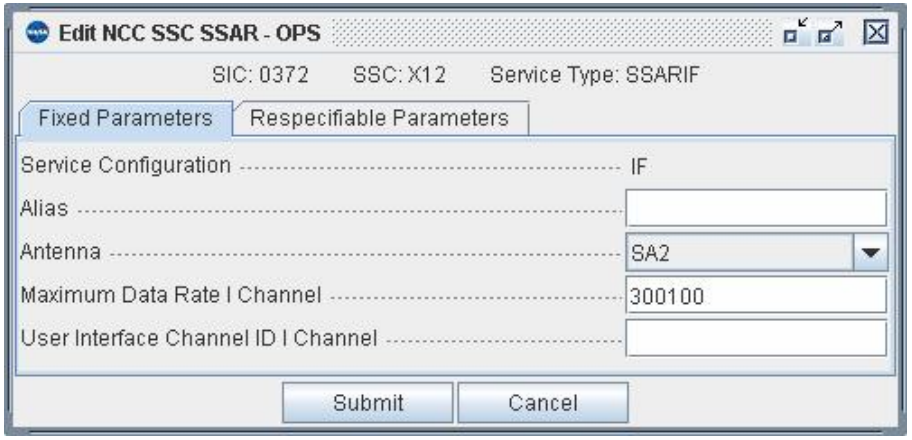


Figure 9.48. Add/Edit SSAR IF Panel Respecifiable Parameters Tab

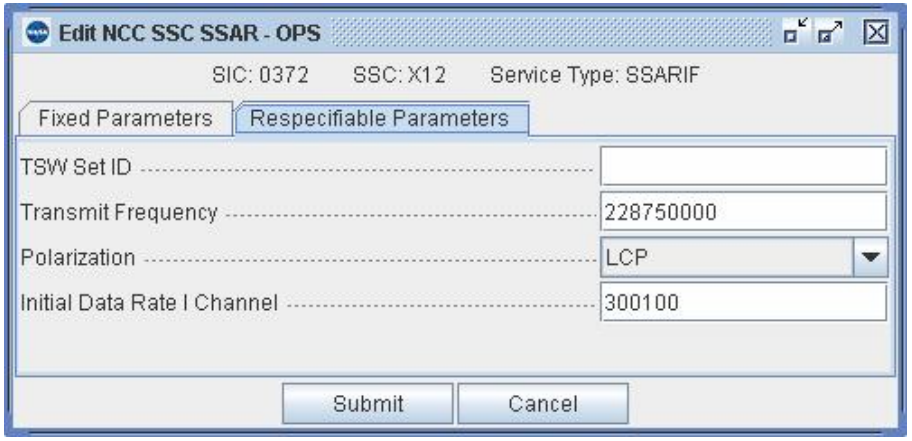


Figure 9.49. Add/Edit SSAR-Shuttle Panel Fixed Parameters Tab

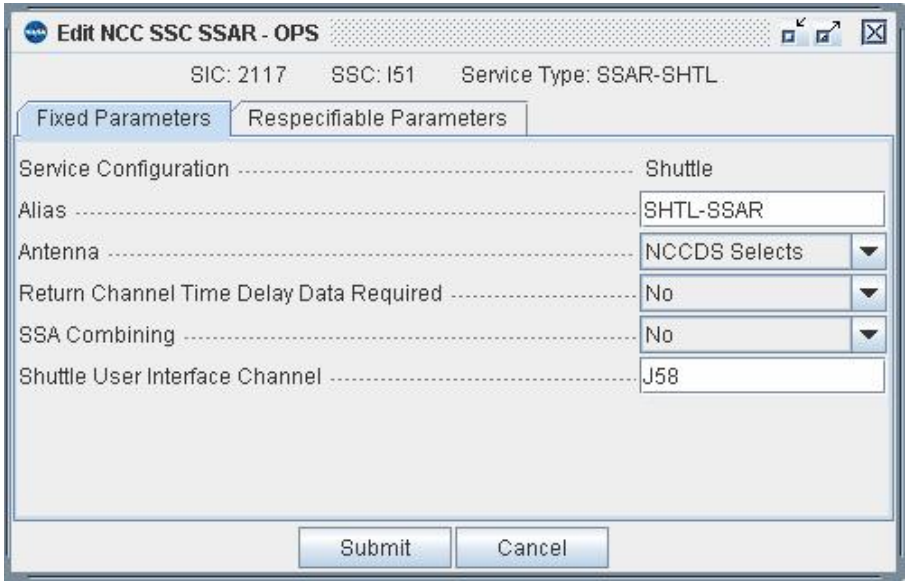


Figure 9.50. Add/Edit SSAR-Shuttle Panel Respecifiable Parameters Tab

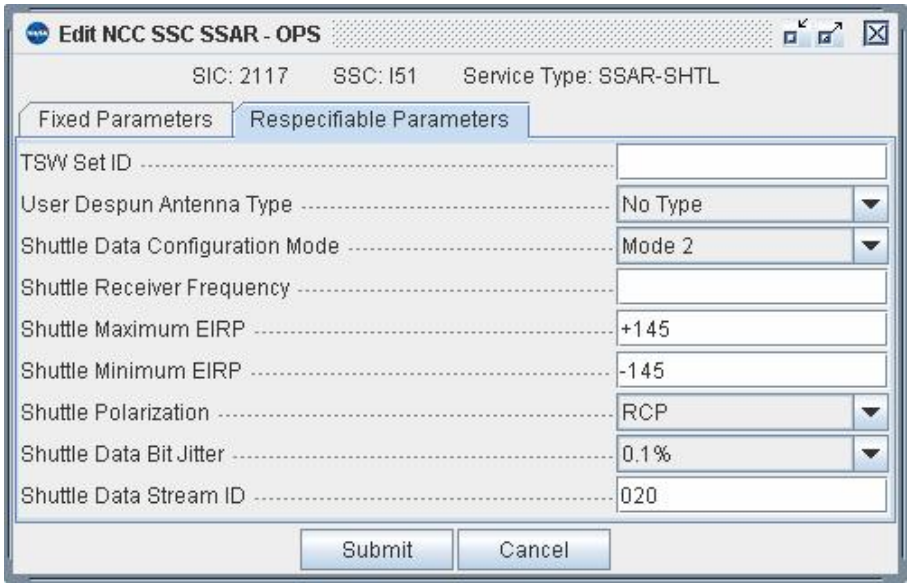


Figure 9.51. Add/Edit SMAF Panel Fixed Parameters Tab

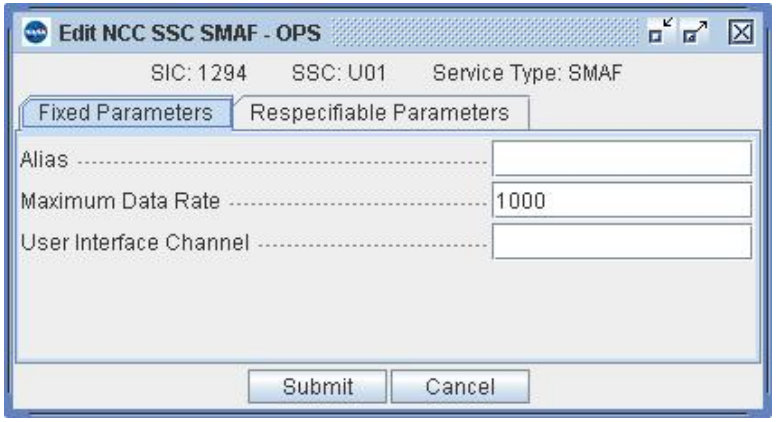


Figure 9.52. Add/Edit SMAF Panel Respecifiable Parameters Tab

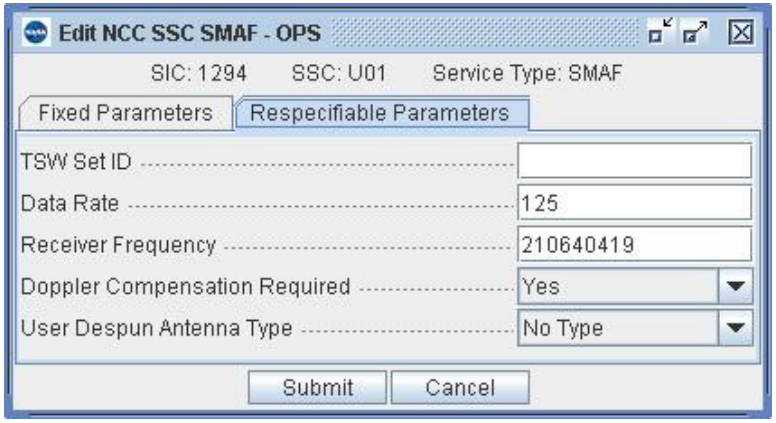


Figure 9.53. Add/Edit SMAR Panel Fixed Parameters Tab

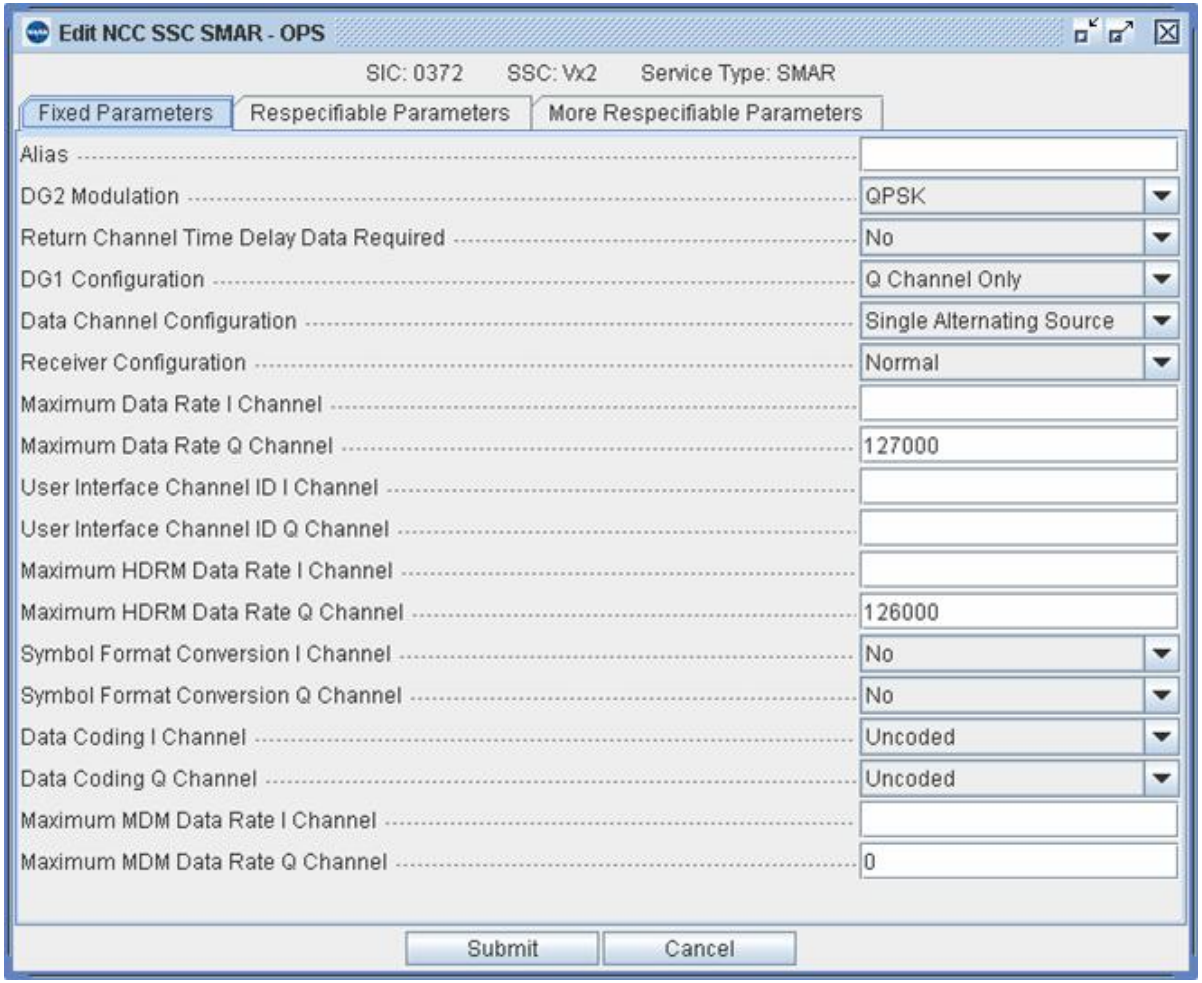


Figure 9.54. Add/Edit SMAR Panel Respecifiable Parameters Tab

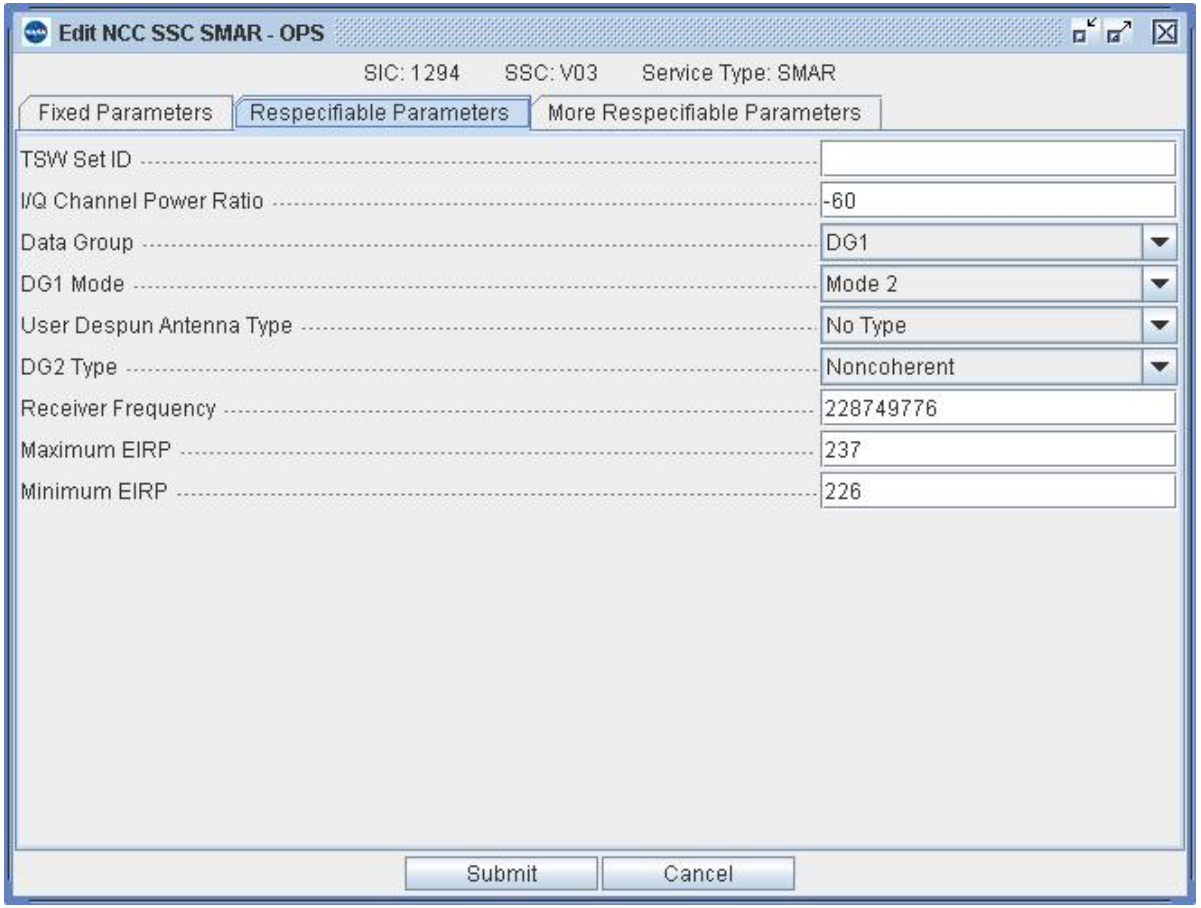


Figure 9.55. Add/Edit SMAR Panel More Respecifiable Parameters Tab

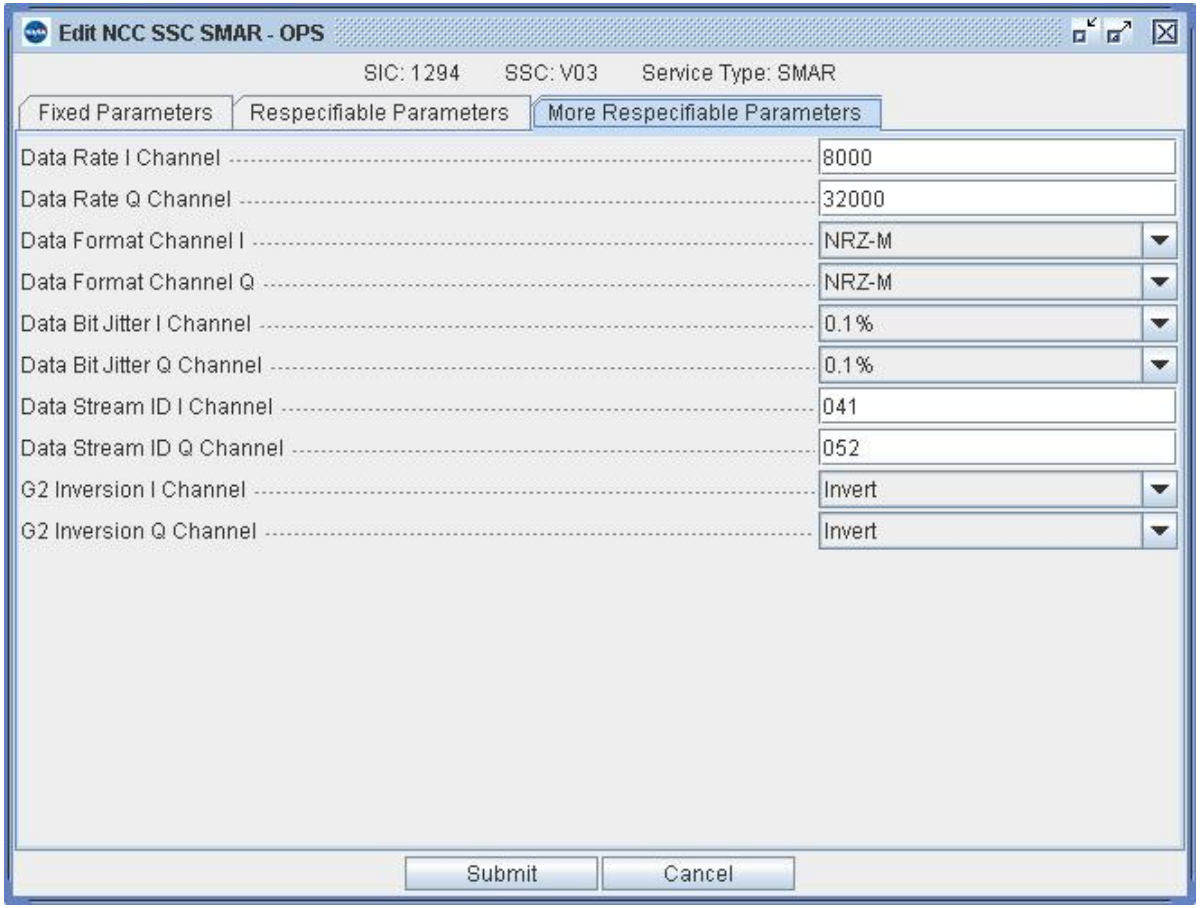


Figure 9.56. Add/Edit EETF/EETR Panel

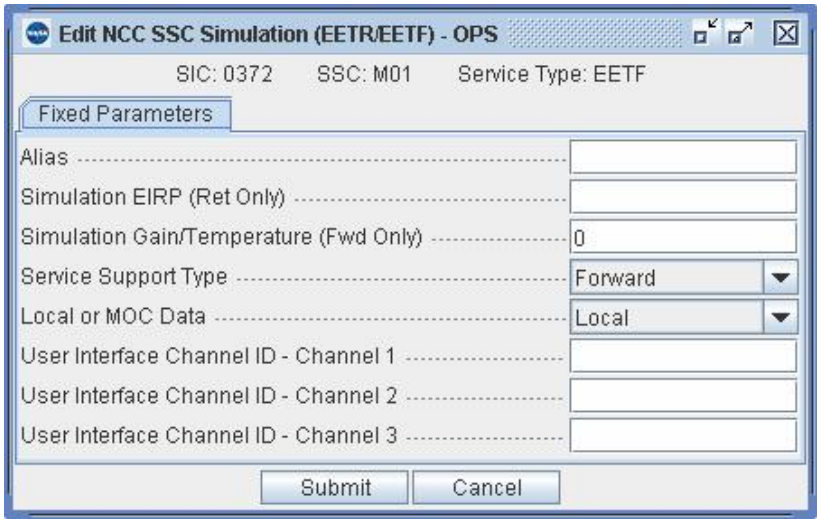


Figure 9.57. Add/Edit TRKC Panel Fixed Parameters Tab

Figure 9.58. Add/Edit TRKC Respecifiable Parameters Tab

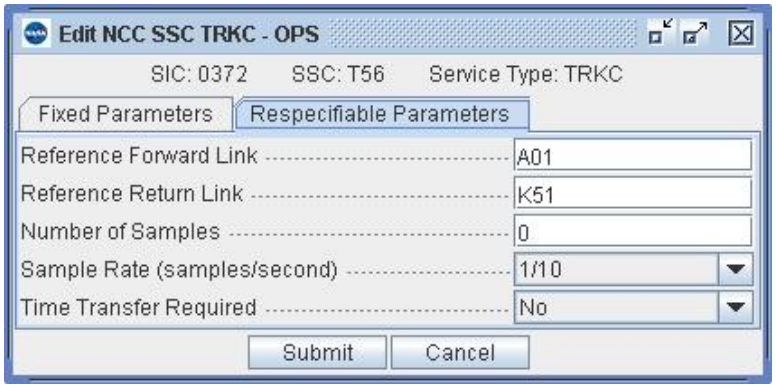


Figure 9.59. Add/Edit TRKN Panel Fixed Parameters Tab

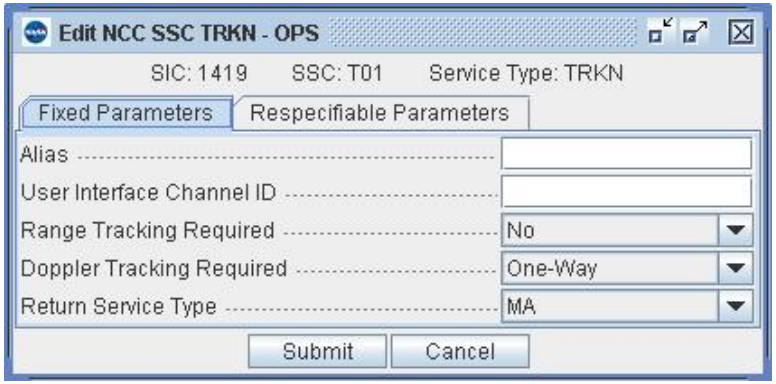
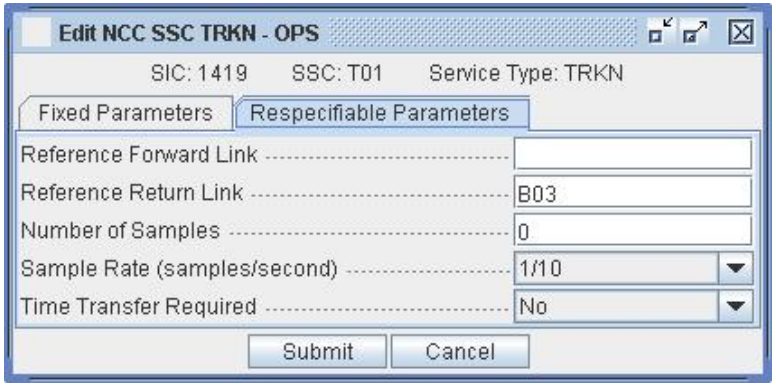


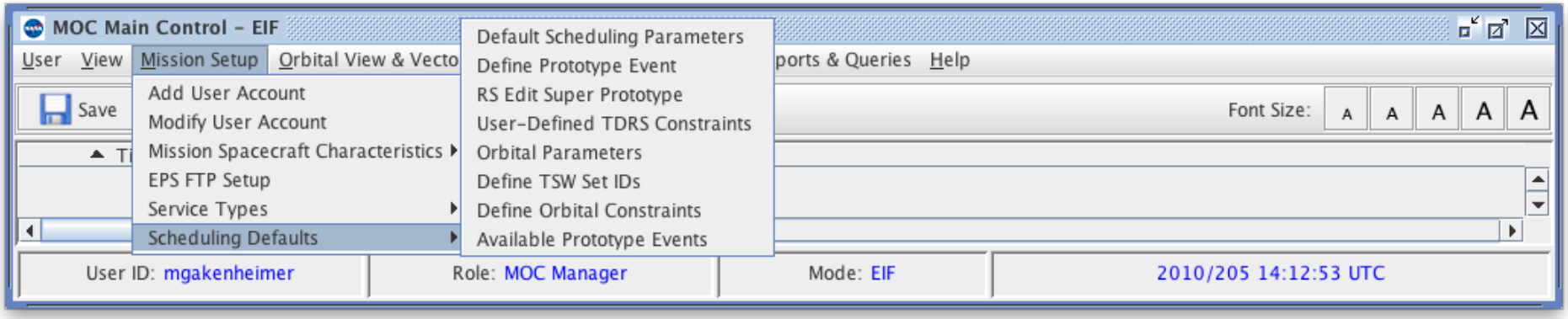
Figure 9.60. Add/Edit TRKN Panel Respecifiable Parameters Tab



Mission Setup/Scheduling Defaults

This group of menu options allows the Mission Manager to define essential information for fomulating Mission's schedule requests.

Figure 9.61. Mission Setup/Scheduling Defaults Menu



When any item from the Scheduling Defaults menu is selected, the user is prompted to select a SIC.

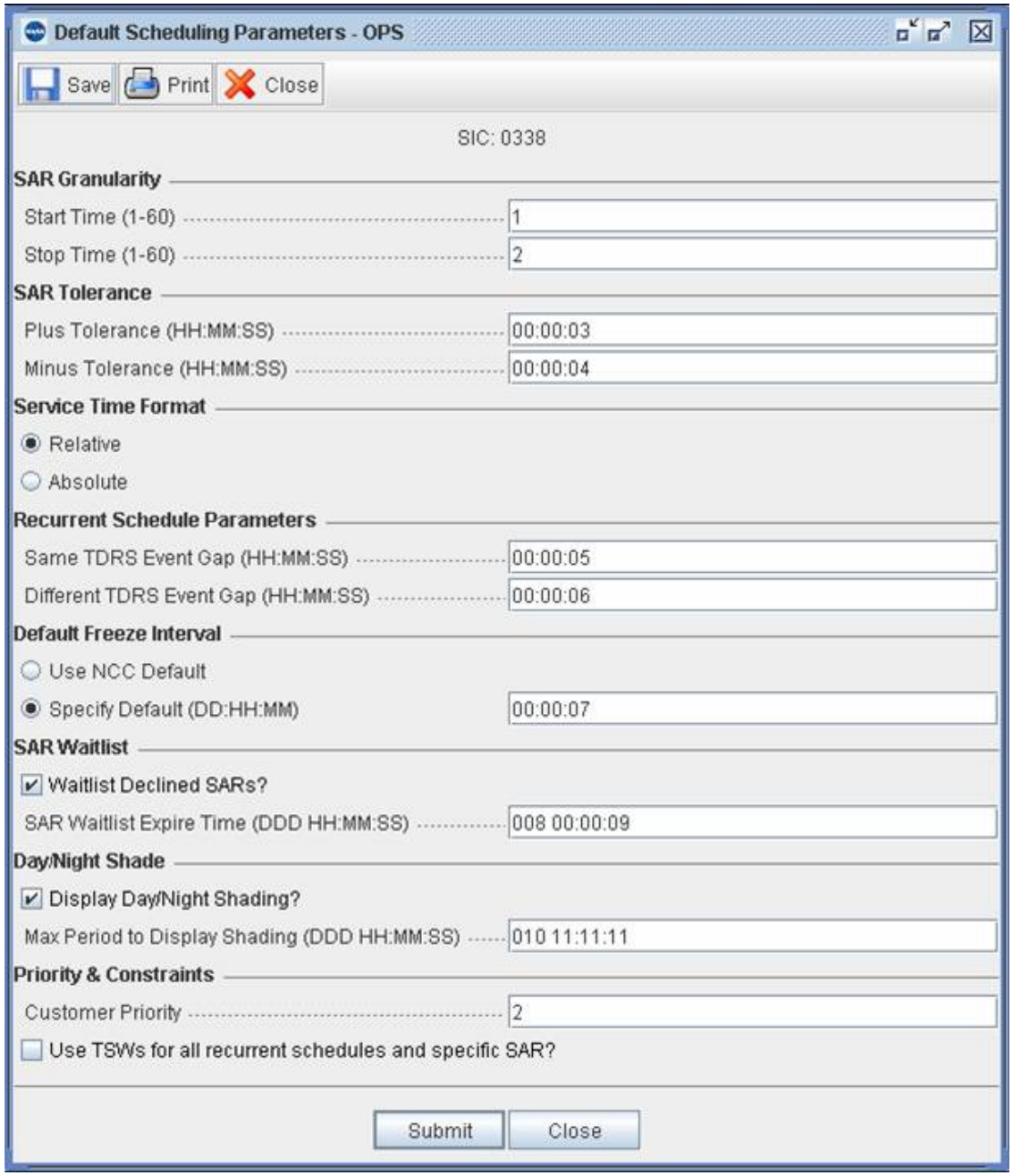
Mission Setup/Scheduling Defaults/Default Scheduling Parameters

The Default Scheduling Parameters menu selection displays the Default Scheduling Parameters panel, which contains several options the user may specify to control aspects of the scheduling process, such as validation levels, the graphical display of day/night shading, the default schedule request priority, etc. The details of this function may be found in paragraph 9.5.

This panel is used to assign default values to some items that appear when schedule requests are created using the interactive SAR panel as well as via Recurrent Scheduling. The initial values assigned to these items (normally done during mission setup) will be displayed when these scheduling panels are initially displayed. Assigning these default values is not required; they are simply an additional feature designed to help streamline the scheduling process for the user.

The SAR Granularity parameters (set in the Default Scheduling Parameters panel) are taken into consideration when generating SARs in the RS process. These parameters force RS to create SARs that start at the SAR Start Granularity and stop at the SAR Stop Granularity (between 1 second and 1 minute). Thus, the user may force SARs to be created at the finest granularity NCCDS supports (1 second) or permit the user to specify SARs starting and ending on the minute mark.

Figure 9.62. Default Scheduling Parameters Panel



Field Descriptions

Table 9.8. Default Scheduling Parameters Field Descriptions

Field	Description
SAR Granulatity Start/Stop	The two text entry fields used to specify the granularity, between 1 second (default) and 60 seconds, that should be applied to the start and stop times of every SAR. For example, if the granularity is 60 seconds (1 minute), when creating a SAR, it will always start on the minute mark, and when moving or stretching a SAR, it will always increase or decrease by a minute. This behavior also applies when copying a SAR or when rescheduling a confirmed SAR.
SAR Tolerance Plus/Minus	Plus and minus tolerances for the event. Refer to 452-ICD-SN/CSM for a description of tolerances.
Service Time Format	When a SAR panel is activated and a SUPIDEN is selected, this parameter determine the initial mode of display for the Nominal Start Time and Nominal Duration for all services shown on the SAR panel. In the Relative mode, both time displays are in the HH:MM:SS format. For the Absolute mode, both are in YYYY/DOY HH:MM:SS format and the column label for Nominal Duration is changed to Nominal Stop Time.
Recurrent Schedule Parameters	For recurrent scheduling, Same TDRS Event Gap is the amount of time necessary between services using the same TDRS and Different TDRS Event Gap is the amount of time necessary between services using different TDRSs
Default Freeze Interval	Choose to either use the value saved in NCCDS database or use the specified value as default. The Freeze Interval parameter contained in a SAR specifies the period of time prior to Event Start Time where the user wishes to receive the Fixed USM.
SAR Waitlist	This check box determines if, by default, the Mission prefers that NCCDS places declined SARs to be placed on the NCCDS waitlist. The default expiration time for SARs on the waitlist is specified in the SAR Waitlist Expire Time box.
Display Day Night Shading	Check the check box if Day/Night shading is to be shown on the Graphical Timeline. If this box is checked, the Maximum Period to Display Shading box contains the maximum time period of the Timeline that day/night shading will be shown.
Customer Priority	The default priority for the SAR. Priority ranges from 1 to 9 with 1 being the highest priority.
Use TSWs for all recurrent schedules and specific SAR check box	Check if desired to request NCCDS to consider stored TSWs when scheduling a single specific SAR or when sheduling multiple SARs generated through recurrent scheduling.

Button Selections

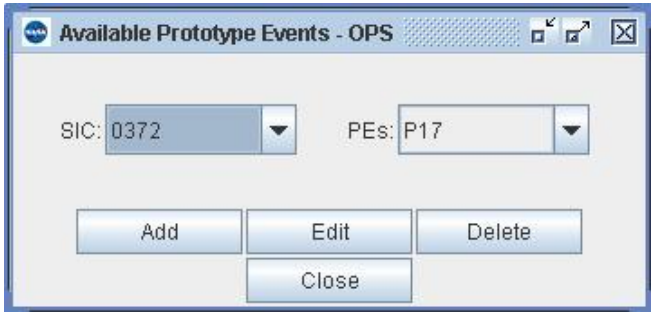
- **Submit**– Submits the changes to SNAS server for SNAS database updates.
- **Close**– Discards changes and closes Default Scheduling Parameters.

Mission Setup/Scheduling Defaults/Define Prototype Events

A Prototype Event (PE) is a pre-defined event with a fixed set of SSCs and pre-defined parameters in Nominal Start Time, Duration, Positive Tolerance, Minus Tolerance, Minimum Duration, Coupling and Bound. PEs are defined to facilitate the creation of a SAR. When a mission expects to submit SARs with the same list of SSCs and associated time and flexibility parameters on a routine basis, it saves time when building SARs with PEs rather than selecting the same sets of SSCs repeatedly. PEs are either defined by NCCDS or by SNAS. NCCDS-defined PEs are stored in NCCDS database and can not be modified by SNAS. However, an identical copy of the NCCDS-defined PEs exists on SNAS which allows SNAS to calculate the stop times of events scheduled with those PEs. SNAS-defined PEs are stored in SNAS database and their definition and maintenance are performed by the Mission Manager. Any Add/Modify/Delete request on a PE, NCCDS-defined or SNAS-defined, must be approved by the O&M administrator before it becomes effective.

The Define Prototype Events menu option is used to create, modify, or delete SNAS-defined PEs. To delete a PE, select a SIC and then the target PE and click on Delete. To initiate the creation of a PE, click on the Add button and an Add Prototype Event panel appears. To modify an existing PE, select a SIC and the target PE from the PE list and click on Edit and a Modify Protytpe Event panel appears. Both panels are similar and are intended to contain all information needed to fully define a prototype event. Note that in Add mode, the user needs to enter the SIC in the SIC text box. Detail information on creation and modification of a PE is provided below.

Figure 9.63. Select Prototypes Events Panel

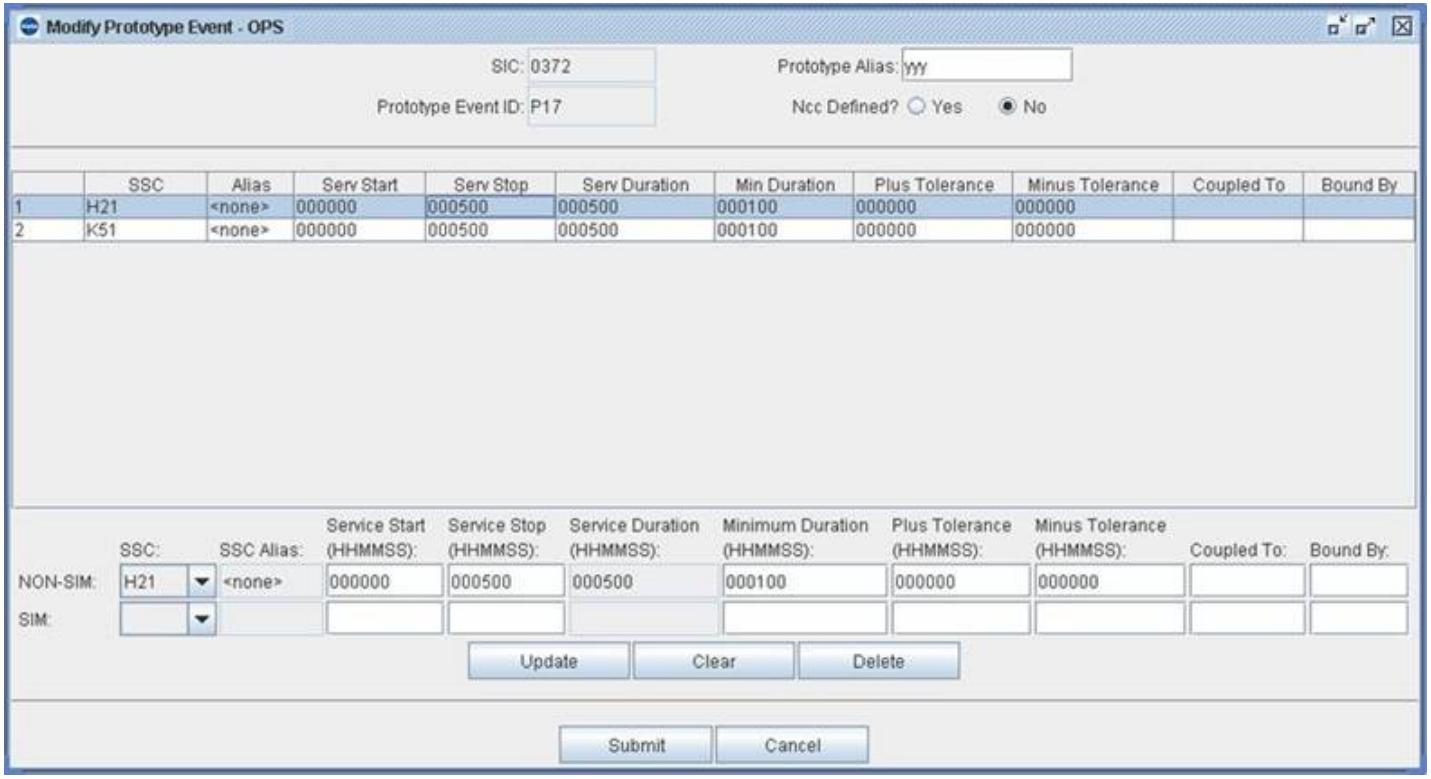


Button on the Available Prototype Events panel:

- **Add**- Calls the Add Prototype Events panel for definition of a new PE
- **Edit**- Calls the Modify Prototpye Events panel for modification of the definitions of the selected PE
- **Delete**- Removes the selected PE
- **Close**- Closes the Available Prototype Events panel

Add/Modify Prototype Events Panel

Figure 9.64. Modify Prototype Events Panel



Panel Operation

- Both the Add Prototype Event panel and the Modify Prototype Event panels contain four sections. The top section shows the PE identifiation information. For Add operation Mission Manager will enter the SIC and the PE ID and for Modify operation the SIC and the ID of the PE to be modified is shown. The bottom section is for submitting the PE addition/modification to O&M for approval. The upper middle section contains the list of services that makes up the PE. The lower middle section is for the selection of SSCs to be added to the service list.

- The conventional names of PEs are 3-character long starting with an upper case letter followed by two alphanumeric characters.

- A SNAS-defined PE is saved only to the SNAS database. NCCDS has no knowledge on what SSCs a SNAS-defined PE contains. Thus when building a SAR with a SNAS-defined PE, the SSCs defined for the PE are retrieved from the SNAS database and the SAR is submitted to NCCDS with all SSCs listed in the SAR.

- An NCCDS-defined PE and its SSCs are stored in NCCDS database. A copy of the PE and SSCs is also stored in the SNAS database. With them, SNAS will be able to determine the event stop time when the user selects an NCCDS-defined PE while building a SAR. Without the stop time, a SAR will not be able to be accurately displayed on the Timeline. When a SAR is built with an NCCDS-defined PE, only the PE code, not the SSCs, is included in the SAR.

- To add a service (an SSC and associated time parameters), select a desired SSC from the NON-SIM (Non-Simulation) SSC list box. Enter times, in HHMMSS format, in the Service Start, Service Stop, Minimum Duration, Plus Tolerance, and Minus Tolerance boxes. If desired, select a Simulation (End-to-End testing) service from the SIM SSC list box to go with the selected NON-SIM service. Enter times in its time boxes.

- Times entered must follow several rules. They include HH must be between 00 and 23, MM and SS must be between 00 and 59, Minimum Duration must be at least 1 minute, and Service Stop must be no less then Service Start plus Minimum Duration. Definitions of plus and minus tolerances, service coupling and bound services are available in the 452-ICD-SN/CSM.

- Click on the Add button to add the selected NON-SIM service, along with the accompanying SIM service if identified, to the PE. Repeat the procedures provided above to add additional services to the PE. If any already added service needs to be modified, click on the service tp move it back down to the lower middle section. Make the changes and click on Add to add it back up to the PE section.

- A PE can hold up to 16 services. Once a new service is added to the PE, SNAS automatically order the services according to the SAR service ordering rules specified in Section 7.2.1.5 Service Specification Codes Sequence of the 452-ICD-SN/CSM.

- After the O&M administrator has approved the PE Add/Modify/Delete request, the approval message appears on the MOC Main Control panel Squawk Box. To view a new/updated PE, either select the Define Prototype Event from the Main Control panel and select the SIC and PE from the selection panel and click on Edit, or select Query PE from the Main Control panel and then the SIC and PE to view.

Field Descriptions

Table 9.9. Add Prototype Events Panel Field Descriptions

Field	Description
Prototype Event ID	Text entry field for the three-character identifier.
Prototype Alias	Text entry field (eight characters) used to designate a unique, more meaningful prototype event identifier to serve as an alternative to the prototype ID.
NCC Defined	Radio button used to designate if the prototype event definition is either to be stored only in the SNAS database (SNAS defined), or stored in both NCCDS and SNAS databases (NCCDS defined).
NON-SIM and SIM SSC	List of SSCs to choose from. A NON-SIM SSC is a non-simulation service and it can be added to the PE service list with or without an accompanying SIM SSC. On the other hand, a SIM SSC can not be added to the service list without an accompanying NON-SIM SSC.
Service Start	Text entry field used to indicate the start time of this service relative to the Event Start Time of the scheduled event in which this PE is to be used. The time is in HHMMSS format where HH is between 00 and 23 and MM and SS are between 00 and 59.
Service Stop	Text entry field used to indicate the stop time of this service relative to the Event Start Time of the scheduled event in which this PE is to be used. The time is also in HHMMSS format. The Service Stop must be no less than the Service Start plus Minimum Duration described below.
Service Duration	Duration of this service. Duration is calculated from the Service Start and Service Stop when both boxes were filled and another box is clicked on.
Minimum Duration	Text entry field used to indicate the minimum duration of this service. The Minimum Duration is in HHMMSS format and must be at least 1 minute.
Plus/Minus Tolerance	Text entry fields used to indicate optional service flexibilities. They are of HHMMSS format. These parameters are described in detail in Section 7.2.1.1 Service Flesibility and Appendix D Guidelines for Use of Service-Level Flexibility Parameters of the 452-ICD-SN/CSM.

Coupled To	Text entry field to indicate if a service is coupled to another service. Refer to Appendix D Guidelines for Use of Service-Level Flexibility Parameters of the 452-ICD-SN/CSM for more information on coupling services.
Bound By	Text entry field to indicate that the start and stop times of the service are to be bounded by the start and stop times of another service. Refer to Appendix D Guidelines for Use of Service-Level Flexibility Parameters of the 452-ICD-SN/CSM for more information on this parameter.

Button Selections

- **Add**- Adds the selected SSC to the list of services displayed on the top section
- **Clear**- Clears the selected SSC without adding it to the service list
- **Delete**- Clears all services on the top section
- **Submit**- Submits the PE to SNAS server for submission to O&M administrator for approval
- **Cancel**- Closes the Add PE panel

Mission Setup/Scheduling Defaults/RS Edit Super Protoype

RS (Recurrent Scheduling) Prototypes and Super Prototypes are special types of prototypes used by Recurrent Scheduling to create sets of SARs. A prototype (PE) consists of one or more pre-defined services to be used as a group when a SAR is assembled and submitted to NCCDS for scheduling of these services. A prototype can be independent or be part of one and only one super prototype. A super prototype is an entity comprising two or more prototypes. IDs for both super prototypes and prototypes are 3-character names with an upper case letter followed by two alphanumeric characters. Only super prototype IDs should start with an 'S'.

The RS Edit Super Prototype menu option allows for the creation and maintenance of prototypes and the grouping of prototypes into super prototypes. When this menu option is selected, a SIC selection panel appears. Select a SIC. If no super prototype or prototype has been defined for this SIC, an RS Edit Super Prototype panel appears with all fields blank. If, on the other hand, one or more super prototype/prototype has already been defined for this SIC, an RS Super Prototype Selection panel appears and a list of super prototypes (starts with an 'S') along with prototypes not belonging to any super prototypes is available for selection. Select a super prototype or a prototype, click on the Select button and the RS Edit Super Prototype panel appears for the user to create/update prototypes and prototypes.

Figure 9.65. RS Super Prototype Selection Panel

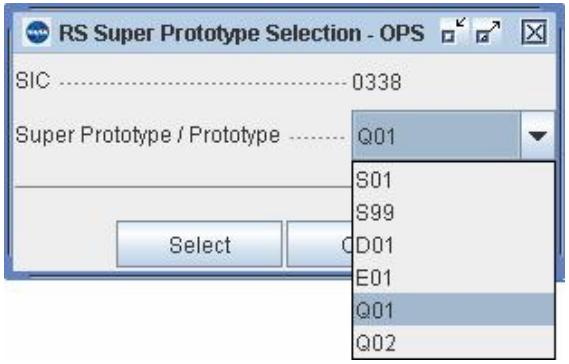
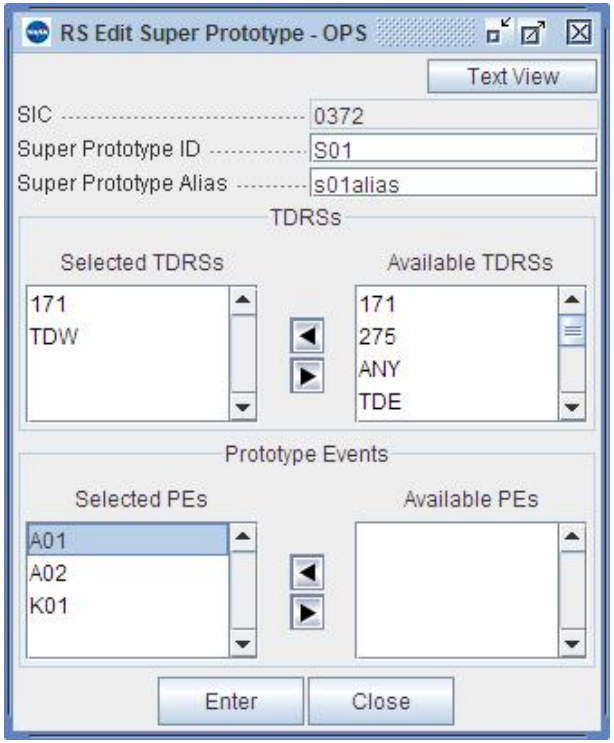


Figure 9.66. RS Edit Super Prototype Panel



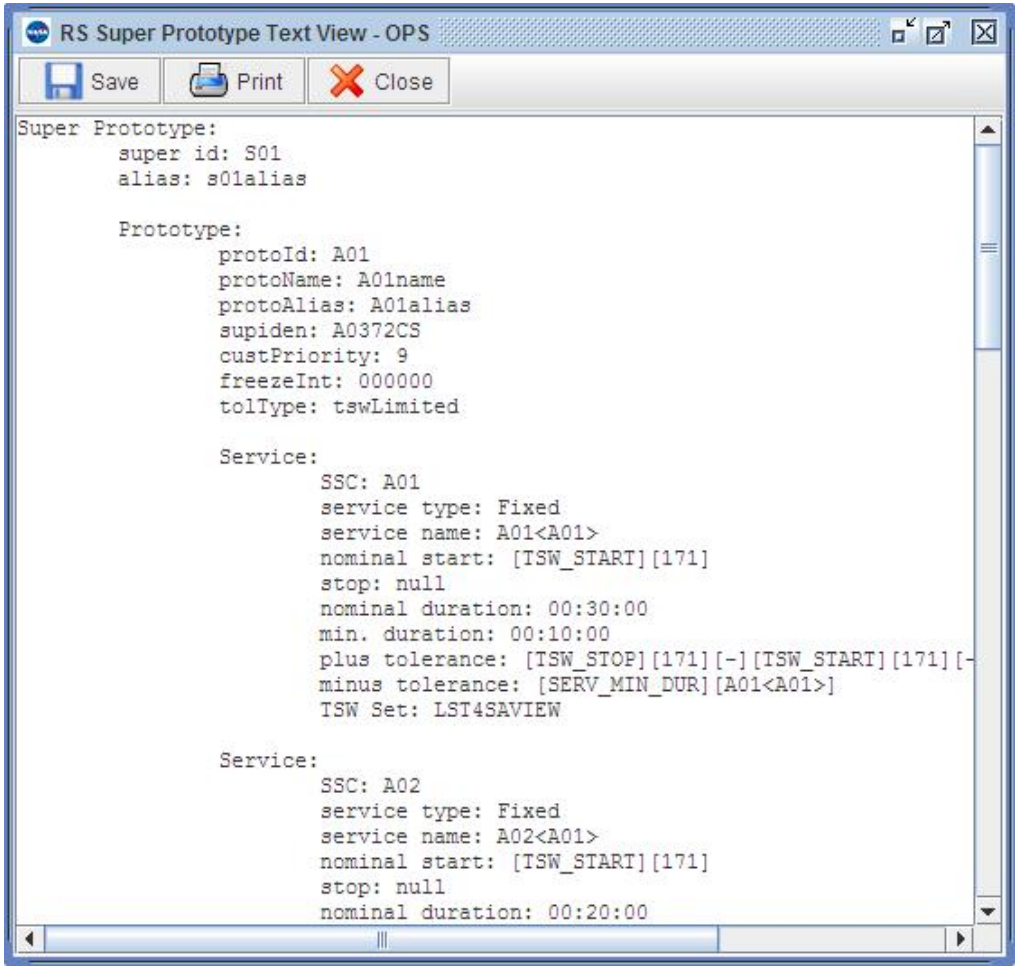
If a prototype was selected, the selected prototype will appear in the Selected PEs box by itself and the Super Prototype ID text box will be blank and inactive. If a super prototype was selected, the ID of the selected super prototype appears in the Super Prototype ID box and the prototypes making up the super prototype are listed in the Selected PEs box.

The Available PEs box contains a list of prototypes that can be selected to become part of the super prototype named in the Super Prototype ID box. To create a new available prototype, move the cursor to the Available PEs box and right click. Click on New PE and enter a 3-character prototype ID. The new prototype is now created and added to the Available PEs list. A prototype can be in either Selected PEs or Available PEs box but not both. To move a prototype from one box to the other, select the target prototype and click on the arrow button pointing away. (Note that whenever the Selected PEs box contains one or zero prototype, the Super Prototype ID box becomes inactive and the super prototype ID displayed in

the box disappears. When the Super Prototype ID box moves from inactive to active mode after two or more PEs were added to the Selected PEs list, the super prototype ID that was in the box before will not be recovered. The user will need to reenter a super prototype ID although the ID could be the same as the one before the Super Prototype ID box turned inactive.)

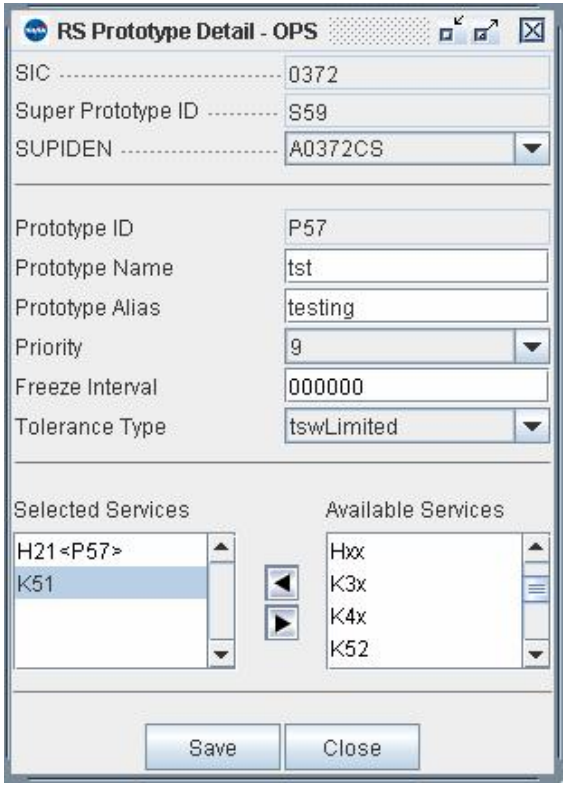
Clicking on "Text View" button will display "RS Super Prototype Text View" panel. This panel displays the textual representation of the contents of the super prototype or prototype. Editing is not allowed in this panel and it is intended for viewing only. It provides a display of all of the paramaters of the super/ prototype in one panel for easy viewing.

Figure 9.67. RS Super Prototype Text View Panel



One or more services can be selected for a prototype listed in the Selected PEs box. To select or update services for a prototype, double click the prototype on the Selected PEs list. An RS Prototype Detail panel appears.

Figure 9.68. RS Prototype Details Panel

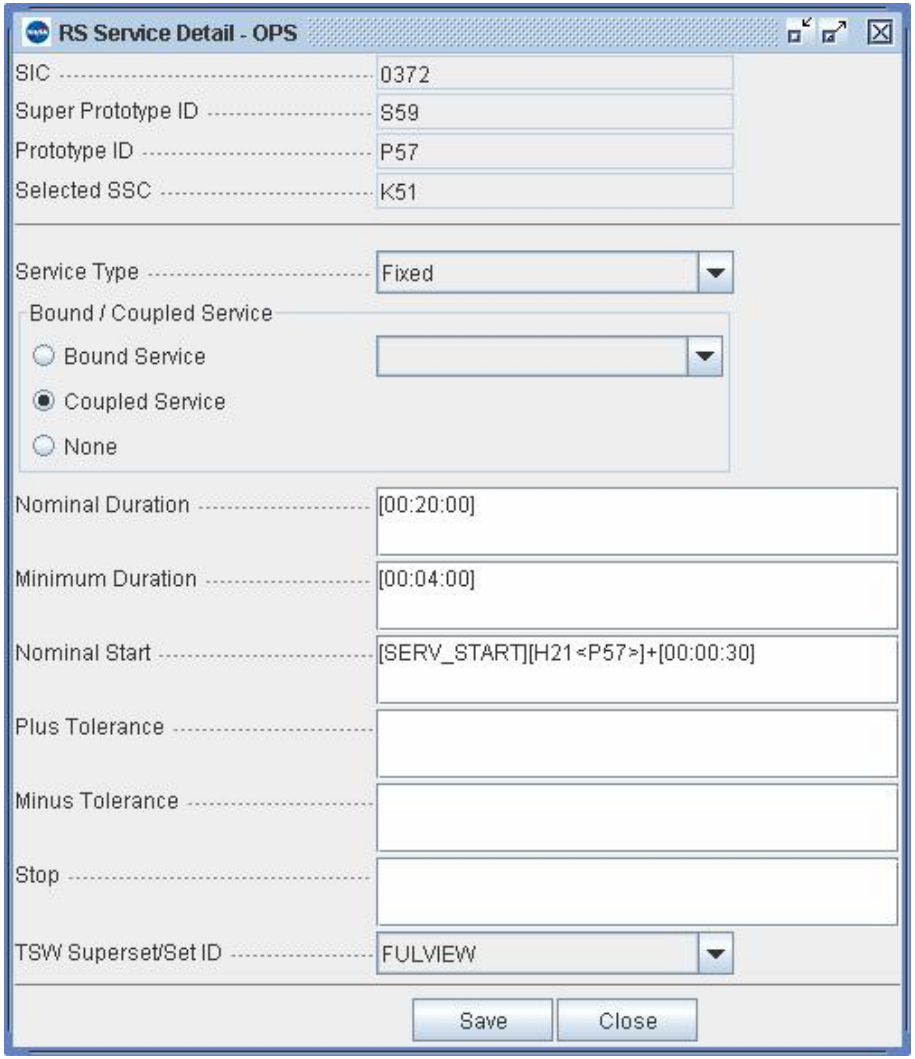


The text box labeled Prototype ID shows the ID of the selected prototype and the Selected Services box lists the services that have been selected for the prototype. The Available Services box contains a list of available services that can be selected and added to the prototype's service list. An available service is identified by its SSC name followed by, if applicable, the prototype event the service was included in. A service can be added to or removed from the Selected Services list. To add a service, select the service from the Available Services list box and click on the left-pointing arrow. To remove a service from the Selected Services list, select the service and click on the right-pointing arrow.

The Tolerance Type parameter is used to determine if additional flexibility on event plus and minus tolerances is to be allowed when generating SARs through Recurrent Scheduling. More flexibility is allowed if the Tolerance Type is "Sub-Interval Limited." In this case if TSW starts after the start of sub-interval, the difference between TSW start and sub-interval start gets added to minus tolerance. Similarly, if TSW stops before the end of sub-interval, the difference between the TSW stop and sub-interval stop gets added to plus tolerance. When "TSW Limited" is selected, SARs are scheduled based on specified plus/minus tolerances and no additional flexibility is available.

It is recommended that the properties of all selected services for a prototype be fully defined before submitting the prototype for insertion into or updates in the SNAS database. When executing Recurrent Scheduling with the PE, the order RS processes the services will be the order the services appear in the Selected Services box. The properties for a selected service are defined or updated through the RS Services Detail panel. Double click the service in the Selected Services box to activate the RS Service Details panel.

Figure 9.69. RS Service Details Panel



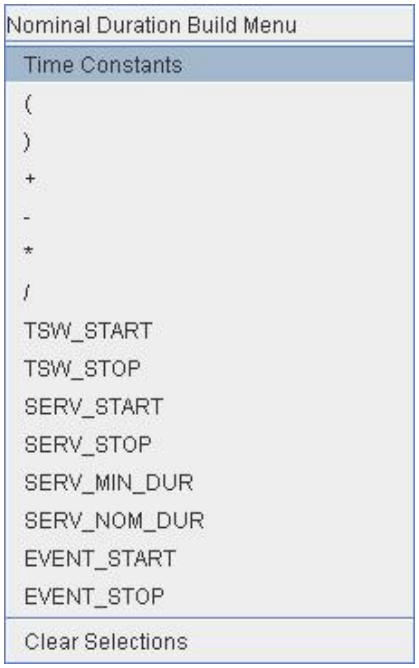
The Service Type is either Fixed or Variable. A Fixed service uses Nominal Start and Nominal Duration to calculate the Stop time. A variable service specifies a Nominal Start and Stop times and the duration of the variable service will be calculated from its Nominal Start and Stop times. A service can be coupled/bound to another service which must be defined already. The start of a coupled service has to reference the start of the service that it is coupled to. When either Bound or Coupled radio button is selected, the pulldown box alongside will contain a list of services, excluding the service currently being defined/edited, selected for this PE. The user needs to select a service from the list for the service being defined/edited to be coupled to or bound by.

Time parameters of a service can reference parameters of another service only if that service is defined already. For example, the first service on the list of services can not reference the other services on the list. The second service can only reference the first service. The third service can reference either first or second service and so forth. Any forward referencing will likely result in unresolved reference during Recurrent Scheduling and the RS process will either be unable to complete or yield incorrect SARs.

Each of the six time boxes -- Nominal Duration, Minimum duration, Nominal Start, Plus Tolerance, Minus Tolerance, and Stop -- is to contain an expression or is left blank. An expression consists of a series of "tokens" chosen from an available token list. To build an expression for a time box, move the cursor to the time box and right click. A token list appears. Move the cursor to the desired token and left click and the selected token will be appended to the time box. If SERV_START or SERV_STOP token is selected, a panel appears for selection of a service available to be referenced by the token. If EVENT_START or EVENT_STOP is selected, a panel appears for selection of an eligible event to be referenced by the token. If the service being edited is part of a super prototype, selecting TSW_START or TSW_STOP will launch a TDRS selection panel and the selection of a TDRS as a TSW reference is required. Repeat the token selection process to build the full expression.

Figure 9.70. Pulldown List of Services

Figure 9.71. List of RS Prototype Service Expression Tokens:



For example, assume the superprototype S01 for a SIC is to be defined. S01 will contains 2 PEs, P01 and P02, and prototype P01 will contains 2 services (SSCs), M01 and N01, that have already been defined in the SNAS database. M01 service is to start two minutes after event P01 starts and N01 service is to start 30 seconds after service M01 starts. The nominal duration of each service is 10 minutes and the minimum duration of each service is 1 minute. Here are

the procedures:

1. Select RS Edit Superprototype menu option. Select the target SIC.
2. Since there's no PEs or super prototypes exist, an RS Edit Super Prototype panel appears.
3. Move the cursor to inside of the Available PEs box. Right click and click on the New PE option. Enter **P01**on the ensuing New Prototype panel to add it to the Available PEs box.
4. Repeat Step 3 to add **P02** to the Available PEs list.
5. Select **P01**in the Available PEs list and click on the left-pointing arrow to select the PE for the super prototype. P01 now appears in the Selected PEs box.
6. Repeat Step 5 to put **P02**in the Selected PEs box. The Super Prototype ID text box is now active since we have more than one PE selected. Enter **S01**in the Super Prototype ID text box.
7. To define services for P01, double click on **P01**in the Selected PEs box and an RS Prototype Details panel appears with S01 and P01 as the super prototype and prototype IDs, respectively.
8. Scroll the Available Services box to locate M01 service. Click on **M01**and the left-pointing arrow to put it in the Selected Services box.
9. Repeat Step 8 to select **N01**.*Note that because the start time of N01 depends on M01, M01 should be selected first followed by N01.*
10. Double click **M01**and an RS Service Details panel appear with the super prototype, prototype and service IDs displayed. Select Fixed type.
11. Move the cursor to the Nominal Duration box and right click. Select Time Constants from the token list. Enter 00:10:00 on the ensuing panel and click on OK. The Nominal Duration box now contains [00:10:00].
12. Move the cursor to the Minimum Duration box and right click. Select Time Constants. Enter 00:01:00 on the ensuing panel and click on OK. The Minimum Duration box now contains [00:01:00].
13. Move the cursor to the Nominal Start box and right click. Select EVENT_START from the token list. On the ensuing event selection panel select P01 and the box now shows [EVENT_START][P01]. Right click again and select '+' . Right click again and select Time Constants. Enter 00:02:00 and click on OK. The Nominal Start box now contains {EVENT_START][P01]+[00:02:00].
14. Click on the Save button at the bottom of the RS Service Details panel. The M01 service in the Selected Services box on the RS Prototype Details panel for P01 now shows **M01<P01>**, indicating the service definitions just completed for M01 were for P01 prototype.
15. Double click **N01**in the Selected Services box for P01 and an RS Service Details panel for S01/P01/N01 appears. Again select Fixed type.
16. Set the Nominal Duration and Minimum Duration to 10 minutes and 1 minute, respectively.
17. Move the cursor to the Nominal Start box, right click, and choose SERV_START. On the ensuing service selection panel, select **M01<P01>**. Additionally, select '+' and a Time Constants of 00:00:30. The Nominal Start box will show **[SERV_START][M01<P01>]+[00:00:30].**
18. Click on the Save button at the bottom of the RS Service Details panel. The N01 service in the Selected Services box on the RS Prototype Details panel for P01 now shows **N01<P01>**. Click on the Save button at the bottom of the RS Prototype Details panel to save P01 prototype and its service definitions.
19. Click on the Submit button at the bottom of the RS Edit Super Prototype panel to update the database.

Note that the syntax of any of the service time parameter expressions. The syntax is checked when prototypes/ superprototypes are being used later in Recurrent Scheduling process. Some cross referencing of PEs and services are checked and the database updates will not be performed if any errors are identified.

Field Descriptions

Table 9.10. RS Edit Super Prototype Panel Field Descriptions

Field	Description
Nominal Start	The start time of the service relative to the Event Start Time
Nomial Stop	The stop time of the service relative to the Event Start Time
Nominal Duration	Duration of the service
Minimum Duration	The minimum duration of the service. Must be no less than 1 minute
Plus/Minus Tolerance	Service flexibility. Refer to Appendix D Guidelines for Use of Service-Level Flexibility Parameters of the 452-ICD-SN/CSM for more information
Service Type	Fixed or Variable. A Fixed service uses Nominal Start and Nominal Duration to calculate the Stop time. A Variable service uses Nominal Start and Stop times to calculate service duration

Mission Setup/Scheduling Defaults/User Defined TDRS Constraints

A useful feature of RS is its ability to consider, and schedule around, previously created SARs as well as user-defined constraints that are within the time period scheduled. This menu option allows for definitions of the constraints. Each constraint consists of a start time and a stop time, a TDRS and a service type. When constraints are considered during RS, the constraint time period for specific TDRS service type is excluded from the scheduling.

Upon the selection of User Define TDRS Constraints menu option, the user is prompted to select a SIC. Selecting a SIC and all currently defined user constaints are displayed on the top section of a User-defined TDRS Constraints panel. User-defined constaints can be added, modified or deleted. To add a new constraints, move the cursor to the constraint display area and right click. Select Add and an Add User-defined TDRS Constraints panel appears that allows entries of Start Time, Stop Time, TDRS and Service information for the new constraints. To delete a constraint, left click on the constraint, right click and left click on the Delete option. Confirm the delete action on the ensuing confirmation dialog box. To modify a constraint, left click on the constraint, right click and left click on the Modify option. Enter new values on the Modify User-defined TDRS Constraints panel and click on Save. The results of Add/Modify/Delete change will appear on the panel.

The user can also shift a number of selected existing constraints by the same left or right amount. To perform a time shift, select the constraints, enter a shift amount in +/-DDD HH:MM:SS format and click on the Slip button.

After completing all desired changes, click on the Submit button to send the change requests to the SNAS server for database updates.

Figure 9.72. User-defined TDRS Constraints

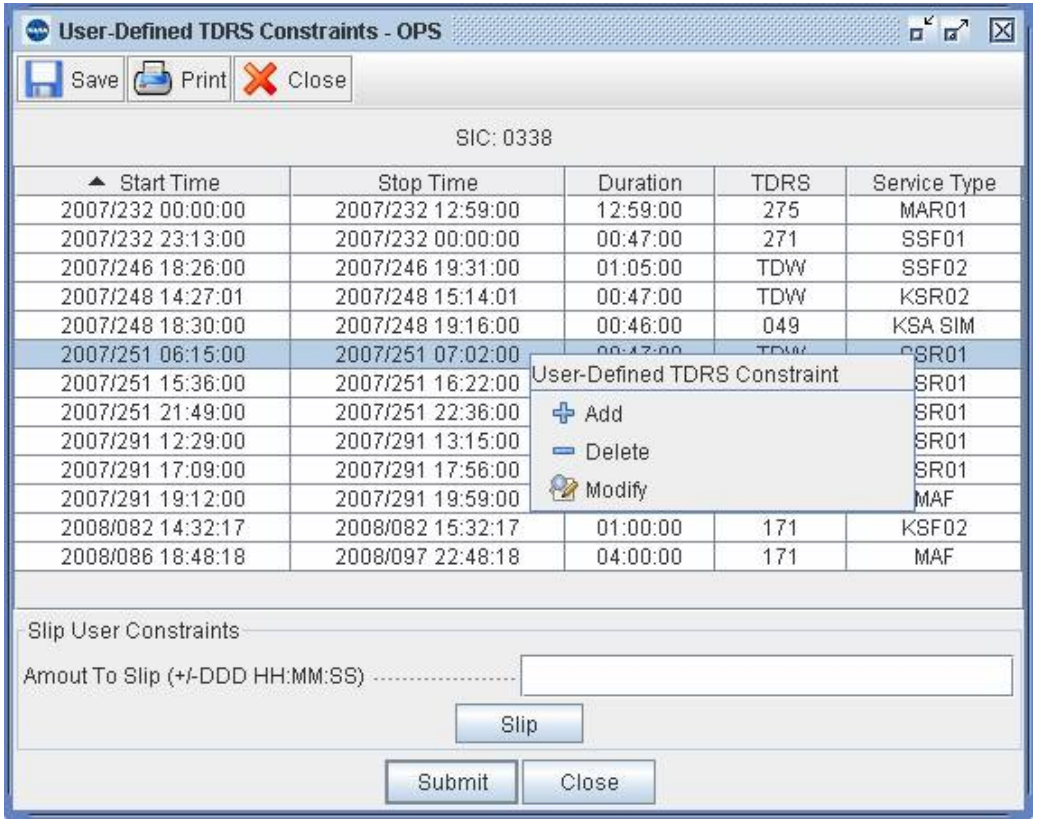
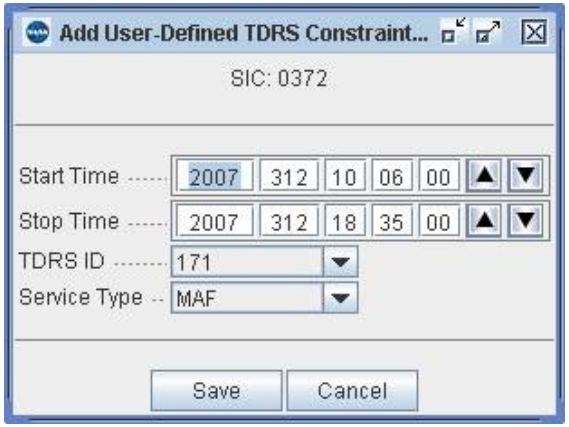


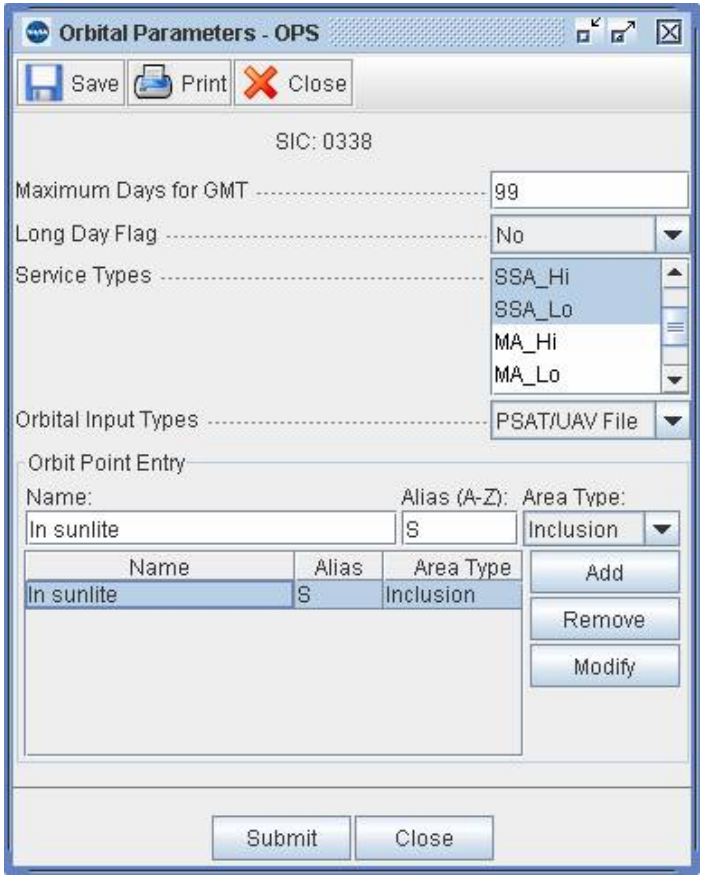
Figure 9.73. Add User-defined TDRS Constraints



Mission Setup/Scheduling Defaults/Orbital Parameters

When this menu option is selected, the Mission Manager is prompted to select a SIC. Once a SIC is selected, the Orbital Parameters panel is initiated.

Figure 9.74. Orbital Parameters Panel



Orbital parameters are used for the creation of TDRS Scheduling Windows (TSWs) from Flight Dynamic Facility (FDF) products User Antenna Views (UAVs) and Predicted Site Acquisition Table (PSAT). For missions not using PSATs and UAVs, the only meaningful parameter on this panel is Orbital Input Types which, in EPS processing, specifies the type of orbit file -- TCW or TSW -- to process.

The bottom half of the panel is for defining Orbit Point type. Each orbit point type is identified by a single upper case letter (Alias). It is of either Inclusion (to be added to the viewing window) or Exclusion (to be removed from the viewing window) type. Orbit point data is contained in PSAT files.

Field Descriptions

Table 9.11. Orbital Parameters Panel Field Descriptions

Field	Description
SIC	Spacecraft Identification Code for Orbital Parameters
Max. Days for GMT	Text entry field used to enter a value from 1 to 9999. Limiting days from current processing time for orbital data Greenwich Mean Times (GMTs).

Long Day Flag	This Yes/No flag is used in PSAT smoothing. A Yes would lengthen day to allow addition of daylight entrance or exit event.
Service Types	Multiple selection lists indicating which service types (MA Hi, MA Low, SSA Hi, SSA Low, KSA Hi, KSA Low, SMA Hi, SMA Lo) are to be included when creating TSWs.
Orbit Point Name	A character string that describes the type of Orbit Point as it appears in the PSAT or UAV..
Orbit Point Alias	An upper case letter that identifies the type of Orbit Point. An 'S' indicates Sunlight Entry/Exit Orbit Point type in this example.
Area Type	Orbit Point can be either Inclusion or Exclusion. An Inclusion type of Orbit Point is be added to the viewing window while an exclision Orbit Point type is to be removed from the viewing window.

Button Selections

- **Add**– Adds a new Orbit Point definition to the list of Orbit Points.
- **Remove**– Removes the selected Orbit Point from the list
- **Modify**– Populates the Orbit Point row with the selected Orbit Point and allows the user to modify these parameters for the Orbit Point.
- **Submit**– Submits changes to SNAS server for database updates.
- **Close**– Closes the panel without changes.

Mission Setup/Scheduling Defaults/Define TSW Set ID

TSW Set IDs are required for all missions that uses TSWs sent from SNAS to NCCDS and stored in NCCDS database for scheduling. TSW Set IDs are 10-character long. For a mission that uses TCW or TSW as its orbit data, TSW Set IDs can be any 10-character string but they should match the TSW Set IDs contained in the TSW or TCW files the mission imports. For a mission that uses PSAT and UAV as their orbit data source, the first character of a TSW Set IDs should be either an 'S' for single access or an 'M' for multiple access, the second character should be either an 'H' for high antenna gain or 'L' for low gain, and the third character should be either an 'F' for forward service or an 'R' for return service. The remaining seven characters forms a "super set" that is used to describe the type of TSW set it is.

When this option is selected from the main control panel, the user is prompted to select a SIC. After a SIC is selected, the Define TSW Set ID panel appears. The panel has a scrolling list that displays existing TSW Set IDs. To add a new TSW Set ID, move the cursor to inside of the TSW Set ID list and right click. Click on Add, enter TSW Set ID name in the ensuing panel and click on Save. To modify an existing TSW Set ID, select the ID on the list and right click. Click on Modify and change the ID on the ensuing panel. To delete an existing TSW Set ID, select the ID and right click. Click on Delete to remove from the list.

Figure 9.75. Define TSW Set IDs Panel

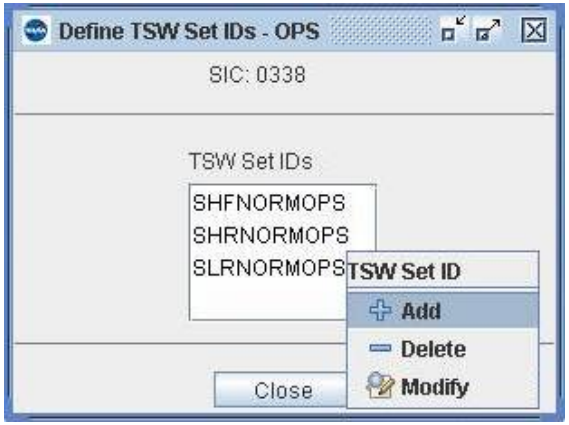


Figure 9.76. Add/Modify TSW Set IDs Panel

Mission Setup/Scheduling Defaults/Define Orbital Constraints

For missions using PSAT and UAV types of orbit data, this menu option is used to define and maintain orbital constraints specifications. The Mission Manager can select one or more Orbit Point types from the defined list to implement when creating TSWs. Orbit Points are also referred to as anomalies or interferences and the types of anomalies include Sun Interference Periods (SIPs), South Atlantic Anomaly (SAA), Frequency Modulation (FM) radar zone (Radio Frequency Interference [RFI]), Van Allen Belt entry, TDRS Sun entry, and TDRS multipath fringe entry. Specifications of Sun Alighments (TDRS to Spacecraft, Spacecraft to TDRS, Ground Terminal to TDRS, Multipath Fringe, and Sun Intrusion) implementations are also performed from this menu option.

When this menu option is selected, a SIC selection panel appears. Select a SIC and a TSW Set ID selection panel appears. Select a TSW Set ID and the Define Orbital Constraints Panel is initiated. The top section shows the list of types of Orbit Points to implement while creating TSWs from PSATs and UAVs. To Add an Orbit Point type, select the type on the left, right click and click on Add. An Edit Orbit Point panel appears for the Mission Manager to enter Entry and Exit Adjustments. After the panel is populated and Save button is clicked, the Orbit Point type is added to the display box. An Orbit Point type entry displayed on the right display box can be either modified or deleted. To modify an Orbit Point type, select the item and right click. Click on Modify and an Edit Orbit Point panel appears. Once changes are made and Save button is clicked, the changes are reflected on the Orbit Point display box. To remove an Orbit Point for implementation, select the Orbit Point and right click. Click on the Drop option to remove it.

The bottom section of the panel allows for specifying how Sun Alignments are to be implemented. There are two Mask types: Display and Validate, and Display Only. Seleting a Mask type and all remaining boxes show alignment specifications for that Mask type. A Display and Validate Mask type indicates that the anomalies are to be considered when TSWs are being generated. A Display Only specifies that they are for display only and will not be implemented for TSW creation.

Figure 9.77. Define Orbital Constraints Panel

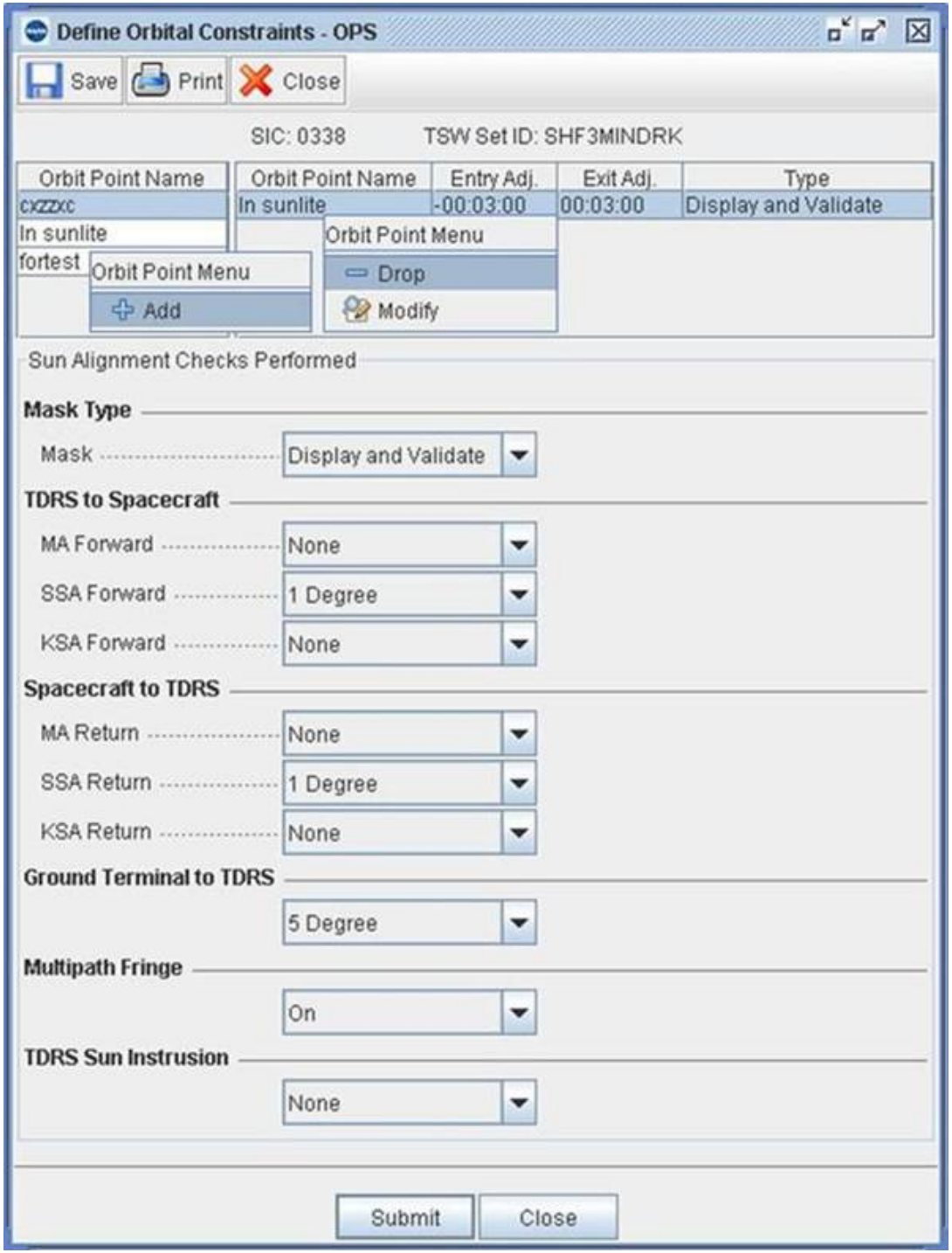
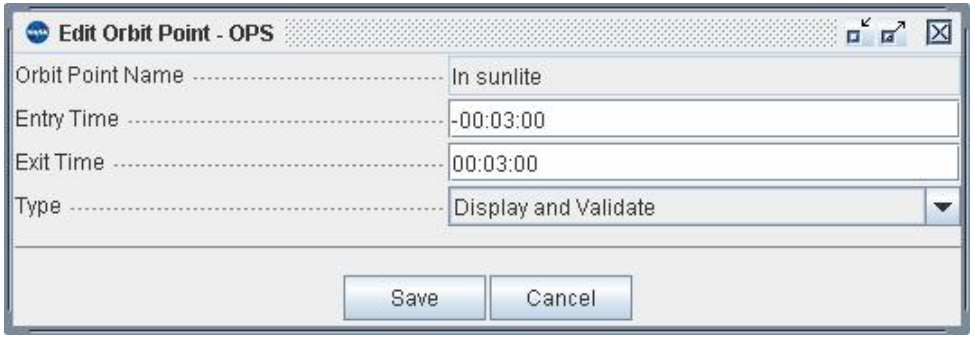


Figure 9.78. Add Orbital Constraints Panel



Field Descriptions

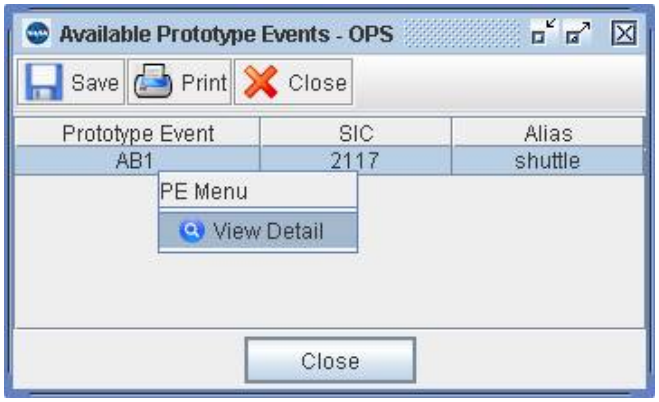
Table 9.12. Define Orbital Constraints Panel Field Descriptions

Field	Description
Orbit Point Name List	Types Orbit Points to be implemented during TSW creation. Each Orbit Point Type includes entry and exit adjustments.
TDRS-to-Spacecraft Sun Alignment Checks	Specify whether TDRS-to-Spacecraft Sun Alignment checks are to be performed for the following services, and if so, to what extent (1, 3, or 4 degrees). 1. MA forward. 2. S-band Single Access (SSA) forward. 3. Ku-band Single Access (KSA) forward.
Spacecraft-to-TDRS Sun Alignment Checks	Specify whether Spacecraft-to-TDRS Sun Alignment checks are to be performed for the following services, and if so, to what extent (1, 3, or 4 degrees). 1. MA return. 2. SSA return. 3. KSA return.
Ground Terminal-to-TDRS Sun Alignment Check	Specify whether a Ground Terminal-to-TDRS Sun Alignment check should be performed, and if so, to what extent (1 or 5 degrees).
Multipath Fringe (MPF) Check	Specify whether communication between satellite and TDRS should be performed when atmosphere is between satellite and TDRS.
TDRS Sun Intrusion	Specify whether Sun Entry or Sun Exit check should be performed during satellite and TDRS communication.

Mission Setup/Scheduling Defaults/Available Prototype Events

This panel is accessible to all user roles and does not allow for modification to the specific Prototype Events. When Available Prototype Events is selected, the user is prompted to select a SIC. Once a SIC is selected, the Available Prototype Events panel is launched. The user can select a PE, right click and then click on View Detail to initiate a read-only View Prototype Event panel to view details on the selected PE.

Figure 9.79. Available Prototype Events Panel



Chapter 10. Orbital View & Vectors Menu Selections and Panel Descriptions

Table of Contents

Orbital View & Vectors Menu
Orbital View & Vectors/Generate Geocentric
- Field Descriptions
- Panel Operation

Orbital View & Vectors/Generate Geodetic
- Field Descriptions
- Panel Operation

Orbital View & Vectors/Import
- Orbital View & Vectors/Import/Bulk IIRV
- Orbital View & Vectors/Import/TCW
- Orbital View & Vectors/Import/PSAT Only
- Orbital View & Vectors/Import/PSAT/UAV
- Orbital View & Vectors/Import/TSW

Orbital View & Vectors/Transmit TSW(s)
- Field Descriptions
- Button Selections

Orbital View & Vectors Menu

This section contains a detailed description of how to use the SNAS MOC Client application to send state vectors to the NCCDS and DAS. It is not meant to be a comprehensive guide on how the Space Network processes state vectors. For more detailed information, refer to the*SN Users' Guide (SNUG)*, the*NCCDS Operations Concept Document*, the*452-ICD-SN/CSM*, the*DAS/SNAS ICD*, the*NCC-FDF/WSC ICD*, and the*DAS Operations Concept Document*.

Figure 10.1. Orbital View & Vectors Menu

- The Geocentric State Vector and Geodetic State Vector menu items allow the user to generate an IIRV Message for submission to the NCCDS or a State Vector Update message to DAS and perform the transmission.

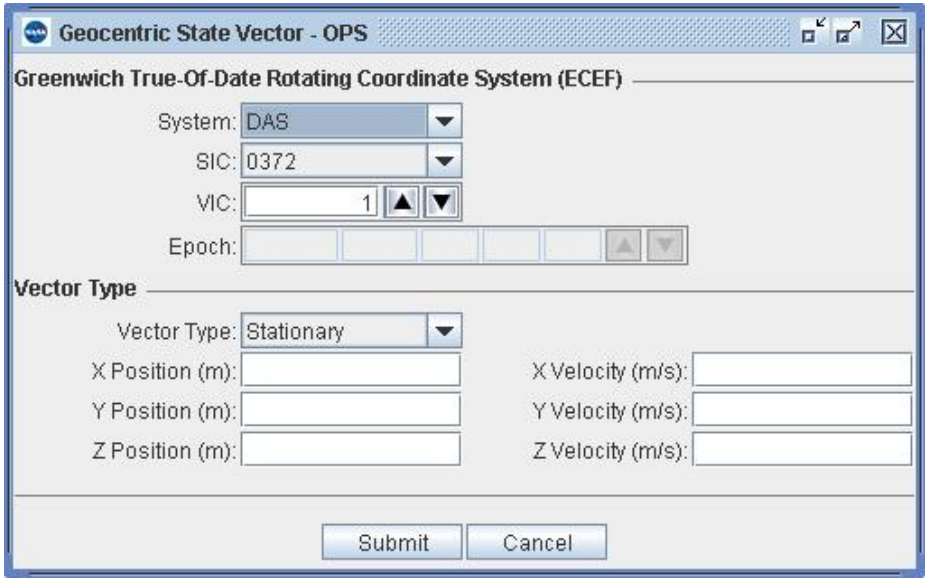
- State Vectors contain the spacecraft position and velocity for a given epoch. In addition, they contain a SIC, vector destination, and vector type. The MOC Client only generates stationary (fixed) and orbiting (free flight) state vectors. Maneuver sequence vectors are not supported.

- The user can also manually import files containing State Vectors, IIRVs or other orbit data files including TCW, PSAT, UAV and TSW.

Orbital View & Vectors/Generate Geocentric

The Geocentric State Vector Generation Panel allows the user to submit a state vector using Cartesian (XYZ) position and velocity components for an object that is stationary or orbiting. The panel is shown below. The position and velocity components should be referenced to the Greenwich True-of-Date Rotating Coordinate System (see the NCC-FDF/WSC ICD for details).

Figure 10.2. Generate Geocentric Panel



Field Descriptions

Table 10.1. Generate Geocentric Panel Field Descriptions

Field	Description
System	Destination(s) of State Vector transmission: NCC, DAS or Both, depending on the SIC(s) the user selected on login.
SIC	Spacecraft Identification Code.
VIC	Vehicle Identification Code.
Epoch	Epoch time. An instant in time used as a point of reference.
Vector Type	For DAS: Orbiting (Type 1) or Stationary (Type 8). For NCC: Orbiting (Type 1), Forced (Type 2), spare (Type 3), Maneuver Ignition (Type 4), Maneuver Cutoff (Type 5), Reentry (Type 6), Powered Flight (Type 7) or Stationary (Type 8).
X Position	X-Position in meters.
Y Position	Y-Position in meters.
Z Position	Z-Position in meters.
X Velocity	X-Velocity in meters/second.
Y Velocity	Y-Velocity in meters/second.
Z Velocity	Z-Velocity in meters/second.

Panel Operation

- When the panel is opened, the Epoch is initially set to the current UTC. The user must first select a destination (NCC, DAS, or Both), if available, then select from a list of SICs that are appropriate for that destination. If DAS is selected for a Stationary vector, then the Epoch field is cleared and disabled. In this case, the SNAS server sets the Epoch to ensure that it is in the past. For Stationary vectors sent to Both, the Epoch field remains enabled. However, the Epoch entry is ignored for the state vector sent to DAS and is instead set by the server in the same manner as if it were destined only for DAS.

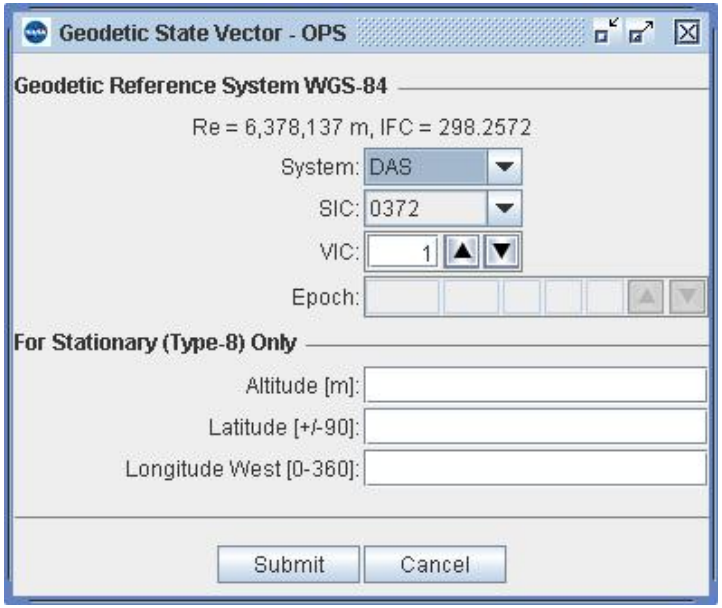
- At a minimum, the XYZ position fields must be filled in prior to submitting the state vector. The velocity component fields are optional fields and may be left blank. The position and velocity fields are numeric floating-pointing fields, which may contain only numeric digits and an optional minus sign. Position fields are limited to twelve digits. Velocity fields are limited to nine whole number digits and eighteen decimal digits. Regardless of the field length limits, the position and velocity fields are truncated to the proper length prior to transmission to NCCDS or DAS.

- Pressing Cancel will close the panel without submitting a state vector. The Submit button is used to submit the request to the server, where a unique Message ID is assigned and the message is formatted for transmission to the NCCDS or DAS. For state vectors transmitted to the NCCDS, if the transmission is successful, then aconfirmation message will appear in the Alert panel.

Orbital View & Vectors/Generate Geodetic

The Geodetic State Vector Generation Panel allows the user to submit a stationary state vector using geodetic coordinates (latitude, longitude, altitude). The panel is shown below. The MOC Client converts the geodetic coordinates to Cartesian position components and zero velocity components based upon the World Geodetic System (WGS) 1984 (WGS-84) Reference System.

Figure 10.3. Generate Geodetic Panel



Field Descriptions

Table 10.2. Generate Geodetic Panel Field Descriptions

Field	Description

System	Destination(s) of State Vector transmission: NCC, DAS or Both, depending on the SIC(s) the user selected on login.
SIC	Spacecraft Identification Code.
VIC	Vehicle Identification Code.
Epoch	Epoch time. An instant in time used as a point of reference.
Altitude	Altitude. Height expressed in meters. Vector data is converted to geocentric coordinates and stored in the SNAS database the same as geocentric vectors.
Latitude	Latitude. Angle between the vertical at the location and the plane of the equator expressed in degrees from –90 to +90. Vector data is converted to geocentric coordinates and stored in the SNAS database the same as geocentric vectors.
Longitude West	Longitude West = Angle between the prime meridian and the meridian of the location, taken positively towards the west expressed in degrees from 0 to 360. Vector data is converted to geocentric coordinates and stored in the SNAS database the same as geocentric vectors.

Panel Operation

- When the panel is opened, the Epoch is initially set to the current UTC. The user must first select a destination (NCC, DAS, or Both), then select from a list of SICs that are appropriate for that destination. If DAS is selected, then the Epoch field is cleared and disabled. In this case the SNAS server sets the Epoch to ensure that it is in the past. For state vectors sent to Both, the Epoch field remains enabled. However, the Epoch entry is ignored for the state vector sent to DAS and is instead set by the server in the same manner as if it were destined only for DAS.

- Altitude, Latitude, and Longitude West are numeric fields, which may contain only numeric floating point digits and an optional minus sign.

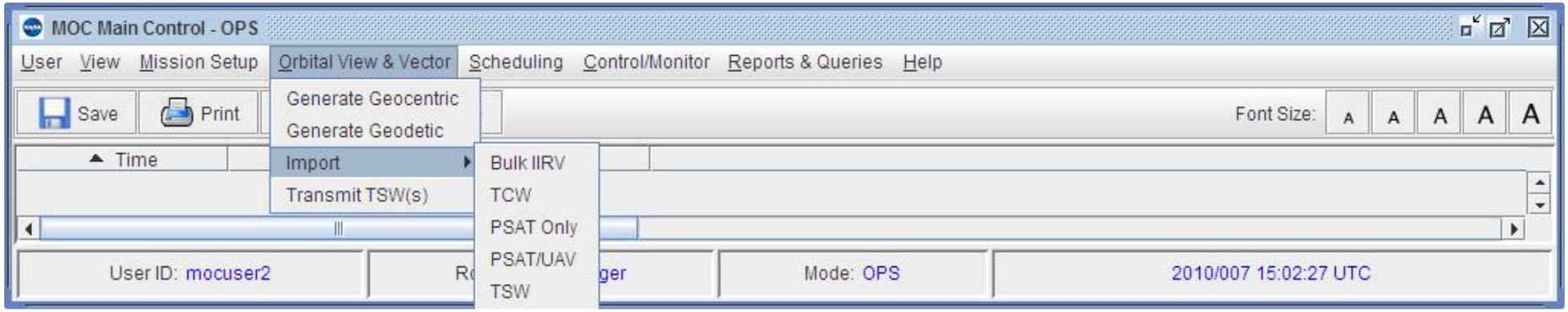
- The Clear button clears all entries in the panel. Pressing Cancel will close the panel without submitting a state vector. The Submit button is used to submit the request to the server, where a unique Message ID is assigned and the message is formatted for transmission to the NCCDS or DAS. For state vectors transmitted to the NCCDS, if the transmission is successful, a confirmation message will appear in the Alert panel.

Orbital View & Vectors/Import

The Import menu options allow the user to select a user-generated file containing State Vectors, IIRVs, TCWs, PSATs, UAVs or TSWs for processing and/or transmission to NCCDS and/or DAS.

When State Vector or Bulk IIRV option is selected, a file chooser including the selection of destination (DAS/NCCDS/ Both) appears. For remaining options a standard file chooser is displayed allowing the user to browse directories on the client workstation and select the file to be processed/transmitted.

Figure 10.4. Otbital View & Vectors/Import Menu



Orbital View & Vectors/Import/Bulk IIRV

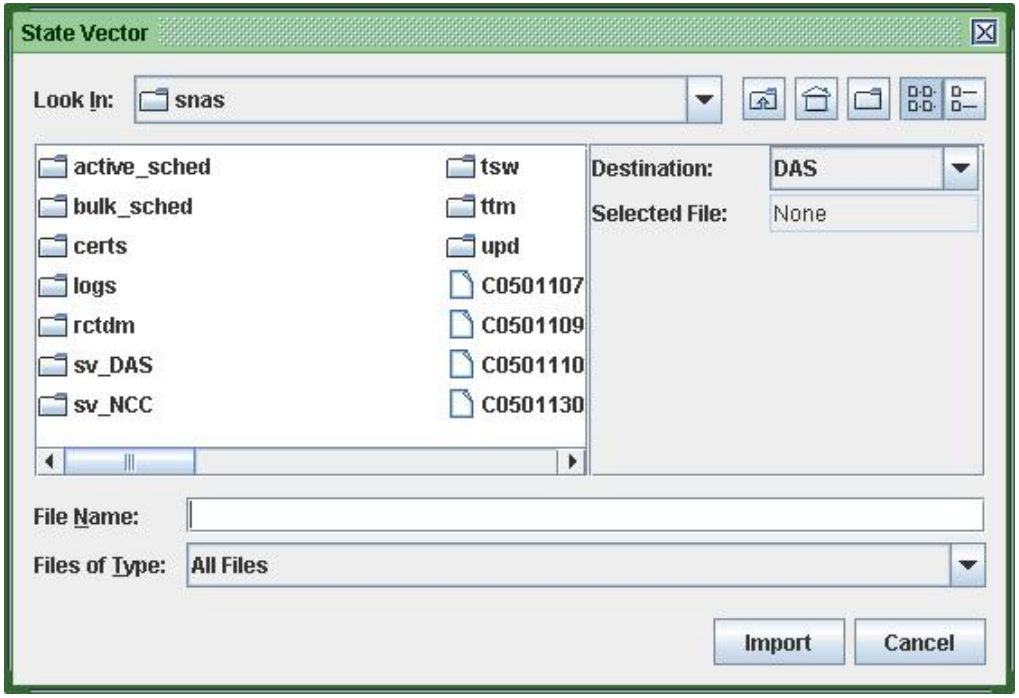
State vectors are used to transmit site prediction and satellite acquisition data. These messages use the IIRV format. An IIRV contains the spacecraft position and velocity vectors for the given epoch time; the IIRV also contains information indicating whether it is a nominal or real-time message, and the type of vector contained (free flight, powered flight, reentry, etc.). The IIRV format is also used for intercenter exchange of acquisition data. For format of state vectors or IIRVs messages to be transmitted to NCCDS, refer to Section 9.5 of the 452-ICD-SN/CSM. For messages to be transmitted to DAS, refer to Section 5.1.7 of the 452-ICD-DAS/SNAS.

The State Vector File Manual Import panel allows the user to select a state vector file to be transmitted to NCCDS and/or DAS. The panel is a file chooser dialog, which allows the user to navigate their file system to find a state vector file to be imported. On the panel, the state vector's destination must be selected using one of the radio buttons: NCC, DAS, or Both. For all state vectors destined for the NCCDS and for orbiting (Type-1) state vectors destined for the DAS, the Epoch is submitted exactly as entered by the user. For stationary (Type-8) state vectors destined for DAS, the Epoch is set by the SNAS server to ensure that the Epoch is in the past.

State Vector files are State Vector messages with Unblocked headers. The description of the Unblocked format is provided in the 452-ICD-SNAS/EPS.

Responses from either DAS (message type 601) or NCCDS (type 03/14) for each state vector or IIRV processed will be displayed on the Alert panel.

Figure 10.5. Import Bulk IIRV Panel



Orbital View & Vectors/Import/TCW

This menu option allow the user to manually import a TCW file for processing. A TCW file is a Blocked file containing a single TCW message. The format of the TCW messages is specified in Table 5-8 of the 452-ICD-SNAS/EPS. The description of a Blocked file is provided in Section 3 of the 452-ICD-SNAS/EPS. The TCW file import processing extracts TCWs from the TCW message and stores them onto the SNAS database as TSWs without modifications.

Orbital View & Vectors/Import/PSAT Only

For missions that use only PSAT files for creation of TSWs, this menu option allows the user to manually import a PSAT file. A PSAT file contains one or more PSAT messages packed in 4800-bit Nascom blocks. Each Nascom block is optionally enveloped by a 22-byte Modnet header. The formats of PSAT messages, Nascom blocks and Modnet headers are specified in 553-FDD-91/028.

The processing of a PSAT file includes extracting orbit data and viewing constraints from the file and using the data to create TSWs and storing TSWs onto the database. Depending on the size of the PSAT file, the import could take up to a few hours to complete.

Orbital View & Vectors/Import/PSAT/UAV

This menu option is to be used by missions that uses both PSAT and UAV files for creation of TSWs. A PSAT file contains orbit data and viewing constrainings while a UAV file contains available viewing windows. A UAV file contains one or more UAV messages stuffed in 4800-bit Nascom blocks. A PSAT file contains one or more PSAT messages stuffed in 4800-bit Nascom blocks. Each Nascom block is optionally enveloped by a 22-byte Modnet header. The formats of UAV messages, PSAT messages, Nascom blocks and Modnet headers are specified in the 553-FDD-91/028. TSW

creation using both PSAT and UAV files starts with initial viewing windows from UAVs and orbit data, and modifies windows by considering constraints selected by the user. Prior to initiating the import process, the user should secure one PSAT file and one UAV file that cover the same time period. The user should select the menu option twice, one for UAV and the other for PSAT, in any order.

Importing UAV and PSAT files extracts the information from the files and stores them in the SNAS database. After both files have been imported, SNAS begins the TSW creation process. Depending on the sizes of the PSAT and UAV files, the imports and TSW creation could take up to a few hours to complete.

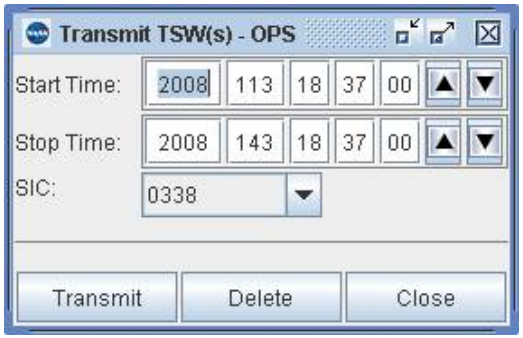
Orbital View & Vectors/Import/TSW

SNAS allows the import of a TSW message file and extracts the information from the files and stores them in the SNAS database. A TSW file for import contains one TSW message. The TSW message file name, number of TSWs and time span of the file are displayed in the Alert Stream. The TSW message should comply to the TSW message format specified in Table 7-12 of the 452-ICD-SN/CSM.

Orbital View & Vectors/Transmit TSW(s)

This panel allows the user to transfer TSWs stored on SNAS database that meet SIC and time selection criteria to the NCCDS. TSWs are packaged into TSW messages according to the format specified in the Table 7-12 of 452-ICD-SN/CSM. When this menu option is selected, a TSW transmit panel appears. This panel allows the user to specify the time period for which TSWs will be transmitted to the NCCDS. All TSWs with the start times falling within the selection time range are sent to the NCCDS.

Figure 10.6. Transmit TSWs Panel



Field Descriptions

Table 10.3. Transmit TSWs Panel Field Descriptions

Field	Description
SIC	Spacecraft Identification Code.
Start Time	Text field for the start of the time interval for which TSW will be transmitted.
Stop Time	Text field for the stop of the time interval for which TSW will be transmitted.

Button Selections

- **Transmit TSWs-** Initiates the packaging of TSWs into TSW messages and transmission of TSW messages to the NCCDS.
- **Delete-** Sends TSW messages, one for each TDRS and TSW Set ID combination with the TSW counts set to zero (0) in all messages, to the NCCDS for the selected start and stop times. This in effect removes all TSWs stored in the NCCDS for that time period.
- **Close-** Close the panel without transmitting any TSWs to NCCDS.

Chapter 11. Scheduling Menu Selections and Panel Descriptions

Table of Contents

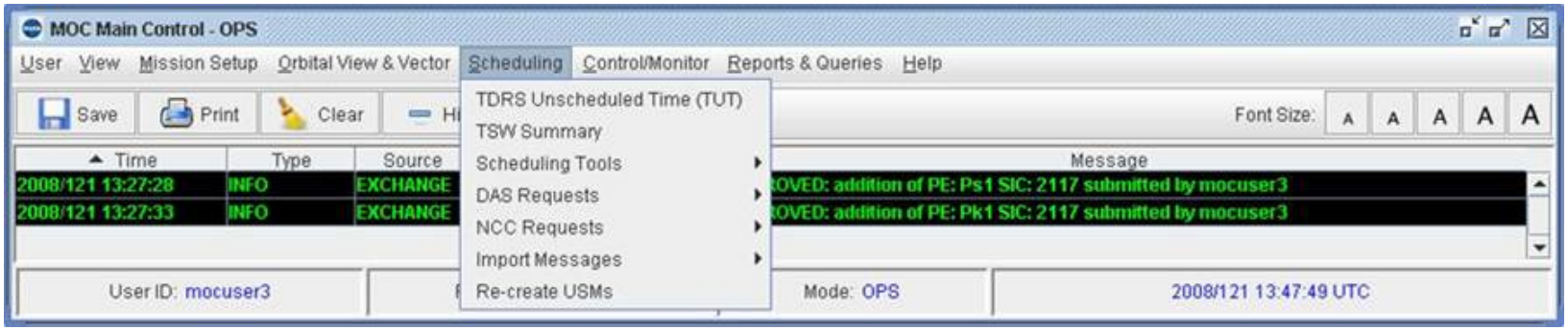
Scheduling Menu
Scheduling/TDRS Unscheduled Time (TUT)
    Retrieve TDRS Unscheduled Time (TUT) Panel
    TUT Summary Panel
    Auto TUT Save on Client Workstation
Scheduling/TSW Summary
Scheduling/Scheduling Tools
    Scheduling/Scheduling Tools/Graphical Timeline
    Scheduling/Scheduling Tools/Schedule Request Summary
    Scheduling/Scheduling Tools/Active Events Summary
    Scheduling/Scheduling Tools/TSW Time Shift
    Scheduling/Scheduling Tools/Bulk Modify
    Scheduling/Scheduling Tools/Multiple Schedule Delete Requests
    Scheduling/Scheduling Tools/Multiple Stored Only Schedule Requests
Scheduling/DAS Requests
    Scheduling/DAS Requests/TDRS Visibility Request
    Scheduling/DAS Requests/Resource Allocation Request (RAR)
    Scheduling/DAS Requests/Resource Allocation Delete Request (RADR)
    Scheduling/DAS Requests/Resource Allocation Modification Request (RAMR)
    Scheduling/DAS Requests/Playback Search (PBKS)
    Scheduling/DAS Requests/Playback Delete Request (PBKDR)
    Scheduling/DAS Requests/Playback Modification Request (PBKMR)
Scheduling/NCC Requests
    Scheduling/NCC Requests/Schedule Add Request (SAR)
    Scheduling/NCC Requests/Schedule Delete Request (SDR)
    Scheduling/NCC Requests/Wait List Request (WLR)
    Scheduling/NCC Requests/Alternate Schedule Add Request (ASAR)
    Scheduling/NCC Requests/Replace Request (RR)
    Scheduling/NCC Requests/Recurrent Scheduling
Scheduling/Import Messages

Select a File to Import
Bulk Request Summary
Correct Errors in an Invalid Request
Submit Bulk Schedule Requests
Scheduling/Re-create USMs

Scheduling Menu

The Scheduling menu provides options for requesting TDRS services and for reviewing and printing the status of those requests. These options are described in more detail in this Section.

Figure 11.1. Scheduling Menu



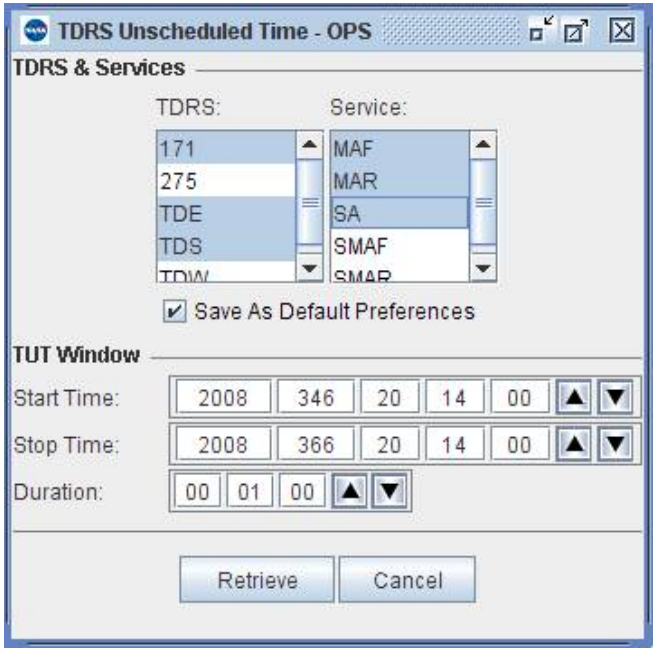
Scheduling/TDRS Unscheduled Time (TUT)

Retrieve TDRS Unscheduled Time (TUT) Panel

TDRS Unscheduled Time is published by NCCDS on an hourly basis. SNAS keeps a copy of the latest TUT on its Open and Closed Servers and this menu option is used to retrieve and display the TUT information on the Client workstation.

When this menu option is selected, a selection criteria panel appears. After specifying a time range, minimum duration of TUTs, one or more TDRS's and one or more services click on Retrieve. The SNAS server will return a list of available TUTs that meets the selection criteria. The returned TUTs are displayed on the TUT Summary panel.

Figure 11.2. TUT Selection Panel



Field Descriptions

Table 11.1. TUT Selection Panel Field Descriptions

Field	Description
TDRS	Select the TUT data for the specified TDRS(s). (If TUT selection preferences have been saved, the saved list of TDRS(s) will be shown when this panel first appears.)
Service	Select the TUT data for the specified Services, used in conjunction with the TDRS filter. (If TUT selection preferences have been saved, the saved list of services will be shown when this panel first appears.)
Save as Default Preferences (checkbox)	If checked, the lists of selected TDRSes and Services will be saved on the client workstation.
Start/Stop Times	The time range within which the selected TUTs lie.
Duration	Minimum duration for the selected TUTs.

Button Selections

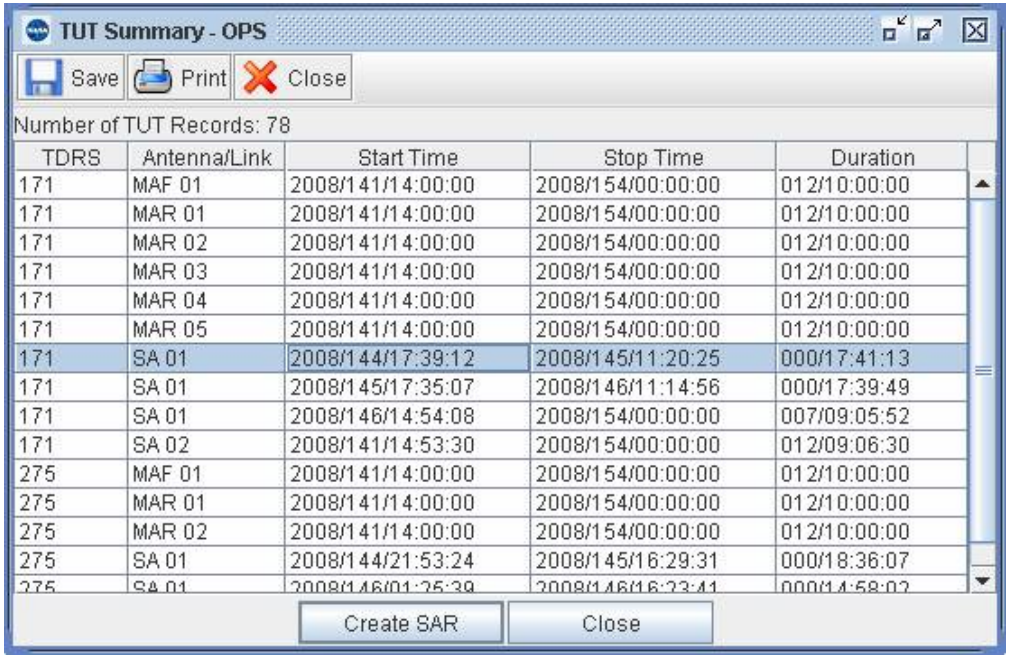
- **Retrieve**- Submit the TUT retrieval request to SNAS server.
- **Cancel**- Close the panel without submitting the TUT retrieval request.

TUT Summary Panel

The TUT Summary panel displays TUTs based on the latest available TUT file and the user's selection criteria. The panel offers sorting capabilities. Refer to Tabular Displays bullet in Chapter 4 General Operating Guidelines for detailed descriptions on how the sorting works.

The user can select a displayed TUT and launch a SAR panel by clicking on the Create SAR button. The TDRS and Start Time will be put in the TDRS and Event Start Time fields on the SAR panel.

Figure 11.3. TUT Summary Panel



TDRS	Antenna/Link	Start Time	Stop Time	Duration
171	MAF 01	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
171	MAR 01	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
171	MAR 02	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
171	MAR 03	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
171	MAR 04	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
171	MAR 05	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
171	SA 01	2008/144/17:39:12	2008/145/11:20:25	000/17:41:13
171	SA 01	2008/145/17:35:07	2008/146/11:14:56	000/17:39:49
171	SA 01	2008/146/14:54:08	2008/154/00:00:00	007/09:05:52
171	SA 02	2008/141/14:53:30	2008/154/00:00:00	012/09:06:30
275	MAF 01	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
275	MAR 01	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
275	MAR 02	2008/141/14:00:00	2008/154/00:00:00	012/10:00:00
275	SA 01	2008/144/21:53:24	2008/145/16:29:31	000/18:36:07
275	SA 01	2008/146/01:25:39	2008/146/16:23:41	000/14:58:02

Field Descriptions

Table 11.2. Retrieve TUT Data Return Panel Field Descriptions

Field	Description
Antenna/Link	The service type and the antenna/link ID of each selected TUT.
Start Time	The start time for the selected TUT.
Stop Time	The stop time for the selected TUT.
Duration	The actual duration of the selected TUT.

Auto TUT Save on Client Workstation

The hourly TUT file updates can be saved automatically to the client's workstation. This feature is controlled in the client.prop file with the parameter HourlyTutActivated either enabling or disabling the save function. The user can at any time during a session disable or enable the feature as well. Descriptions of all of the client.prop parameters involved with the storing of the hourly TUT updates can be found in section 3.

Scheduling/TSW Summary

This menu option is used to display TSWs stored in SNAS database that are for a specific SIC and fall within a specific time range. When this menu option is selected, enter a time range and select a SIC. A list of TSWs that meet the selection criteria appears in a TSW Summary panel along with a status column showing whether each TSW has only been saved to the SNAS database or transmitted to the NCCDS. Any TSWs seen in the TSW Summary can be transmitted or retransmitted. (See the Section Orbital View & Vector / Transmit TSW(s) regarding the transmission.) The TSW Summary panel offers sorting capabilities. Refer to Tabular Displays bullet in Chapter 4 General Operating Guidelines for detailed descriptions on how the sorting works.

Figure 11.4. TSW Selection Panel

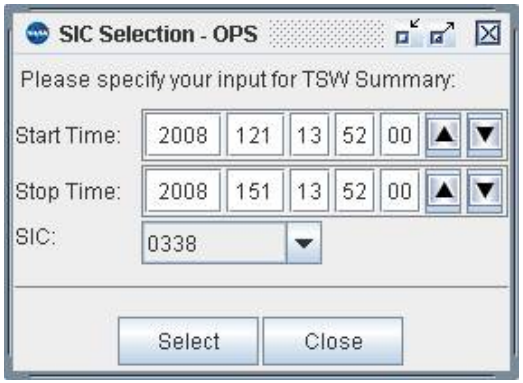
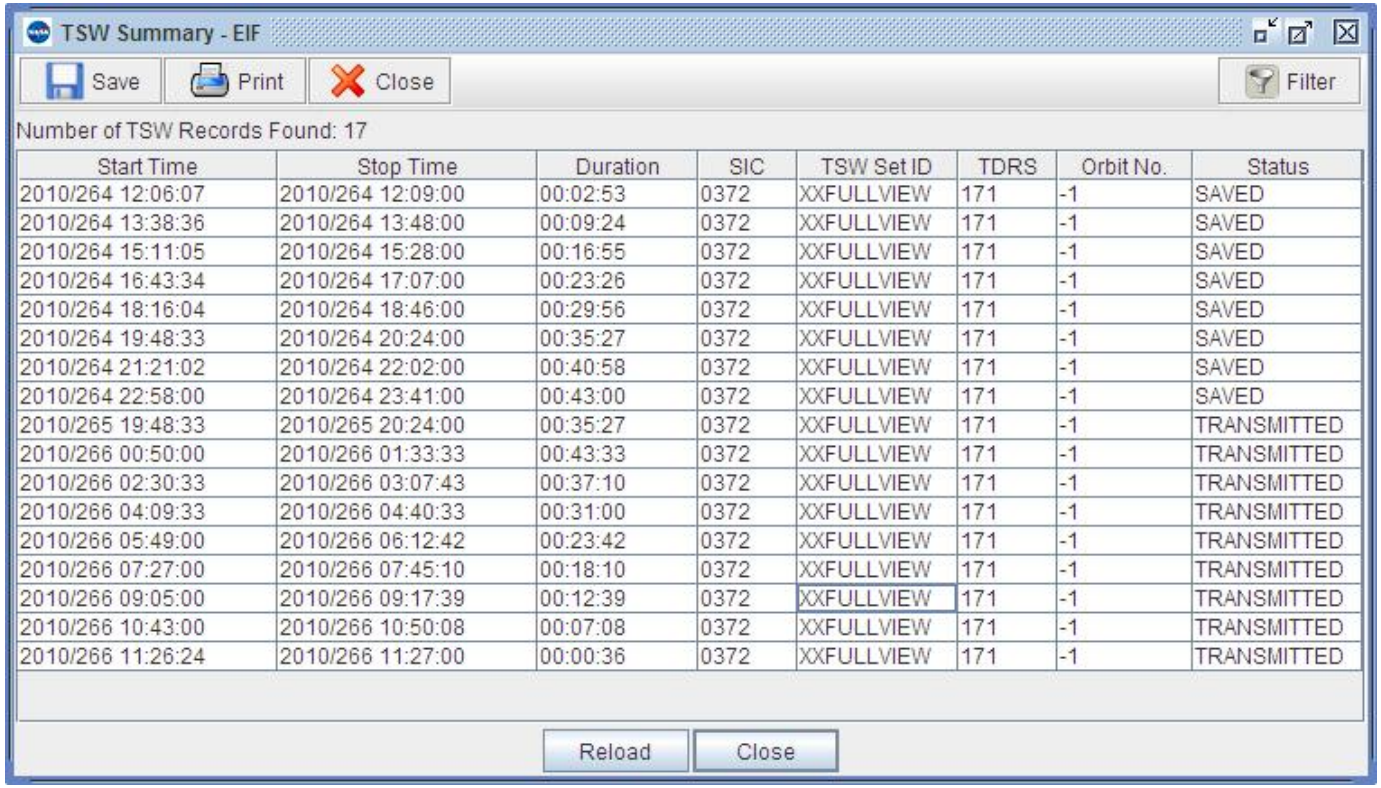


Figure 11.5. TSW Summary Panel



Start Time	Stop Time	Duration	SIC	TSW Set ID	TDRS	Orbit No.	Status
2010/264 12:06:07	2010/264 12:09:00	00:02:53	0372	XXFULLVIEW	171	-1	SAVED
2010/264 13:38:36	2010/264 13:48:00	00:09:24	0372	XXFULLVIEW	171	-1	SAVED
2010/264 15:11:05	2010/264 15:28:00	00:16:55	0372	XXFULLVIEW	171	-1	SAVED
2010/264 16:43:34	2010/264 17:07:00	00:23:26	0372	XXFULLVIEW	171	-1	SAVED
2010/264 18:16:04	2010/264 18:46:00	00:29:56	0372	XXFULLVIEW	171	-1	SAVED
2010/264 19:48:33	2010/264 20:24:00	00:35:27	0372	XXFULLVIEW	171	-1	SAVED
2010/264 21:21:02	2010/264 22:02:00	00:40:58	0372	XXFULLVIEW	171	-1	SAVED
2010/264 22:58:00	2010/264 23:41:00	00:43:00	0372	XXFULLVIEW	171	-1	SAVED
2010/265 19:48:33	2010/265 20:24:00	00:35:27	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 00:50:00	2010/266 01:33:33	00:43:33	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 02:30:33	2010/266 03:07:43	00:37:10	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 04:09:33	2010/266 04:40:33	00:31:00	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 05:49:00	2010/266 06:12:42	00:23:42	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 07:27:00	2010/266 07:45:10	00:18:10	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 09:05:00	2010/266 09:17:39	00:12:39	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 10:43:00	2010/266 10:50:08	00:07:08	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 11:26:24	2010/266 11:27:00	00:00:36	0372	XXFULLVIEW	171	-1	TRANSMITTED

Scheduling/Scheduling Tools

Figure 11.6. Scheduling/Scheduling Tools Menu

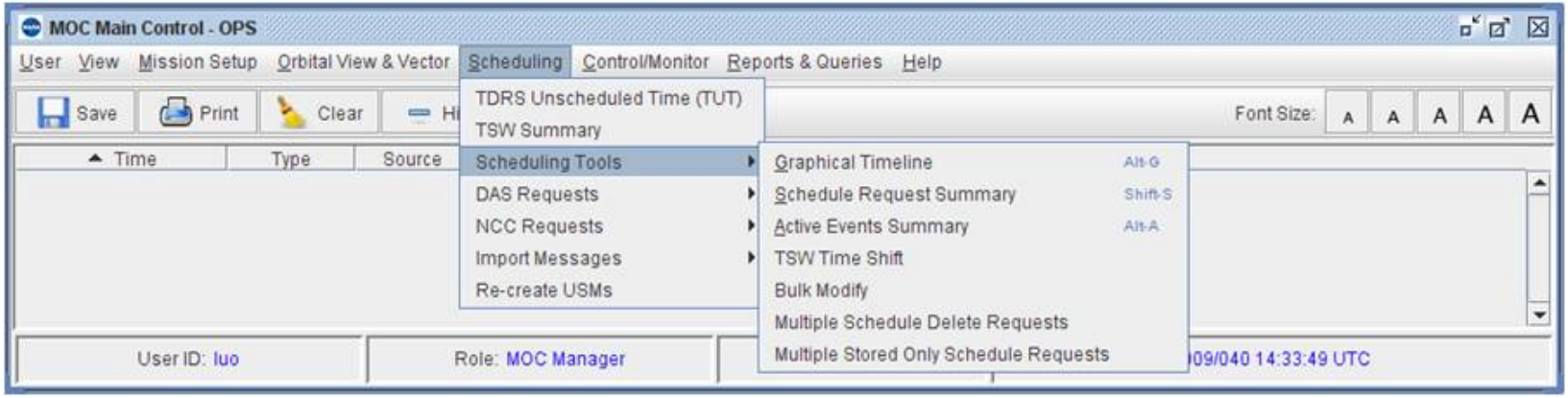
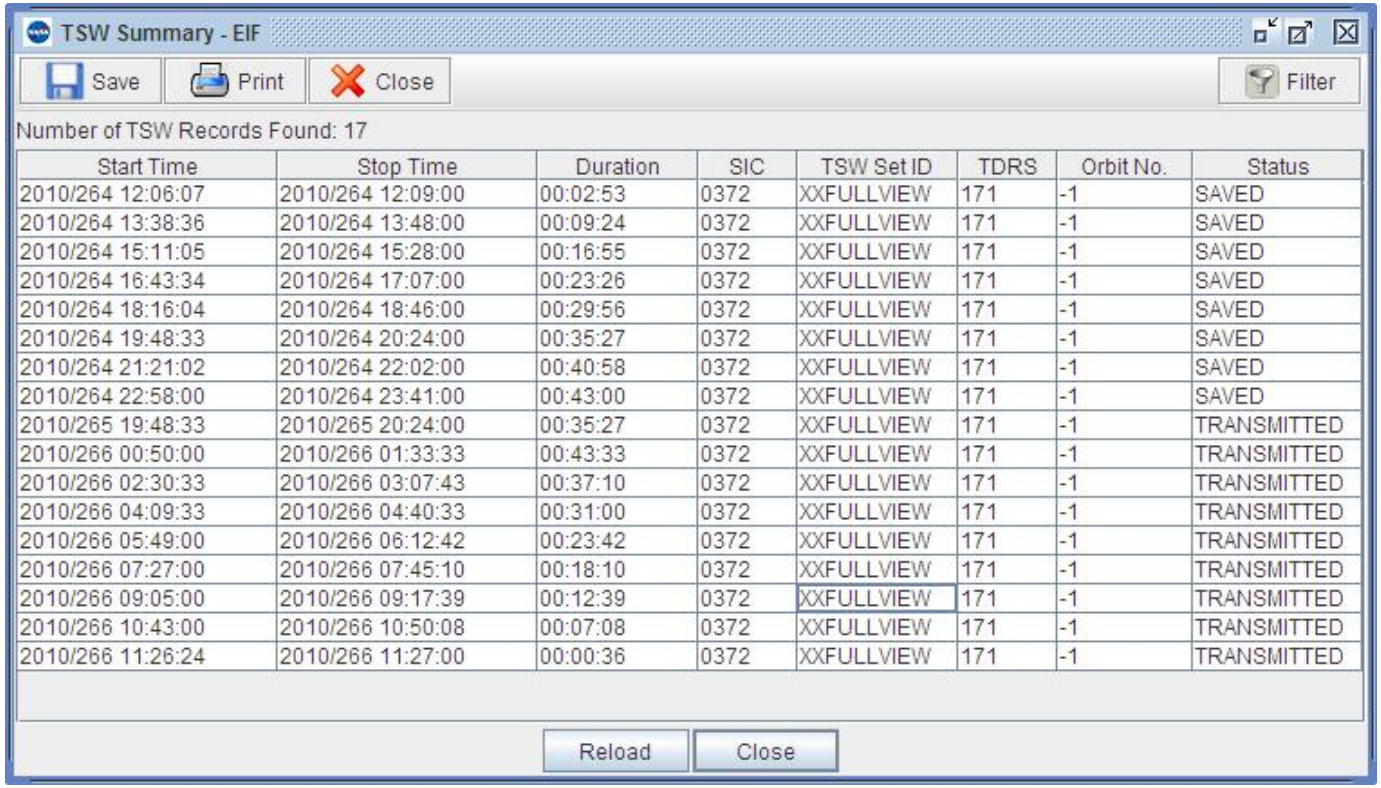


Figure 11.7. TSW Summary Panel



Start Time	Stop Time	Duration	SIC	TSW Set ID	TDRS	Orbit No.	Status
2010/264 12:06:07	2010/264 12:09:00	00:02:53	0372	XXFULLVIEW	171	-1	SAVED
2010/264 13:38:36	2010/264 13:48:00	00:09:24	0372	XXFULLVIEW	171	-1	SAVED
2010/264 15:11:05	2010/264 15:28:00	00:16:55	0372	XXFULLVIEW	171	-1	SAVED
2010/264 16:43:34	2010/264 17:07:00	00:23:26	0372	XXFULLVIEW	171	-1	SAVED
2010/264 18:16:04	2010/264 18:46:00	00:29:56	0372	XXFULLVIEW	171	-1	SAVED
2010/264 19:48:33	2010/264 20:24:00	00:35:27	0372	XXFULLVIEW	171	-1	SAVED
2010/264 21:21:02	2010/264 22:02:00	00:40:58	0372	XXFULLVIEW	171	-1	SAVED
2010/264 22:58:00	2010/264 23:41:00	00:43:00	0372	XXFULLVIEW	171	-1	SAVED
2010/265 19:48:33	2010/265 20:24:00	00:35:27	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 00:50:00	2010/266 01:33:33	00:43:33	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 02:30:33	2010/266 03:07:43	00:37:10	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 04:09:33	2010/266 04:40:33	00:31:00	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 05:49:00	2010/266 06:12:42	00:23:42	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 07:27:00	2010/266 07:45:10	00:18:10	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 09:05:00	2010/266 09:17:39	00:12:39	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 10:43:00	2010/266 10:50:08	00:07:08	0372	XXFULLVIEW	171	-1	TRANSMITTED
2010/266 11:26:24	2010/266 11:27:00	00:00:36	0372	XXFULLVIEW	171	-1	TRANSMITTED

Scheduling/Scheduling Tools/Graphical Timeline

This menu option allows the user to view all schedule-related NCCDS items such as requests, events, scheduling windows and contraints for selected TDRSs, SUPIDENs and status within a time range on the same timeline graphically. The items displayed include Schedule Add Requests (SARs), Replace Requests (RRs), User Schedule Messages (USMs), Resource Allocation Requests (RARs), Resource Allocation Modification Requests (RAMRs), Demand Access System Multi-Access Requests (DASMARs), TDRS Scheduling Windows (TSWs), TDRS Unscheduled Times (TUTs) and user-defined constraints. For the purpose of more concise descriptions of the Timeline functionality, the term "event" will be used when generally describing an item on the SAR, RR, USM, RAR, RAMR and DASMAR lines.

In addition to just getting a graphical view of scheduling items, the user can also build and submit schedule requests such as SARs, SDRs, RRs, RARs, RADRs and RAMRs from the Timeline. The full functionality of schedule requests launched from the Timeline is described in this section.

Timeline Data Selection

When the Graphical Timeline menu option is selected, a Graphical Timeline Data panel appears for the user to select the TDRS(s), SUPIDEN(s), Request Status and enter the time range. Click the Submit button to retrieve the schedule data and launch the Graphical Timeline panel.

Figure 11.8. Timeline Data Panel

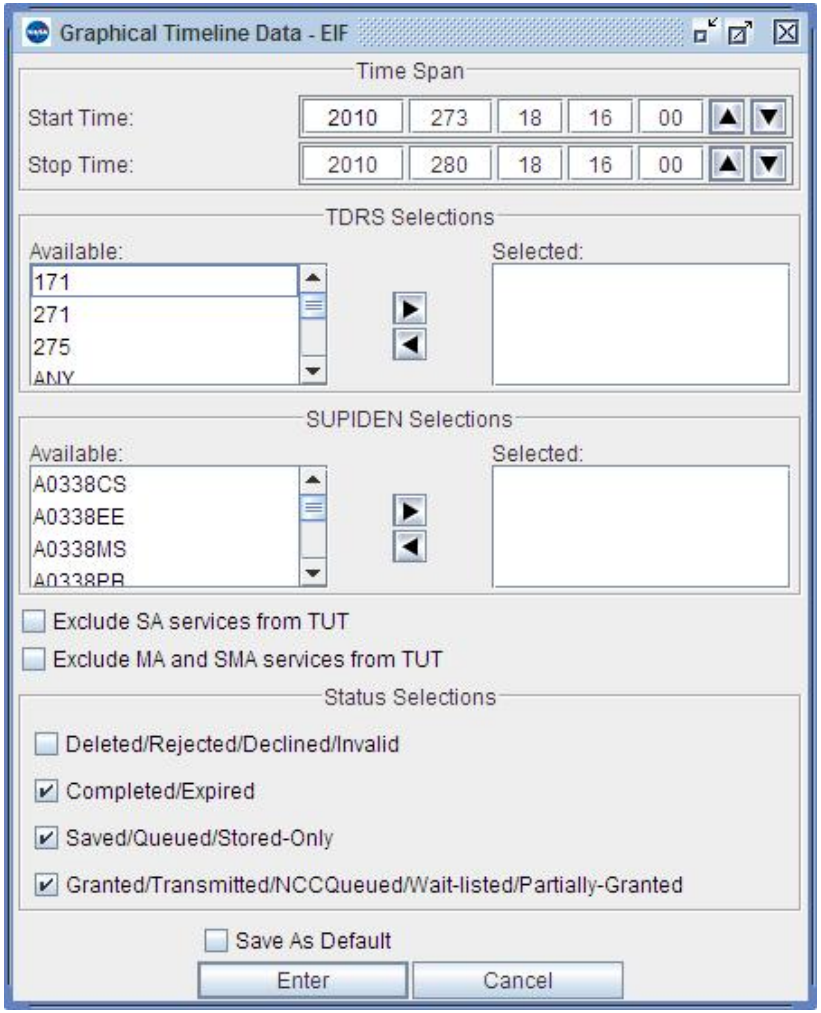


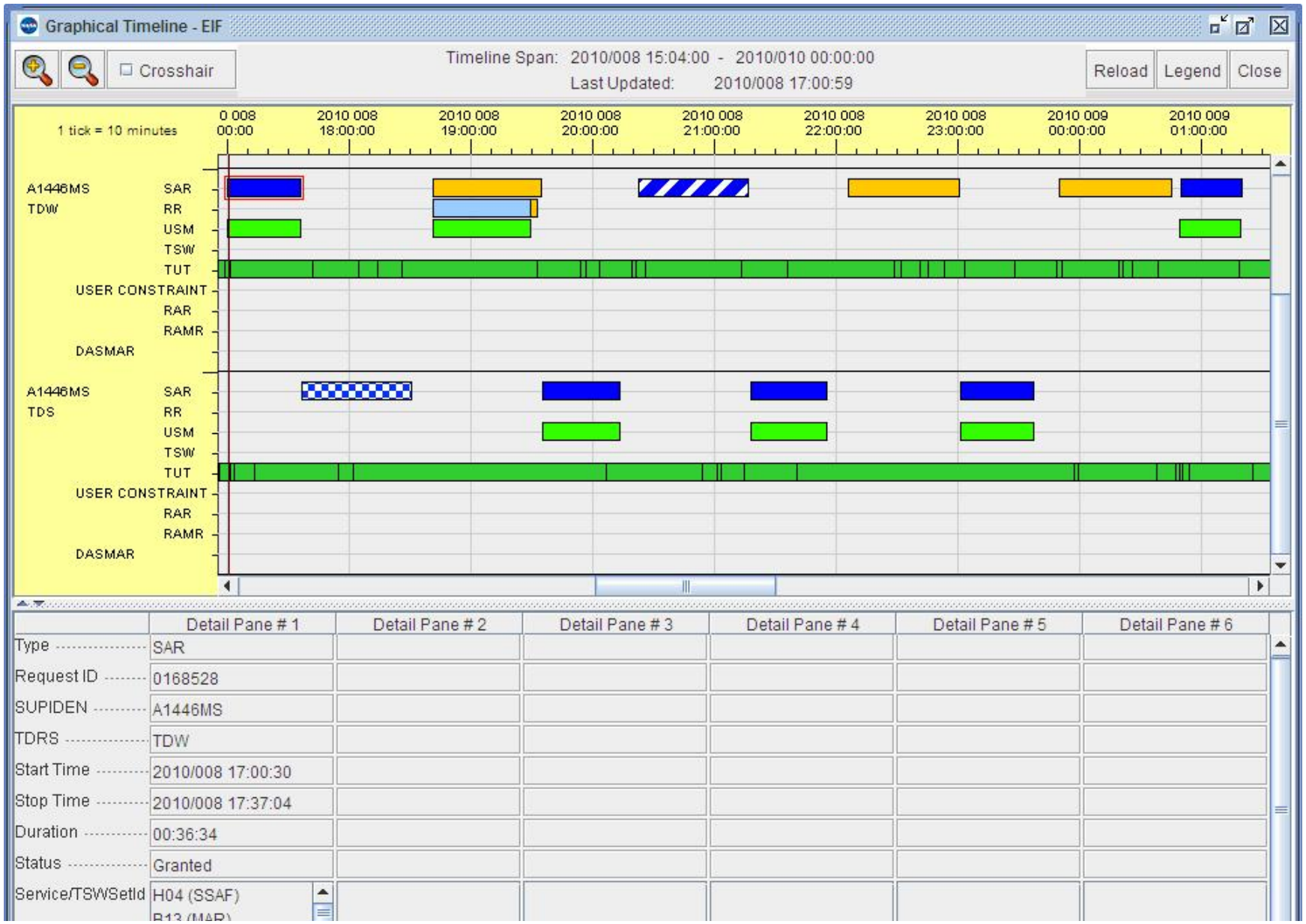
Table 11.3. Timeline Data Panel Field Descriptions

Field	Description
Start/Stop Time	Start and stop times of Timeline display. All events with any overlap with the Timeline time range will be included in the display.
TDRS	All selected and displayed events will be for TDRS(s) listed in the Selected box. To select a TDRS, click on the TDRS in the Available box and click on the righ-pointing arrow to add the selected TDRS to the bottom of the Selected list. Repeat for adding additional TDRS(s). The order of TDRS(s) selected controls the order of TDRS(s) displayed on the Timeline
SUPIDEN	All selected and displayed events will be for SUPIDEN(s) listed in the Selected box. To select a SUPIDEN, click on the SUPIDEN in the Available box and click on the righ-pointing arrow to add the selected SUPIDEN to the bottom of the Selected list. Repeat for adding additional SUPIDEN(s).
TUT Selections	Three TUT selections are available to include both the SA and MA/SMA services (select neither exclusion option), exclude the SA services or exclude the MA/SMA services.

Status Selections	Control the selection of requests based on request status stored in SNAS database. Refer to Scheduling/Scheduling Tools/ Schedule Request Summary section for definitions of request status.
Save as Default (checkbox)	If checked, the selected TDRS(s), SUPIDEN(s) and status will be saved on the client workstation. The next time the Timeline is activated, the selections will be used as default selection criteria.

Graphical Timeline Panel

Figure 11.9. Graphical Timeline Panel



The Graphical Timeline panel contains a Timeline section and a Detail Pane section. The Timeline section contains a graphical presentation of all schedule-related events. The Detail Pane section allows the user to view detailed information associated with a selected event. The Detail Pane section is equipped with a grab bar at the top. When the Graphical Timeline panel is first activated, the Detail Pane section covers the bottom half of the Timeline section (see the above figure). An up-pointing arrow and a down-pointing arrow are available at the left edge of the grab bar. Clicking the down-pointing arrow will "hide" the Detail Pane section and expose the portion of Timeline section previously covered by the Detail Panes. Clicking the up-pointing arrow will "unhide" the Detail Panes to their former position. The height of the Detail Pane section can be adjusted by positioning the cursor over the grab bar, press and hold the left mouse button and move the cursor up or down.

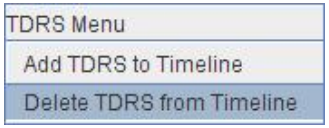
Timeline Section

The horizontal axis of the Timeline section is time and the vertical axis is the TDRS/SUPIDEN combination with each combination containing nine(9) event types -- SAR, RR, USM, RAR, RAMR, DASMAR, TSW, TUT and user-defined constraints. For example, if 2 TDRS and 3 SUPIDENs are entered as selection criteria, the Timeline section will contain 54 "lines" (6 TDRS/SUPIDEN combinations with 9 event types for each combination). Both axes are scrollable.

The time (horizontal) axis of the Timeline section is shown with major and minor tick marks. A GMT time appears right above each major tick mark. The Timeline has a number of built-in timescales to allows a view of "big picture" or at a more detailed level. The built-in timescales are 1 minute, 10 minutes, 30 minutes, 1 hour, 2 hours, 4 hours, 8 hours, 1 day, 3 days, 6 days, 9 days, 12 days and 15 days per minor tick mark. The initial timescale for all Timeline displays is 1 minute per minor tick mark. To change the timescale, click on the zoom-out button (magnifying glass with a plus sign) or the zoom-in button (magnifying glass with a minus sign) at the top of the Timeline section. The timescale level in effect is noted at the upper left corner of the Timeline section. A Cross-hair checkbox lies next to the zoom buttons. When this checkbox is checked, a cross-hair indicating the current cursor position appears. The current client workstation time (in GMT) is indicated by a vertical brown line.

The vertical axis -- TDRS-SUPIDEN combination -- is ordered by the orders of the Selected TDRS list and the Selected SUPIDEN list. For example, if the Selected TDRS list contains TDRS-1 as its first item followed by TDRS-2 and the Selected SUPIDEN list contains SUPIDEN-1 then SUPIDEN-2. The Timeline display will have schedule events for TDRS-1/SUPIDEN-1 at the top, then TDRS-1/SUPIDEN-2 group, then TDRS-2/SUIPDEN-1 group, and finally TDRS-2/SUPIDEN-2 at the bottom of the graphical display. The list of TDRSes can be updated by positioning the cursor on the vertical axis and left click. Select "Add TDRS" to add a new TDRS to the Timeline display (at the bottom of the list) or select "Delete TDRS" to remove a TDRS from the Timeline.

Figure 11.10. Timeline TDRS Menu



Schedule-related events are represented in rectangles on the Timeline. For SARs/RRs/USMs/RARs/RAMRs/DASMARs, the start times are the requested/confirmed Event Start Time. The stop time of a SAR/RR is the latest of all service stop times with service plus tolerances considered. In the case of a SAR submitted from a bulk file using an NCCDS-

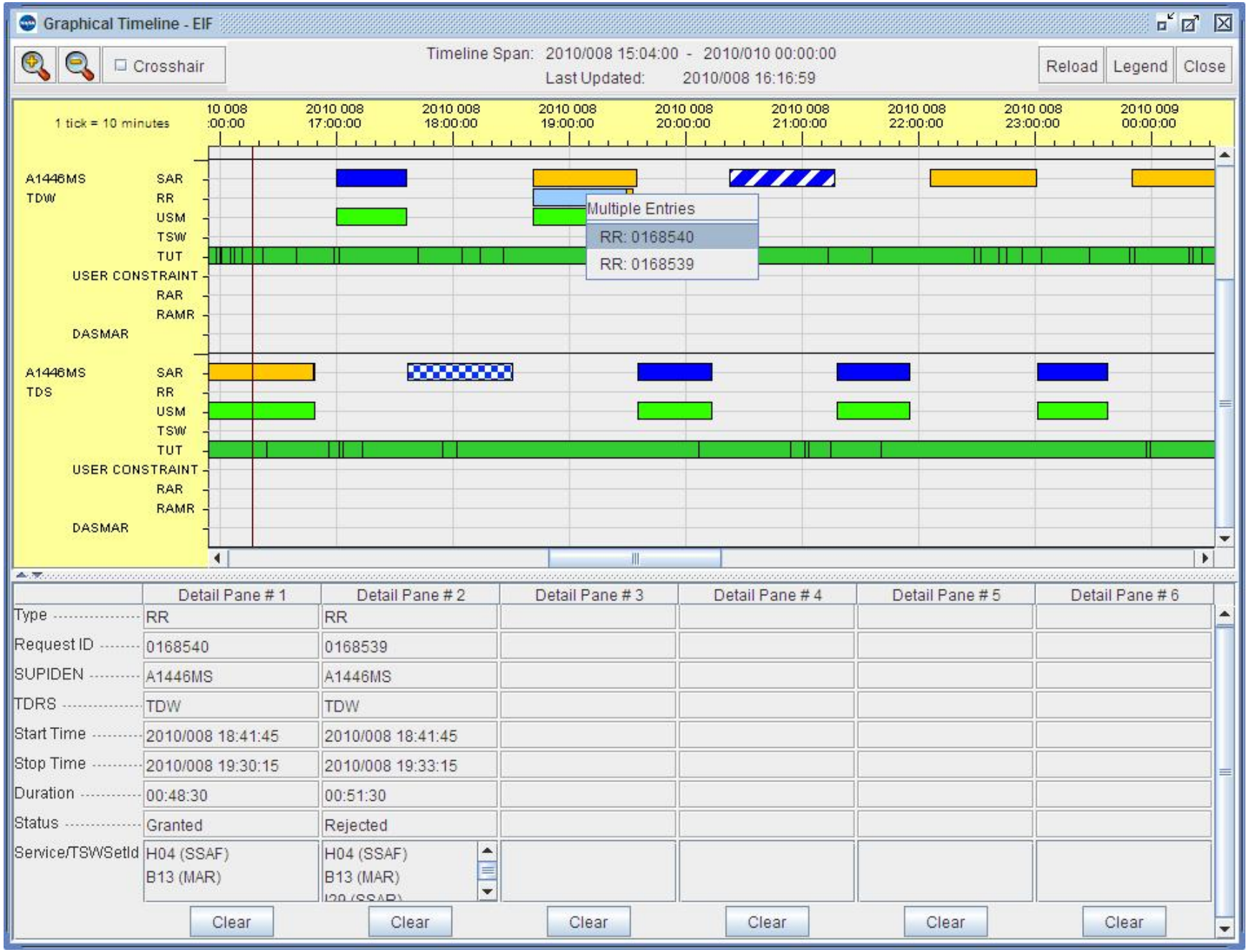
defined prototype event, the stop time can not be calculated. The SAR will be shown as a 1-tick mark event on the Timeline display. Events of various types and status are represented by different colors and/or patterns and are described in the table below. The legend can be viewed by clicking on the Legend button at the upper right corner of the Timeline.

Table 11.4. Timeline Graphical Events Legend

Color/Patterns	Event Types/Status
	Schedule Add Requests (SARs) that are of Granted, Saved, Queued, Transmitted, NCCQueued or Waitlisted status. Resource Allocation Requests (RARs) that are Accepted.
	Alternate Schedule Add Requests (SARs) that are NCC Queued.
	SARs/RARs stored on the Timeline for planning purposes only.
	SARs/RRs/RARs/RAMRs that are of rejected, deleted, declined or invalid status.
	ASARs that are of rejected, deleted, declined or invalid status.
	SARs/RRs that are of completed or expired status.
	SARs/RARs that are stored in SNAS database and not yet transmitted to NCCDS/DAS respectively.
	RARs that are partially granted.
	Replace Requests (RRs) that are of Granted, Saved, Queued, Transmitted, NCCQueued or Waitlisted status. Resource Allocation Requests (RAMRs) that are Accepted.
	User Schedule Messages (USMs) and Demand Access System Multi-Access Requests (DASMARs).
	TDRS Unscheduled Times (TUTs) and TDRS Scheduling Windows (TSWs).
	TDRS Scheduling Windows (TSWs) that are saved in SNAS database.
	Invalid TSWs flagged by NCCDS.
	User-defined TDRS constraints.

To select a SAR/RR/USM/RAR/RAMR/DASMAR on the Timeline, left-click on the event and an outer border in red surrounding the event appears, indicating the event is now selected for further action. When two or more events of the same type overlap each other in time, left-clicking the events at an overlapped time will launch a list of overlapped events (see the figure below). An event saved in SNAS database can be identified by the request ID while a request only available on the current Timeline is identified by its primary contents. Left-click the desired event on the list and an outer border in red surrounding the event will appear.

Figure 11.11. Overlapping Events

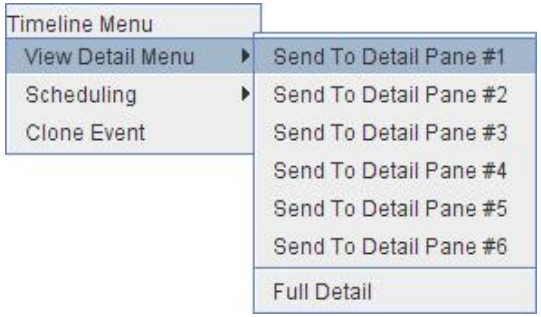


Detailed Pane Section

Detailed information on a selected event (SAR, RR, USM RAR, RAMR, DASMAR or TSW with red border) on the Timeline can be viewed in textual format in one of the six Detail Panes. To display the event information on a Detail Pane, right-click on the selected event, highlight View Detail Menu and then select one Detail Pane (1 through 6). Detailed information for the event will appear in the appropriate Detail Pane. Information shown in a Detail Pane includes

type of event, applicable Request ID, event start/stop times and duration, event status and list of services in the event. Select to view details of an event on a Detail Pane already populated with another event will overwrite what's in the Detail Pane. To clear the contents of a Detail Pane, click on the Clear button at the bottom of the target Detail pane.

Figure 11.12. View Details Menu



For a SAR/RAR selecting the Full Detail option on the View Detail Menu will launch a Timeline SAR or Timeline RAR panel populated with all event and service information for the event. Refer to the Perform Planning and Scheduling from Timeline section below for details on the Timeline SAR panel. In the case of SARs, RRs, USMs, RARs, RAMRs or DASMARs already stored in the SNAS database, the information on the SAR or RAR panel is not modifiable. On the other hand, new SARs or RARs that are yet to be saved in the SNAS database can be modified before forwarding to SNAS server for database storage and then transmitting to NCCDS for processing. New (and cloned) SARs or RARs can also be saved to the Timeline for planning purposes.

View TSWs/TUTs/Constraints

To view TSWs, TUTs or user-defined constraints, click on the appropriate line at the desired time mark and select View Composite. A list of applicable items covering the selected time in the timeline is shown along with a composite listed on the top. To see other windows where scheduling windows exist, where TDRS services are available and user constraints don't preclude scheduling, additional times in the timeline could be selected. The composite view covers the entire range of all listed items. Samples of TUT, without excluding SA or MA/SMA services, and Constraint views are shown below. Zoom-in and zoom-out buttons and a cross-hair checkbox similar to those on the Timeline section are available in the TSW/TUT/Constraints composite panels.

Figure 11.13. Graphical TUT

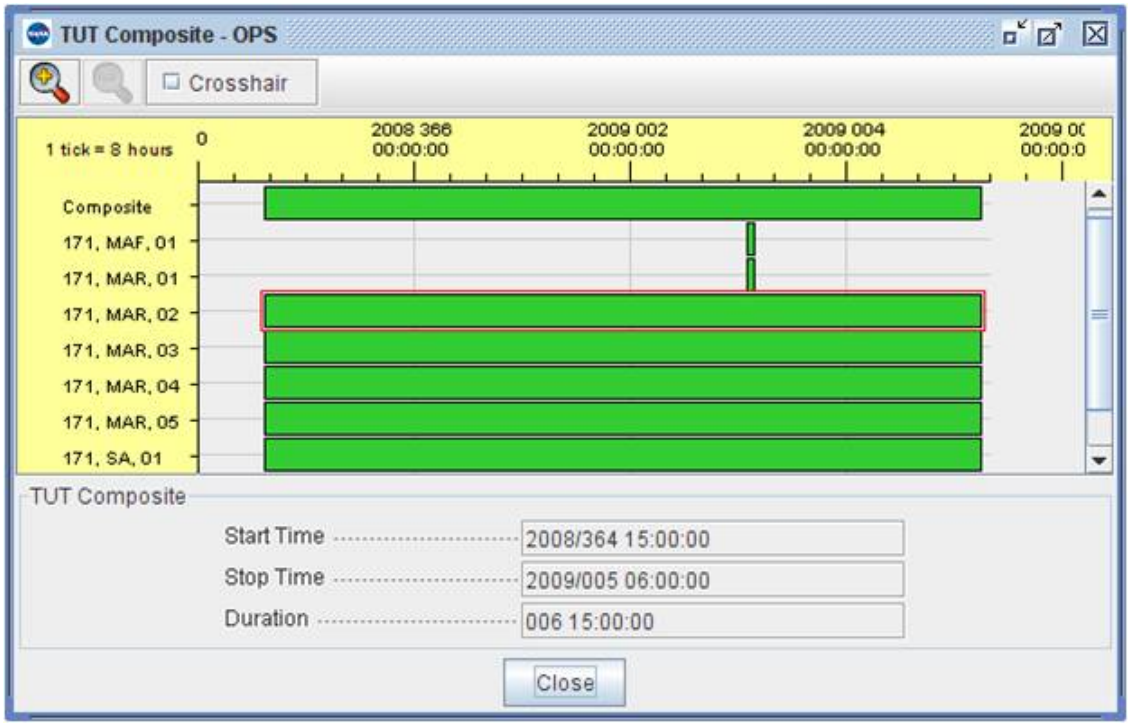
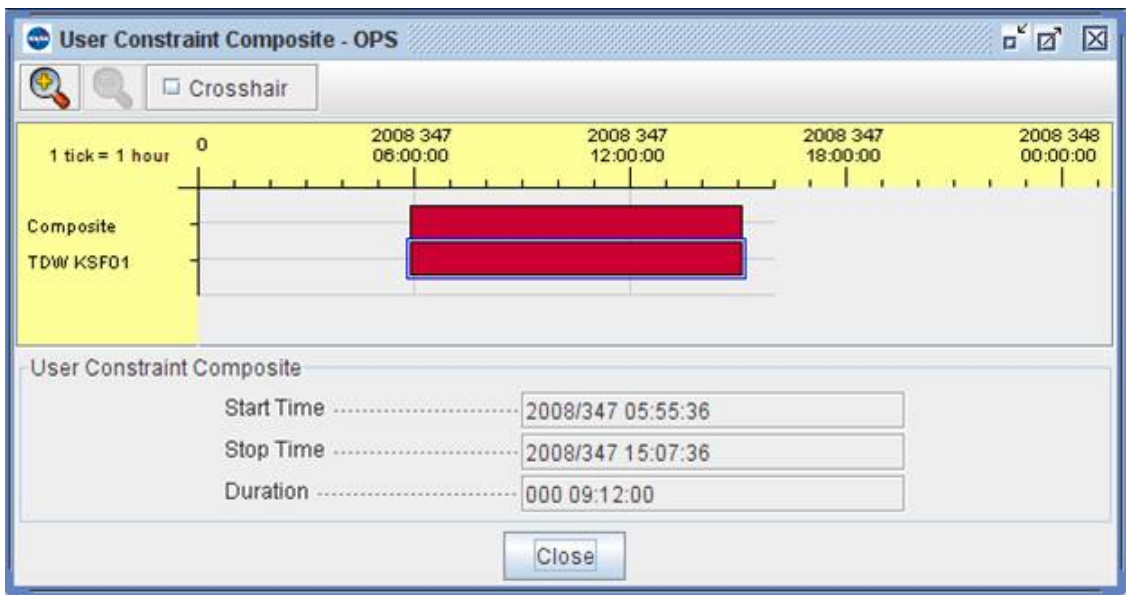


Figure 11.14. Graphical User Constraints



The horizontal axis in all three window types is time. The vertical axis for TSW contains TDRS and TSW Set ID. The vertical axis for TUT and user-defined constraints contain TDRS, service type and antenna link. To view a particular item, click on the item. The item selected will be enclosed in a border and its start/stop times and duration will now

be displayed in the text boxes.

Detailed information for an individial TSW or the TSW Composite can be displayed in one of the six Detail Panes by selecting the TSW and right click, then select the desired Detail Pane number.

Figure 11.15. TSW Menu

A SAR panel can be launched from either a selected TSW or selected TUT. In either case, the SAR panel will be prepopulated with the TDRS and Event Start Time from the selected TSW/TUT.

Perform Planning and Scheduling from Timeline

Build A SAR From Scratch

To build a SAR from scratch on the Timeline, position the cursor at any open area in the Timeline section and right click. Click on Scheduling/Schedule Add Request to launch a Timeline SAR panel. Similarly a RAR can be built from scratch on the Timeline.

Figure 11.16. Scheduling SAR from Timeline

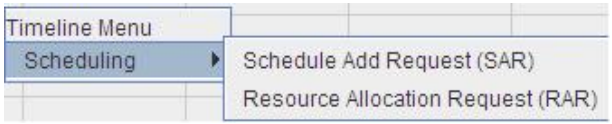
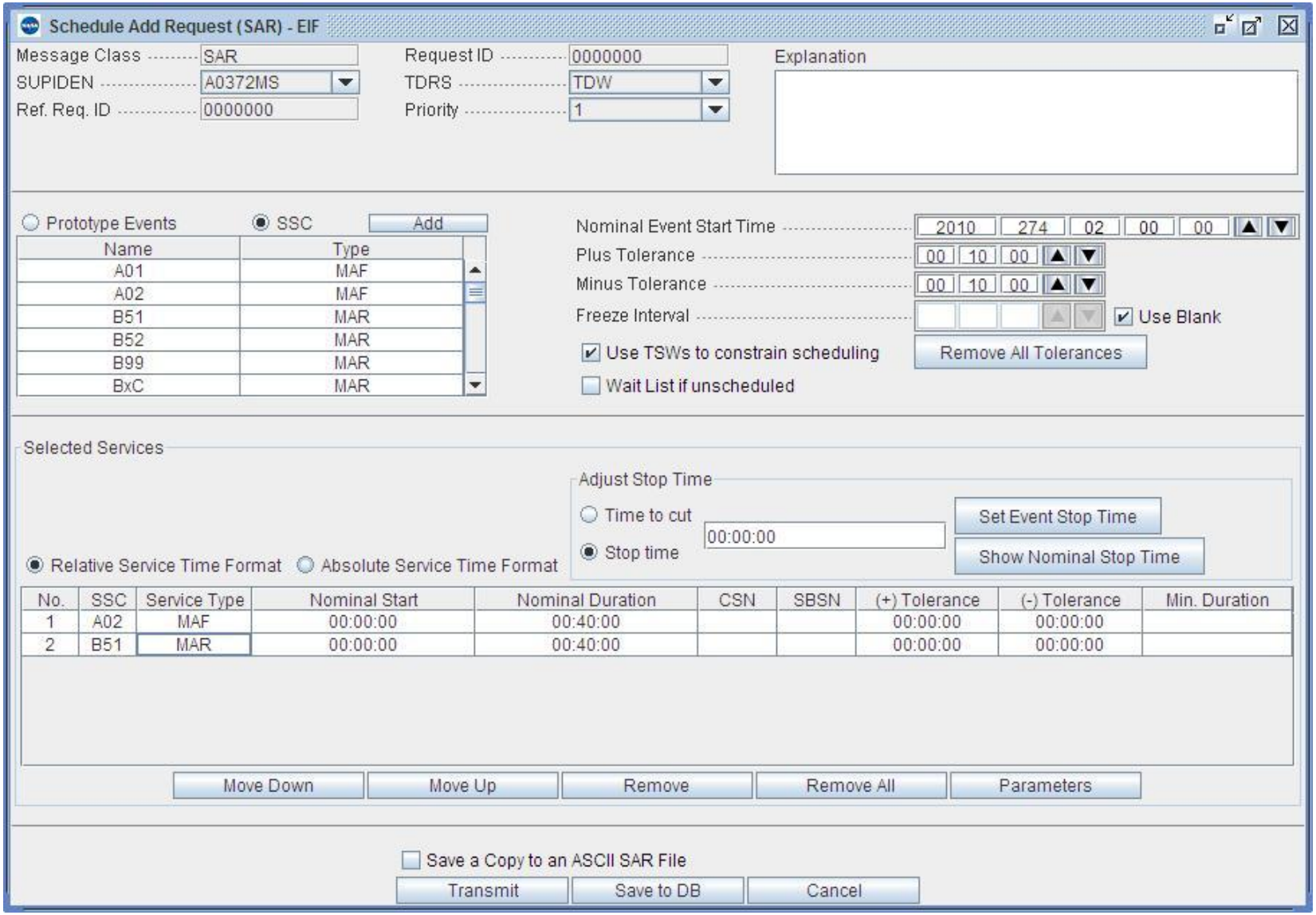


Figure 11.17. Timeline SAR Panel

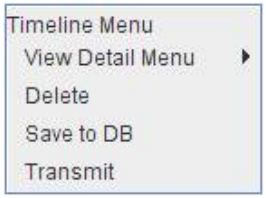


The Timeline SAR panel is very similar to the regular SAR panel described in the Scheduling/NCC Requests/Schedule Add Requests seciton and both panels contain all information necessary for assembling a SAR ready to be submitted to NCCDS. There are two differences between the two SAR panels. In addition to the tabular service list, the Timeline SAR panel also contains a graphical list side-by-side with the tabular list. The start time and duration of a service can be modified from either list. When one list is modified, the modification automatically gets carried over to the other list. To modify the start time or duration of a service from the graphical list, click on the rectangle that represents the service, position the cursor at the left edge (for modifying the start time) or the right edge (for modifying the duration) and "drag" the edge to the desired time. When the mouse button is released, the service start/stop times and duration will be updated in both the graphical and tabular lists. The SAR timespan will also be automatically updated if warranted. Both lists contain vertical scroll bars. Scrolling one list automatically scroll the other list so the services on both lists are always in line. As in the regular SAR panel, the service times can also be modified in the Absolute mode. (Note: The Timeline RAR panel does not have a graphical list corresponding to the tabular list.)

The Event Start Time can also be modified on the graphical list. To modify the Event Start Time from the graphical list, select the SAR rectangle (on top of the graphical list) and drag the left edge to the desired start time. When the mouse button is released, the Event Start Time field will be updated with the new time.

After a SAR is built it can be either submitted to NCCDS, saved to SNAS database without submitting, or saved on the current Timeline session only by clicking on a respective button at the bottom of the SAR panel. When saved on the current Timeline, it will be added to the Timeline section as a planning SAR. The saved Timeline SAR can either be transmitted to NCCDS, be saved to SNAS database only, or be removed from the Timeline. To submit a planning SAR on the Timeline section to NCCDS for processing, select the SAR, right click on it and select Transmit. (Note: Similar features exist for building and submitting a RAR to the DAS database.)

Figure 11.18. Timeline Stored SAR Menu



A SAR that has been stored in the SNAS database but not transmitted to NCCDS can either be transmitted to NCCDS or be removed from the SNAS database. The Menu for a Stored-Only SAR is shown below. (Note: Similarly a RAR can be transmitted to DAS or deleted from the SNAS database.)

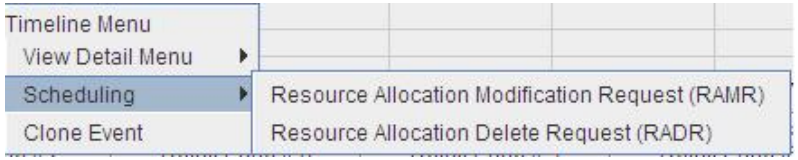
Figure 11.19. Database Stored SAR Menu

Clone An Existing Event

Any SAR, RR and USM on the Timeline section can be cloned by selecting the event, right click and select the Clone Event option. A Timeline SAR panel will appear to allow modification to event and services information for the new SAR. (Note: Similarly any RAR, RAMR and DASMAR can be cloned with modifications to the event and service information including the details of drag-and-drop which follow.)

Figure 11.20. SAR Timeline Scheduling Menu

Figure 11.21. RAR Timeline Scheduling Menu



Any SAR, except for a planning SAR saved on the current TImeline session, can also be cloned by drag-and-drop to a different Timeline location for the same SIC. Once the drag-and-drop is finished a Timeline SAR panel populated with data from the original SAR appears.

A planning SAR saved on the current Timeline session can be drag-and-dropped (i.e. moved) to a new location for the same SIC. Once moved, the TDRS and SUPIDEN for the planning SAR change to the TDRS and SUPIDEN correspond to the new location. To view the details of the new planning SAR, select the SAR, right click and select View Detail Menu then Full Detail.

Submit an Replace Request

An RR replacing a SAR/RR/USM eligible for replacement can be built by selecting the target SAR/RR/USM on the Timeline, right-click and select the Scheduling/RR option from the Timeline Menu. The event and services information of the RR can be modified on the ensuing TImeline SAR (RR) panel. To submit the RR to NCCDS for processing, click on the Submit button. (Note: The same options exist for RAR/RAMR/DASMAR.)

Submit a Schedule Delete Request

To submit an SDR to delete an eligible SAR/RR/USM, select the event, right-click and select the Scheduling/SDR option from the Timeline Menu. Click on OK on the ensuing confirmation dialog. (Note: The same option exists for RAR/RAMR/DASMAR using a RADR.)

Refresh the Timeline Display

The contents of the Timeline can be updated manually by clicking on the Reload button. A manual reload updates all events on the panel. The user can also setup periodic updates of SARs, RRs and USMs using properties in the client.prop file. Refer to the client.prop section for more information. Both manual and periodic updates apply to both the NCCDS and DAS events, except the DAS database is access only every third time the NCCDS is accessed.

Scheduling/Scheduling Tools/Schedule Request Summary

This menu option is used for displaying selected schedule requests submitted to SNAS server and subsequently DAS and NCCDS for all authorized SIC(s) that are stored in the SNAS database. A selection criteria panel appears when this menu option is selected. The selection criteria include a time range for either the request start times, request stop times or the request creation times (the time a request was added to the SNAS database), a range for request IDs, one or more SUPIDENs, one or more TDRSs, one or more Message Classes, and one or more request status. The current selection criteria, excluding the time range, can be saved to the client workstation by checking the Save as Default checkbox.

The Submit button is used to start the retrieval process, and to save the current selection criteria to disk if the Save as Default checkbos is checked. The Clear button is to remove all selecton criteria. For a selection category (SUPIDEN, TDRS, Message Class, Request Status), no selections for the category are the same as selecting all values for the category.

Figure 11.22. Schedule Request Summary Filtering Panel

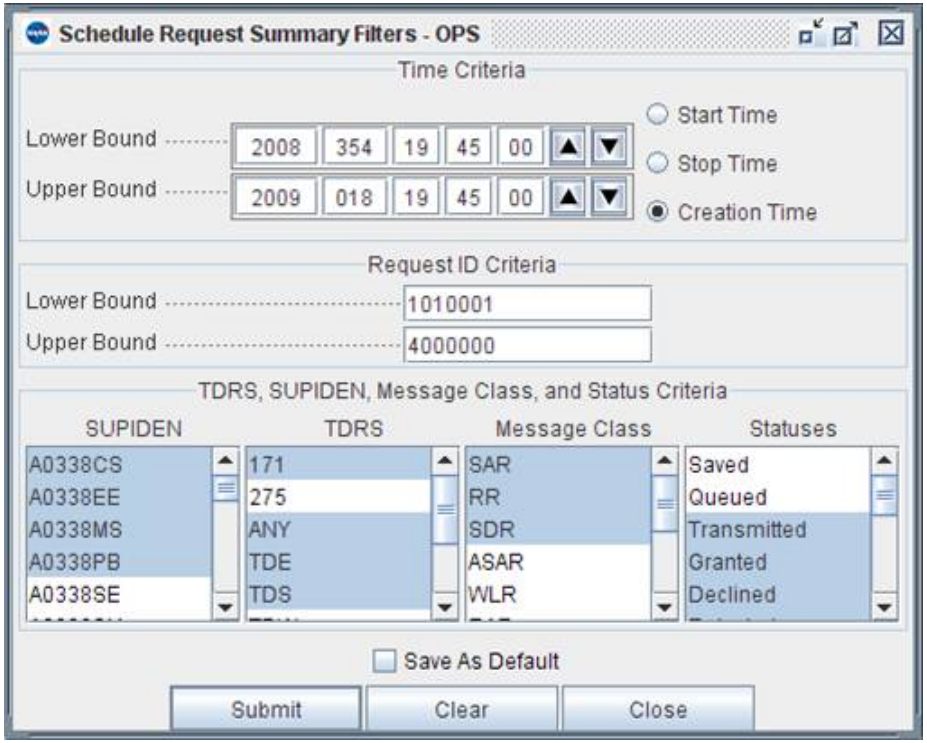
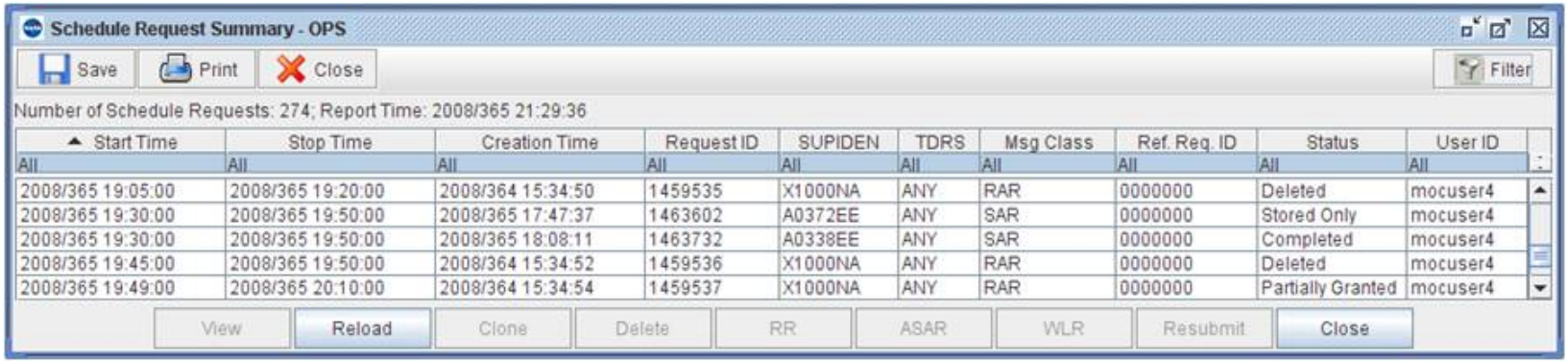


Figure 11.23. Schedule Request Summary Panel



Field Descriptions

Table 11.5. Schedule Request Summary Panel Field Descriptions

Field	Description

Start/Stop Times	Requested start and stop times for a DAS event. Requested start time and calculated stop time for an NCCDS event. In the case of a SAR submitted in a bulk file and used an NCCDS-defined PE, the stop time could not be calculated and it would be blank - to see these SARs a start time or creation time request needs to be made.
Creation Time	The time the request is stored in SNAS database - SDRs only show up when creation time is used (not start or stop times).
Request ID	A unique 7-digit identifier assigned by the SNAS server prior to transmission to NCCDS or DAS.
SUPIDEN	The Support Identifier the user specified in the submitted request. It is a seven-character code used to identify the satellite and task being supported. It is comprised of three parts: class (1 letter, SIC, and a 2-letter function code). SUPIDENs are stored in the SNAS database by the O&M administrator.
TDRS	A 3-character TDRS or TDRS group name used in the schedule request.
Msg Class	The class of schedule request message. The list of applicable classes is provided in the table below.
Reference Request ID	The request ID of the request being referenced in all request message classes other than SAR, RAR and PBKR. "0000000" for SAR, RAR and PBKR.
Status	Status of the submitted request. Lists of status for DAS and NCCDS requests are provided below. For explanations of responses as reported by NCCDS and DAS, refer to Table 7-5 in the 452-ICD-SN/CSM for NCCDS requests and in Tables 5-14, 5-17, 5-20, 5-45, 5-48, 5-51 in the 452-ICD-DAS/SNAS for DAS requests.
User ID	Account name of user who initiated the request

Schedule Request Status

SNAS maintains a status for each schedule request stored in its database. There are 16 available status and they are described below:

- **Completed**- A request is marked as Completed if it was Granted by NCCDS or DAS and the current time has moved past the request's stop time.
- **Declined**- A status applicable only to an NCCDS request with the Result Code of 02 in the received SRM for the request.
- **Deleted**- An NCCDS request has a status of Deleted if the SRM received for the request has a Result Code of 15. A DAS request is marked as Deleted if the RADR that references the request has been accepted by DAS.
- **Expired**- A request is marked as Expired if it had a status of Saved, Queued, Transmitted, or Stored-Only and the current time has moved past the request's stop time.
- **Granted**- A request has the status of Granted if it has been accepted by NCCDS (SRM Result Code of 00) or DAS (Message Code of 000).
- **Invalid**- SNAS Server assigns an Invalid status to a request if it detects errors in the request. The request is not sent to NCCDS or DAS.
- **NCCQueued**- A status applicable only to an NCCDS request with the Result Code of 26 in the received SRM for the request.
- **Partially Granted**- A status applicable only to a DAS request with the following DAS responses -- Message Type/Code of 201/213 and 205/216.
- **Pending**- A DAS request has the Pending status if the Message Type/Code is 201/200.

- **Queued**- SNAS Server assigns a Queued status to a request originally marked as Saved when the connection to NCCDS or DAS has been restored/activated and SNAS Server has retrieved the request and is queueing it for transmission.

- **Rejected**- A request is marked as Rejected if rejected by NCCDS (SRM Result Code of 06, 07, 08, 10, 11) or by DAS (Message Type/Code of 201/201, 201/202, 201/203, 201/209, 203/20x, 203/999, 205/20x, 205/210, 205/211, 205/212, 205/999, 503/50x, 503/999, 505/50x, 505/999, 507/50x, 507/999).

- **Saved**- SNAS Server assigns a Saved status to a request if the Server detects connection problems with NCCDS or DAS and SNAS Server stores the request in the database without transmittting it to NCCDS or DAS.

- **Stored Only**- When the user interactively builds and submits a SAR for stored to database only, SNAS stores the request in the database and assigns a Stored Only status to it.

- **Transmitted**- A request is of the Transmitted status if, after transmission to DAS or NCCDS, no responses have been received.

- **Waitlisted**- An NCCDS request has the Waitlisted status if NCCDS has placed the request on a waitlist (SRM Result Code of 12).

- **Timeline-Saved**- A request saved in conjunction with an open graphical timeline panel. The request is deleted when the graphical timeline panel is closed.

Message Classes

Table 11.6. Message Class Values

Message Class	Description	System
SAR	Schedule Add Request	NCCDS
SDR	Schedule Delete Request	NCCDS
RR	Replace Request	NCCDS
ASAR	Alternate Schedule Add Request	NCCDS
WLR	Wait List Request	NCCDS
RAR	Resource Allocation Request	DAS
RADR	Resource Allocation Deletion Request	DAS
RAMR	Resource Allocation Modification Request	DAS
PBKR	Playback Request	DAS
PBKDR	Playback Deletion Request	DAS
PBKMR	Playback Modification Request	DAS

Panel Operation

The Schedule Request Summary Panel displays the schedule requests stored in the SNAS database that meet the selection criteria. Because some SARs have no stop time, SDRs have no start or stop time and playbacks have no start time, the Schedule Request Summary Panel may not include all events. To get around this problem, on the Schedule Request Summary Filters panel click Clear to eliminate the time criteria - this option can not be saved with the Save as

Default button.

The Schedule Request Summary panel offers sorting and filtering capabilities. Refer to Tabular Displays bullet in Chapter 4 General Operating Guidelines for detailed descriptions on how sorting and filtering work.

When the Schedule Request Summary panel is first activated, the displayed requests are sorted by SUPIDEN in ascending order and only the Reload and the Close buttons are active.

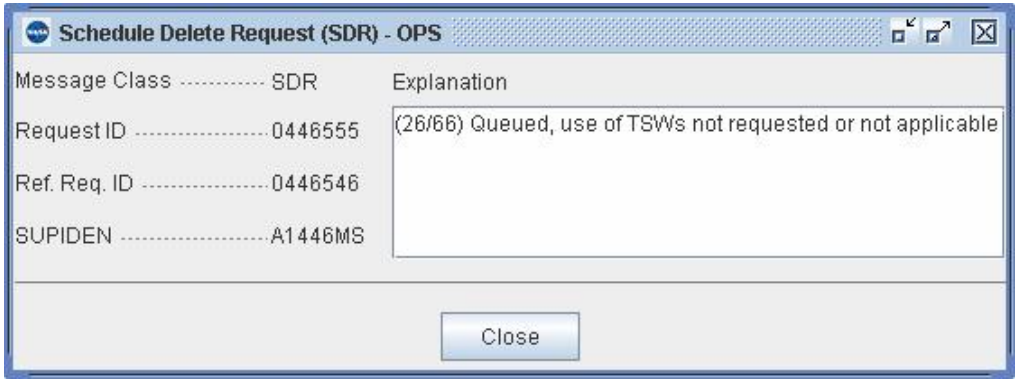
The Schedule Request Summary can be updated either manually or periodically. The updates include adding new requests that meet the selection criteria to the display and updating the status of requests. To manually update the contents, click on the Reload button at the bottom of the panel. The time the display is last updated along with the number of entries currently in display are printed near the top of the table. The control of the periodic updates is provided in the client.prop file. Refer to Client Property file section for detailed information on how to enable the periodic updates.

There is a "Filter" button near the upper right corner of the panel. When clicked, it brings up a filtering panel populated with the selection criteria (filtering) currently in effect. The selection criteria can be modified and be used as criteria for future updates after clicking on the Submit button.

Viewing a Request

The View button on the Schedule Request Summary panel is used to display detailed event, services and parameters information for a request. The View button is deactivated until a schedule request is selected. Selecting a request and click on the View button will launch an appropriate read-only panel on which the essential information on the request is displayed. WIth the exceptions of viewing an SDR or an RADR, the read-only panels are very similar to their respective fully active panels. Refer to the NCCDS Requests and DAS Requests section for descriptions of the panels. In the case of viewing an SDR or a RADR, a panel containing primarily only the referenced request ID information will appear. The details on the deleted request can be found by viewing the deleted request itself. An example of viewing an SDR is shown below:

Figure 11.24. Viewing an SDR Panel



Deleting a Request

All requests other than SDR, WLR, RADR, or PBKDR may be deleted if the request status is Transmitted, Granted, NCCQueued, Waitlisted or stored only. The button performing the deletion function could show SDR, RADR, PBKDR, or Delete depending on the request the deletion action is to be performed on. To perform the

deletion function, select an applicable request and click on the delete button. A dialog box appears asking for confirmation of the delete request. Clicking Yes causes an SDR to be generated and submitted to NCCDS to delete an NCCDS schedule request, an RADR or PBKDR to be generated and submitted to DAS for deletion of a DAS schedule or playback request, or the selected Stored Only SAR to be removed from the SNAS database.

Figure 11.25. Confirm Delete Request

For SDRs transmitted to the NCCDS, the same types of alerts that appear for a SAR will also be generated for an SDR; i.e., the SDR was transmitted, an SRM was received, etc. If the SDR is "accepted", an SRM will be received indicating that the referenced request is being deleted. However, the only SRM received for the SDR itself is one indicating that the SDR has been queued for processing (NCCQueued). The SDR, therefore, remains forever in an NCCQueued state from a SNAS standpoint, even though the SDR may have been successfully processed.

Deleting an NCCDS request does not cause it to be removed from the Schedule Request Summary. When the SDR is accepted, the status of the deleted request is simply updated to Deleted.

Cloning a Request

When either a SAR, RR or RAR is selected, the Clone button becomes active. When this button is clicked for a selected applicable request, a SAR panel (when cloning a SAR or RR) or an RAR panel appears. The panel displays detailed service and parameter information in the selected request. The user can then make any desired changes to event parameters, services and service parameters and submit the request as a new SAR or RAR.

Replacing a Request

All requests other than SDR, WLR, RADR, and PBKDR may be replaced if the request status is Transmitted, Granted, NCCQueued, or Waitlisted. The button performing the replace function could show RR, RAMR or PBKMR depending on the request the replace action is to be performed on. To perform the replace function, select an applicable request and click on the replace button. The MOC Client retrieves the request details and displays the appropriate panel with the reference ID set to the selected request and the request details set to the referenced request's details. The panel will look similar to the panel that was used to create the referenced request, but with a reference ID set. The user can then edit the details and submit the replace request.

For NCCDS RRs, if the RR is granted, then the RR inherits the message class and reference request ID of the request that it replaced. For example, an RR that replaced an SAR will show up in the Schedule Request Summary Panel as a SAR after it has been granted. An RR that replaced an ASAR will show up as an ASAR with the same reference request ID as the ASAR that it replaced.

Generating an Alternate SAR

SARs, RRs, and ASARs with a status of NCCQueued may have one Alternate SAR generated for them. The user may

generate an ASAR by selecting the request and clicking the ASAR button. The MOC Client retrieves the request details and displays a Create Alternate SAR Panel with the reference ID set to the selected request and the request details set to the reference request details. The user can then edit the details and submit the ASAR. If an ASAR is granted, then the message class is changed by the SNAS server to SAR and it will appear as such in the Schedule Request Summary Panel.

Generating a Wait List Request

SARs that have been assigned Declined status by NCCDS may be waitlisted. The user selects the request and clicks on the WLR button. The Wait List Request panel in NCCDS Request section is displayed. The Referenced Request ID is automatically set to the Request ID of the selected request. The user enters the Expiration Time. If this time is reached without successful scheduling of the request on the Wait List, the request is removed from the Wait List and an SRM is sent by NCCDS to indicate that the wait listing process did not result in an event being added to the schedule.

Resubmitting a "Lost" Request and Transmitting a Stored Request

A submitted NCCDS request with a Transmitted status in the SNAS database is considered lost and did not reach NCCDS. For such a request, SNAS allows resubmission of the request with the same Request ID. The user selects the request and clicks Resubmit. A pop-up message will be displayed saying that the request was resubmitted. The same button is also used to transmit a Stored-Only SAR that the scheduler stored on the SNAS database without sending it to NCCDS. To transmit a Stored-Only SAR, select the SAR and the Resubmit button changes to Transmit. Click on the button to transmit the SAR to NCCDS for processing.

Saving the Schedule Request Summary to a File

The Save utility button allows the user to save the Schedule Request Summary to a Comma Separated Values (CSV) text file. The user will be able to choose between saving all unfiltered data set or only the filtered requests currently displayed. The first line of the file is a header line, similar to the table header, documenting the order of the values in each subsequent line. The order of data written to the file will not necessarily be the same as appears in the summary panel. The location of the output file is set by the user through a standard file chooser. Following is the contents of a sample output file:

```
Start Time,Stop Time,Creation Time,Request ID,SUPIDEN,TDRS,Msg Class,Ref. Req.
ID,Status,User ID 2008/056 22:50:00,2008/056 22:56:00,2008/056
22:39:42,0278243,M2117MS,ANY,SAR,0000000,Expired,mocuser3 2008/056
22:57:30,2008/056 23:03:30,2008/056 22:45:52,0278252,M2117MS,ANY,SAR,0000000,
Expired,mocuser3 2008/093 20:50:00,2008/093 20:52:00,2008/093
20:35:17,0312116,M2117MS,ANY,SAR,0000000,Expired,mocuser1 2008/107
20:47:00,2008/107 20:52:00,2008/107 20:35:23,0319601,M2117MS,ANY,
SAR,0000000,Completed,mocuser4 2008/113 20:20:00,2008/113
20:30:00,2008/113 20:05:49,0324609,M2117MS,ANY,SAR,0000000,Completed,
mocuser3 2008/113 20:55:00,2008/113 21:05:00,2008/114 12:51:17,0325221,M2117MS,
ANY,SAR,0000000,Rejected,mocuser4 2008/114 13:04:00,2008/114
13:14:00,2008/114 12:52:55,0325222,M2117MS,ANY,SAR,0000000,Completed,
mocuser4 2008/127 23:20:00,2008/127 23:24:00,2008/127 20:59:32,0338182,M2117MS,
ANY,SAR,0000000,Deleted,mocuser3 2008/127 23:50:00,2008/127
23:54:00,2008/127 21:13:10,0338211,M2117MS,ANY,RR,0338182,Deleted,mocuser3
2008/128 01:05:00,2008/128 01:09:00,2008/127 21:20:13,0338252,M2117MS,ANY,
RR,0338211,Completed,mocuser3
```

Printing the Schedule Request Summary Contents

When clicking on the Print utility button, the user is given choices of printing summary of all requests, summary of filtered requests, details of all requests, or details of filtered requests to a connected print device. Prints of summary are similar to the format of the saved file described in the previous section. Prints of details include information for all services in the requests. An example of the printout including service details is shown below:

Figure 11.26. Schedule Request Summary Print Example

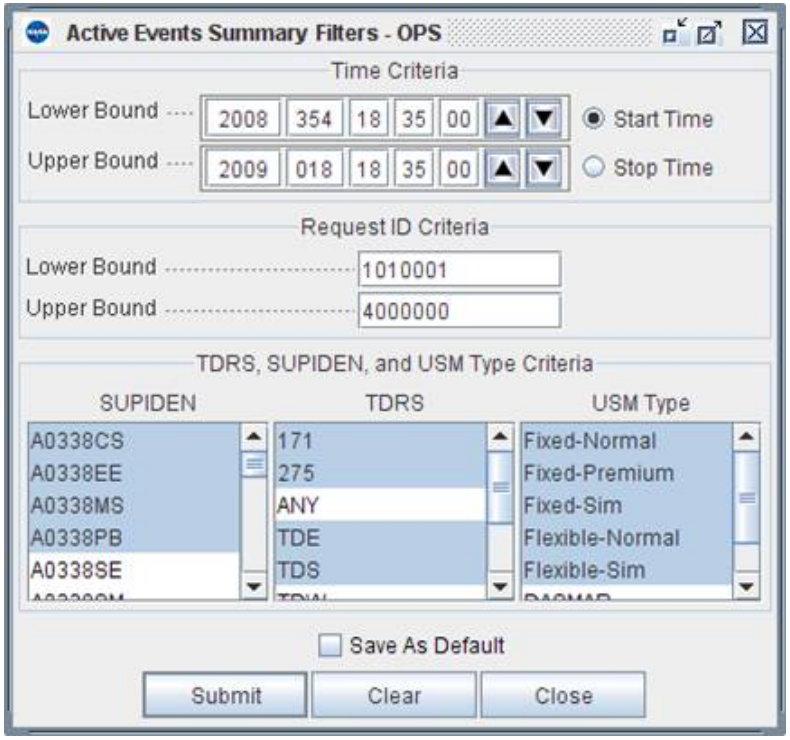
```
Date: 2008/140 13:59:55     SCHEDULE REQUESTS REPORT for OPS         PAGE 1
TYPE:         NCC SAR        SUPIDEN:    A1446MS          TDRS:         TDW
REQUEST ID:   325446         STATUS:     Declined         PRIORITY:     4
TOLERANCES: + 000000         Use TSWs:   false            WAIT LIST:    false
            - 000000         FREEZE INTERVAL:
Start Time:   2008/115 19:12:30          Creation Time:   2008/114 16:45:11
                                         User ID:         mocuser1
                 NOMINAL          TOLERANCE
         SSC  START   DURATION   PLUS  MINUS   MINDUR  CSN  SBSN
         ---  ------  ------    ------ ------  ------  ---  ----
         H04  000145  005010
         B13  000000  005345
         T76  000145  005010

-----------------------------------------------------------------------------

TYPE:         NCC SAR        SUPIDEN:    A1446MS          TDRS:         TDW
REQUEST ID:   325447         STATUS:     Declined         PRIORITY:     4
TOLERANCES: + 000000         Use TSWs:   false            WAIT LIST:    false
            - 000000         FREEZE INTERVAL:
Start Time:   2008/115 20:54:45          Creation Time:   2008/114 16:45:13
                                         User ID:         mocuser1
                 NOMINAL          TOLERANCE
         SSC  START   DURATION   PLUS  MINUS   MINDUR  CSN  SBSN
         ---  ------  ------    ------ ------  ------  ---  ----
         H04  001245  004102
         B13  000000  005415
         I24  001245  003937
         T76  001245  004102

-----------------------------------------------------------------------------

TYPE:         NCC SAR        SUPIDEN:    A1446MS          TDRS:         TDE
REQUEST ID:   325448         STATUS:     Declined         PRIORITY:     4
TOLERANCES: + 000000         Use TSWs:   false            WAIT LIST:    false
            - 000000         FREEZE INTERVAL:
Start Time:   2008/115 21:49:31          Creation Time:   2008/114 16:45:16
                                         User ID:         mocuser1
                 NOMINAL          TOLERANCE
         SSC  START   DURATION   PLUS  MINUS   MINDUR  CSN  SBSN
         ---  ------  ------    ------ ------  ------  ---  ----
         H04  000101  003343
         V13  000000  003629
         I29  000101  003343
         T09  000101  000500

-----------------------------------------------------------------------------

TYPE:         NCC SAR        SUPIDEN:    A1446MS          TDRS:         TDW
REQUEST ID:   325449         STATUS:     Declined         PRIORITY:     4
TOLERANCES: + 000000         Use TSWs:   false            WAIT LIST:    false
            - 000000         FREEZE INTERVAL:
Start Time:   2008/115 22:37:30          Creation Time:   2008/114 16:45:17
                                         User ID:         mocuser1
                 NOMINAL          TOLERANCE
         SSC  START   DURATION   PLUS  MINUS   MINDUR  CSN  SBSN
         ---  ------  ------    ------ ------  ------  ---  ----
         C06  000000  001253

-----------------------------------------------------------------------------
```

Scheduling/Scheduling Tools/Active Events Summary

This menu option is used for displaying selected active NCCDS and DAS events confirmed by DAS and NCCDS. A selection criteria panel appears when this menu option is selected. The selection criteria includes a time range for either the event start times or the event stop times, a range for request/event IDs, one or more SUPIDENs, one or more TDRSs, and one or more USM types. The current selection criteria, excluding the time range, can be saved to the client workstation by checking the Save as Default checkbox.

The Submit button is used to start the retrieval process, and to save the current selection criteria to disk if the Save as Default checkbos is checked. The Clear button is to remove all selecton criteria. For a selection category (SUPIDEN, TDRS, USM Type), no selections for the category are the same as selecting all values for the category.

Figure 11.27. Active Events Summary Filtering Panel



Upon submitting the selection criteria to the SNAS server, an Active Events Summary Panel appears. This panel displays a tabular summary of all schedule requests granted/confirmed by NCCDS and DAS and added to the NCCDS or DAS active events that meet the selection criteria. NCCDS transmits all confirmed events to SNAS and SNAS stored them on the SNAS database. DAS does not send event information on granted events. A granted event retrieval request is sent to DAS for information on the granted DAS events to be included in the display on the Active Events Summary panel. For a DAS playback event, the Stop Time shown is the time DAS determined when the plackback will end. In the Active Events Summary that follows the green highlight indicates those events were active at the time the table was snapped.

Figure 11.28. Active Events Summary Panel

Field Descriptions

Table 11.7. Active Events Summary Panel Field Descriptions

Field	Description
Pending D/R	Indicates whether an NCCDS event is pending deletion or replacement. Pending means that an SDR or RR is either queued by SNAS for transmission to NCCDS, or has already been transmitted by SNAS, but that a response has not yet been received from NCCDS. If an SDR or RR is pending, a "D" or "R" is displayed in this column.
Start Time	Start time for the confirmed event.
Stop Time	Stop time for the confirmed event.
Event ID	Used by NCCDS or DAS to uniquely identify the event. For a SNAS initiated event, the Event ID is identical to the Request ID of the original request that was generated to request service. For events scheduled by an NCCDS operator, it is in the range 9,000,000 to 9,999,999. For events scheduled by a DAS operator, it is in the range 8,900,000 – 8,999,999.
SUPIDEN	A seven-character Support Identifier code for NCCDS events to be used to identify the satellite or task being supported, or a four-digit SIC for DAS events.
TDRS	Three-character TDRS name.
USM Type	In NCCDS terminology, the type of User Schedule Message (USM) received from NCCDS that was used to describe the event. DAS does not generate USMs, but the DAS event type (DASMAR or DASPBK) is nonetheless listed in this column.
# of Services	Number of services associated with this event.
PE ID	Prototype Event ID. For NCCDS events scheduled using an NCCDS-defined Prototype Event.
Service Type Antennas	Service type and antenna number of the scheduled service.
Number of Active Events - counter	The number of active events currently displayed on the Active Events Summary panel. This number changes with changes to filtering conditions.

Additional Content

Table 11.8. USM Type Values

USM Type	Description
Fixed-Normal	NCCDS Normal Support, Fixed Schedule
Fixed-Premium	NCCDS Premium Support, Fixed Schedule

Fixed-Sim	NCCDS Simulation Support, Fixed Schedule
Flexible-Normal	NCCDS Normal Support, Flexible Schedule
Flexible-Sim	NCCDS Simulation Support, Flexible Schedule
DASMAR	DAS MAR Service
DASPBK	DAS Playback Event

For NCC services, the Flexible USMs differ from the Fixed USMs. At the freeze time specified by the customer, the NCCDS will use event flexibility to attempt to recapture the service duration that had been reduced by use of MIND and then will transmit a fixed USM. Refer to Section 7 of the 452-ICD-SN/CSM for further information on how to use flexible scheduling.

The buttons in the lower portion of the panel are enabled or disabled, depending upon which event is selected and whether that event has a pending SDR or RR, or if that event is ongoing. The following button descriptions assume that the selected event enables the button.

Panel Operation

The Active Events Summary Panel displays in a tabular form all the requests accepted by NCCDS and/or DAS that meet the selection criteria. Because some SARs have no stop time (see field descriptions for Schedule Request Summary Panel), SDRs have no start or stop time and playbacks have no start time, the Schedule Request Summary Panel may not include all events. To get around this problem, on the Active Events Summary Filters panel click clear to eliminate the time criteria - the option Save as Default can be clicked to avoid the time criteria in all future requests.

The Active Events Summary panel offers sorting and filtering capabilities. Refer to Tabular Displays bullet in Chapter 4 General Operating Guidelines for detailed descriptions on how sorting and filtering work.

When an event is in progress, i.e. the current time is between the event Start and Stop times, the background color of that event turns green, signaling that the event is ongoing. When an ongoing event is clicked on, the Replace button is disabled as replacing an ongoing event is not supported. Upon the completion of an ongoing event, the background green color disappears.

The Active Events Summary can be updated either manually or periodically. The updates include adding new events that meet the selection criteria to the display, updating the pending D/R status of an event, and removing deleted or expired events from the display. To manually update the contents, click on the Reload button at the bottom of the panel. The time the display is last updated along with the number of entries currently in display are printed near the top of the table. The control of the periodic updates is provided in the client.prop file. Refer to Client Property file section for detailed information on how to enable the periodic updates.

There is a "Filter" button near the upper right corner of the panel. When clicked, it brings up a filtering panel populated with the selection criteria (filtering) currently in effect. The selection criteria can be modified and be used as criteria for future updates after clicking on the Submit button.

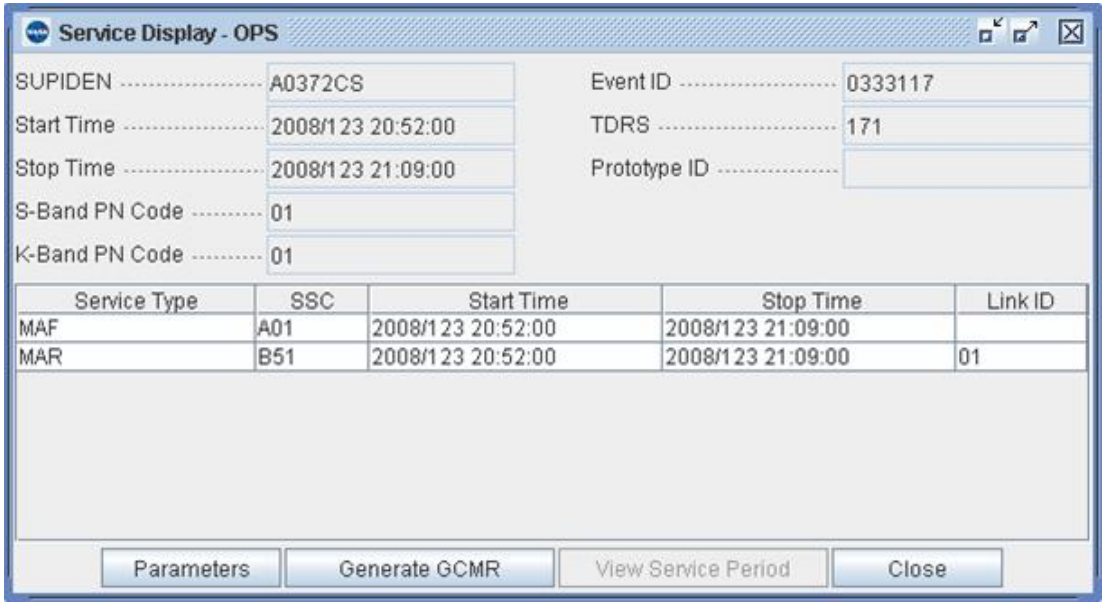
The Close button is used to close the panel when the user is finished working with this panel.

Displaying Event Service Details

To view the service details of an individual event, select the event and click the Display Service button. Except for the

DAS Playback (DASPBK) events, a Service Display panel showing the list of services contained in the event appears.

Figure 11.29. Service Display Panel



As mentioned, the SUPIDEN field for DAS events contains only the SIC portion, this is because the DAS uses SIC for scheduling and not SUPIDEN. Also since the active event information provided by DAS does not provide the SSC of the event, so no listing of SSC will be shown for a DAS event.

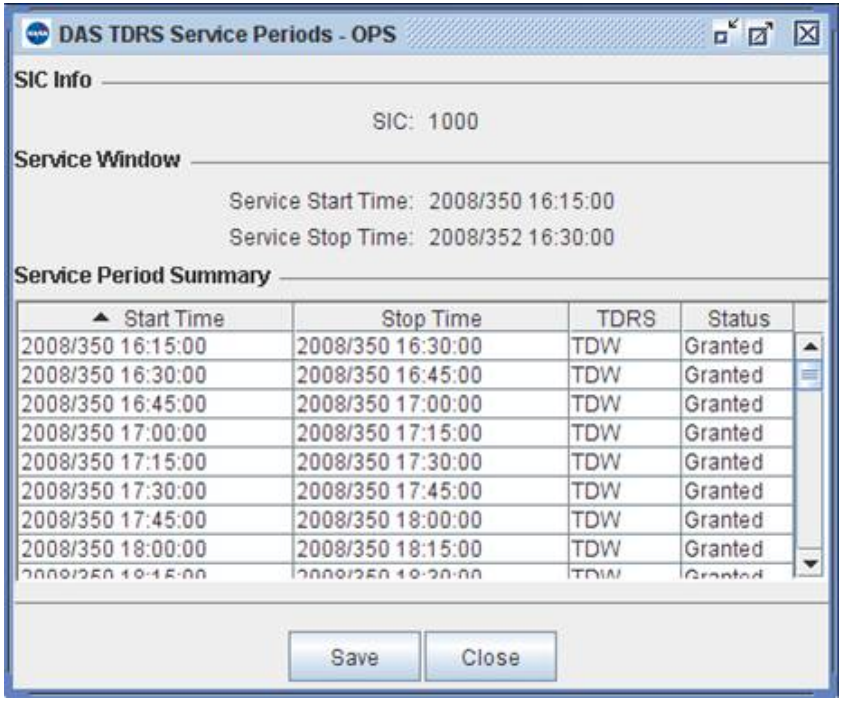
The following buttons allow specific actions to be performed on selected services:

- **Parameters**. Select a service and click on this button will open up the appropriate SSC Parameter panel in read-only mode displaying parameter values for the selected service.

- **Generate GCMR**. When the event is ongoing, selecting one of its service and click on this button will launch a GCMR selection panel for the user to select a type of Ground Control Message Request (GCMR) to submit to NCCDS or DAS to reconfigure for the selected service. Refer to Control & Monitor/User Performance Data Summary/Submit GCMR Panel section for details on GCMR operations.

- **View Service Periods.**This button is enabled when a DAS event is selected. This button will bring up a read-only subpanel displaying the planned TDRS transitions for the DAS service. The contents of the panel can be saved to a disk file by clicking the Save button.

Figure 11.30. View Service Periods Panel



Deleting an Event

Events may be deleted in the same way that schedule requests are deleted through the Schedule Request Summary Panel. Only events that are not already pending deletion or replacement may be deleted. Ongoing events may be deleted, resulting in early termination of service.

A request to delete an event is initiated by selecting the event and then clicking the Delete button. A dialog box appears asking for confirmation of the delete request. Clicking Yes causes a deletion request (SDR, RADR, or PBKDR) to be generated and transmitted to NCCDS or DAS, and a pop-up box saying "Deletion request sent" to be displayed.

Responses from NCCDS and DAS on the deletion request are displayed on the Alert panel. For SDRs transmitted to and processed by NCCDS, NCCDS responds with SRMs on both the SDR itself and on the event the SDR is requesting to delete. If the SDR is accepted by NCCDS, an SRM for the referenced event indicates that the event has been deleted and a seperate SRM for the SDR itself will indicate that the SDR is in NCC-Queued state. Once both SRMs appear in the Alert panel, click on the Reload button on the Active Schedule Summary panel and the event selected for deletion will be removed from the display.

Replacing an Event

Events may be replaced in the same way that schedule requests are replaced through the Schedule Request Summary Panel. Only events that are not already pending deletion or replacement may be replaced. Ongoing events or events scheduled by the NCCDS operator may not be replaced.

An event is replaced by selecting it and clicking the Replace button. The MOC Client retrieves the associated event details and displays the appropriate panel with the reference ID set to the selected event and the event details set to the referenced event's details. The panel will look similar to the panel that was used to create the referenced request, but with

a reference ID set. The user can then edit the details and submit the replace request.

For events scheduled by an NCCDS operator, no details for the associated requests for these events will exist in the SNAS database. For these cases, the response to a Replace will be a pop-up window with the following message:

- "SNAS does not have any record of this request. The reference request may have been submitted directly through the NCC. Please contact the NCC directly to submit this Replace Request."

Saving the Active Events Summary to a File

The Save button allows the user to save the Active Events Summary to a Comma Separated Values (CSV) text file. The user will be able to choose between saving all unfiltered data set or only the filtered events currently displayed. The data is written to the file in the same order as appears in the summary panel. The first line of the file is a header line, similar to the table header, documenting the order of the values in each subsequent line. The location and name of the output file is set by the user through a standard file chooser. Following is the contents of a sample output file:

```
Pending D/R,Start Time,Stop Time,Event ID,SUPIDEN,TDRS,USM Type,# of Services,PE
ID,Service Type Antennas  ,2008/129 00:15:00,2008/129 00:35:00,0338249,
A0372CS,171,Fixed-Normal,2, ,MAF  MAR01  ,2008/129
00:45:00,2008/129 01:05:00,0338238,A0372CS,171,Fixed-Normal,2, ,
MAF  MAR01  ,2008/129 01:15:00,2008/129 01:35:00,0338239,A0372CS,171,
Fixed-Normal,2, ,MAF  MAR01  ,2003/035 23:22:00,2003/036
10:00:00,5455300,1446,275,DASMAR,1, ,
```

Printing the Active Events Summary Contents

When clicking on the Print utility button, the user is given choices of printing a summary of filtered events or a summary of details of filtered events to a connected print device. Prints of summary are similar to the format of the saved file described in the previous section. Prints of details include information for all services in the events.

Automated Active Events Upload

Information in active NCCDS and DAS events can also be formatted and saved automatically on client workstation by turning on the**asEnable**flag and specifying a directory/name for the**asOutputPath**parameter in the client.prop file. A periodic frequency (how often in minutes to force retrieval of the active events regardless of whether there have been changes) and a poll period (how often to poll the active events to determine if there have been changes since the last transmission and if the schedule has changed then transmit a new file) field in the AVTIVE_EVENTS_UPLOAD database table control the frequecy of the updates. Example of a file containing two active NCCDS events is shown below:

```
CREATIONTIME="2008/145 15:25:36" EVENTCOUNT="2"
SCHEDULEDEVENT="1"   EVENTSTART="08146061600"
EVENTSTOP="08146065252"   EVENTID="0469012"   SUPIDEN="A1446MS"
TDRS="TDW"   VIC="null"   USMTYPE="FIXED USM NORM"
SERVICECOUNT="3"   PROTOTYPE_EVENTID="null"   SBANDPNCODE="06"
KBANDPNCODE="06"   SERVICECOUNT="3"   SERVICE="1"
SERVICETYPE="SSAF"     SSCCODE="H04"
SERVICESTART="08146061600"     SERVICESTOP="08146064600"     LINKID="
1"   ENDSERVICE1   SERVICE="2"     SERVICETYPE="MAR"
SSCCODE="B13"     SERVICESTART="08146061600"
```

```
SERVICESTOP="08146065252"     LINKID="01"   ENDSERVICE2
SERVICE="3"     SERVICETYPE="TRKC"
SSCCODE="T76"     SERVICESTART="08146061600"
SERVICESTOP="08146064600"     LINKID="  "   ENDSERVICE3
ENDSCHEDULEDEVENT1 SCHEDULEDEVENT="2"
EVENTSTART="08146020146"   EVENTSTOP="08146023730"
EVENTID="0469007"   SUPIDEN="A1446MS"   TDRS="TDE"   VIC="null"   USMTYPE="FIXED
USM NORM"   SERVICECOUNT="3"   PROTOTYPE_EVENTID="null"
SBANDPNCODE="06"   KBANDPNCODE="06"   SERVICECOUNT="3"
SERVICE="1"     SERVICETYPE="SSAF"
SSCCODE="H04"     SERVICESTART="08146020146"
SERVICESTOP="08146023146"     LINKID=" 1"   ENDSERVICE1
SERVICE="2"     SERVICETYPE="SMAR"
SSCCODE="V13"     SERVICESTART="08146020146"
SERVICESTOP="08146023730"     LINKID="01"   ENDSERVICE2
SERVICE="3"     SERVICETYPE="TRKC"
SSCCODE="T77"     SERVICESTART="08146020146"
SERVICESTOP="08146023146"     LINKID="  "   ENDSERVICE3 ENDSCHEDULEDEVENT2
```

Example of a file containing one active DAS event is shown below:

```
CREATIONTIME="2008/347 15:55:02" EVENTCOUNT="1"
SCHEDULEDEVENT1   EVENTSTART="2003/037 22:35:00"   EVENTSTOP="2003/038
10:00:00"   EVENTID="5496343"   TDRS="TDW"   SIC="1000"
SERVICECOUNT="1"   SERVICE1     SERVICETYPE="DASMAR"
PARAMETERCOUNT="16"     PARAMETERS
Protocols_Data="Async"
Storage_Duration="3"       IP_Add_I="150.144.173.78"
Data_Fmt_I="M"       Carrier_Freq_Ref="2287500000"
Data_class_ID="CCSDS frame"       IBU_Mode="Adaptive
mode"       G2_Symb_Inv_I="Inverted"       PN_Code_Q="501"
Acq_Mode="Mode A"       Data_Rate_I="1000"
Symb_Fmt_I="NRZ"       PN_Code_I="3176"
Port_Num_I="6013"       Modulation_Data_Ch="SQPN single
channel"       Mission_ID="000"     ENDPARAMETERS
SERVICEPERIODCOUNT="21"     SERVICEPERIOD1
SERVICEPERIODSTARTTIME="2003/036 23:45:00"
SERVICEPERIODSTOPTIME="2003/036 23:59:59"
SERVICEPERIODTDRS="275"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD1     SERVICEPERIOD2
SERVICEPERIODSTARTTIME="2003/037 00:00:00"
SERVICEPERIODSTOPTIME="2003/037 00:13:00"
SERVICEPERIODTDRS="275"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD2     SERVICEPERIOD3
SERVICEPERIODSTARTTIME="2003/037 00:13:00"
SERVICEPERIODSTOPTIME="2003/037 00:44:00"
SERVICEPERIODTDRS="TDW"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD3     SERVICEPERIOD4
SERVICEPERIODSTARTTIME="2003/037 00:44:00"
SERVICEPERIODSTOPTIME="2003/037 01:19:00"
```

```
SERVICEPERIODTDRS="TDE"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD4     SERVICEPERIOD5
SERVICEPERIODSTARTTIME="2003/037 01:19:00"
SERVICEPERIODSTOPTIME="2003/037 01:49:00"
SERVICEPERIODTDRS="275"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD5     SERVICEPERIOD6
SERVICEPERIODSTARTTIME="2003/037 01:49:00"
SERVICEPERIODSTOPTIME="2003/037 02:21:00"
SERVICEPERIODTDRS="TDW"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD6     SERVICEPERIOD7
SERVICEPERIODSTARTTIME="2003/037 02:21:00"
SERVICEPERIODSTOPTIME="2003/037 02:55:00"
SERVICEPERIODTDRS="TDE"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD7     SERVICEPERIOD8
SERVICEPERIODSTARTTIME="2003/037 02:55:00"
SERVICEPERIODSTOPTIME="2003/037 03:26:00"
SERVICEPERIODTDRS="275"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD8     SERVICEPERIOD9
SERVICEPERIODSTARTTIME="2003/037 03:26:00"
SERVICEPERIODSTOPTIME="2003/037 03:57:00"
SERVICEPERIODTDRS="TDW"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD9     SERVICEPERIOD10
SERVICEPERIODSTARTTIME="2003/037 03:57:00"
SERVICEPERIODSTOPTIME="2003/037 04:32:00"
SERVICEPERIODTDRS="TDE"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD10     SERVICEPERIOD11
SERVICEPERIODSTARTTIME="2003/037 04:32:00"
SERVICEPERIODSTOPTIME="2003/037 05:02:00"
SERVICEPERIODTDRS="275"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD11     SERVICEPERIOD12
SERVICEPERIODSTARTTIME="2003/037 05:02:00"
SERVICEPERIODSTOPTIME="2003/037 05:34:00"
SERVICEPERIODTDRS="TDW"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD12     SERVICEPERIOD13
SERVICEPERIODSTARTTIME="2003/037 05:34:00"
SERVICEPERIODSTOPTIME="2003/037 06:08:00"
SERVICEPERIODTDRS="TDE"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD13     SERVICEPERIOD14
SERVICEPERIODSTARTTIME="2003/037 06:08:00"
SERVICEPERIODSTOPTIME="2003/037 06:39:00"
SERVICEPERIODTDRS="275"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD14     SERVICEPERIOD15
SERVICEPERIODSTARTTIME="2003/037 06:39:00"
SERVICEPERIODSTOPTIME="2003/037 07:10:00"
SERVICEPERIODTDRS="TDW"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD15     SERVICEPERIOD16
SERVICEPERIODSTARTTIME="2003/037 07:10:00"
SERVICEPERIODSTOPTIME="2003/037 07:45:00"
SERVICEPERIODTDRS="TDE"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD16     SERVICEPERIOD17
```

```
SERVICEPERIODSTARTTIME="2003/037 07:45:00"
SERVICEPERIODSTOPTIME="2003/037 08:15:00"
SERVICEPERIODTDRS="275"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD17     SERVICEPERIOD18
SERVICEPERIODSTARTTIME="2003/037 08:15:00"
SERVICEPERIODSTOPTIME="2003/037 08:47:00"
SERVICEPERIODTDRS="TDW"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD18     SERVICEPERIOD19
SERVICEPERIODSTARTTIME="2003/037 08:47:00"
SERVICEPERIODSTOPTIME="2003/037 09:21:00"
SERVICEPERIODTDRS="TDE"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD19     SERVICEPERIOD20
SERVICEPERIODSTARTTIME="2003/037 09:21:00"
SERVICEPERIODSTOPTIME="2003/037 09:52:00"
SERVICEPERIODTDRS="275"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD20     SERVICEPERIOD21
SERVICEPERIODSTARTTIME="2003/037 09:52:00"
SERVICEPERIODSTOPTIME="2003/037 10:00:00"
SERVICEPERIODTDRS="TDW"       TDRSSUPPORTSTATUS="Granted"
ENDSERVICEPERIOD21   ENDSERVICE1 ENDSCHEDULEDEVENT1
```

Scheduling/Scheduling Tools/TSW Time Shift

The TSW Time Shift tool allows the user to perform a time shift, forward or backward, on TSWs stored in the SNAS database that meet the selection criteria of SIC, TSW Set ID and a time range. When this menu option is selected, a TSW Time Shift panel appears.

Figure 11.31. Time Shift Panel

Field Descriptions

Table 11.9. Time Shift Panel Field Descriptions

Field	Description
SIC	Spacecraft Identification Code

TSW Set ID	The TSW Set ID for the TSWs to be selected for time shift
Start/Stop Times	Time range for selection of TSWs. All TSWs with the TSW Start Time fall within the time range will be selected.
Shift Time	Amount of time, plus for shifting forward and minus for shifting backward, desired to shift the selected TSWs. Both Start and Stop times for all selected TSWs will be shifted the same amount.

Button Selections

- **Submit**- Submits the time shift request to SNAS server. Upon completion, the new TSWs with the new Start/Stop times will be added to the SNAS database and the number of new TSW added will be reported on the Alert panel. The original TSWs that meet the selection criteria will not be removed from the database.

- **Close**- Closes the Time Shift panel and returns to the Main Control panel

Scheduling/Scheduling Tools/Bulk Modify

The Bulk Modify tool allows the user to select one or more NCCDS schedule requests with one or more selected request status and perform one bulk modification on them. The criteria used for selecting schedule requests for bulk modify consideration include request start time range, SUPIDEN, TDRS and request status. After the user specifies the selection criteria, SNAS displays the list of requests that meet the criteria. The user can further select one or more requests on the displayed list for bulk modification. Because Bulk Modify is submitting RR for each selected request, only requests that are NCC Queued or Granted should be modified this way - there is no guarrantee that requests currently in any other state will be promoted to NCC Queued or Granted prior to these RRs being processed by the NCCDS. Requests in the other states are being displayed for informational purposes.

After the request selection, the user decides which of the three parameters -- SUPIDEN, TDRS, or Time -- is to be modified. The Bulk Modify panel contains three tabs enabling the user to change the three parameters. For a SUPIDEN or a TDRS change, an existing (From) and a new (To) IDs are specified. For time change, an amount of time slippage, forward or backward, is entered. Upon the submission of the bulk modify request, SNAS assembles and submits to NCCDS one RR for each selected request.

Figure 11.32. Bulk Modify Panel

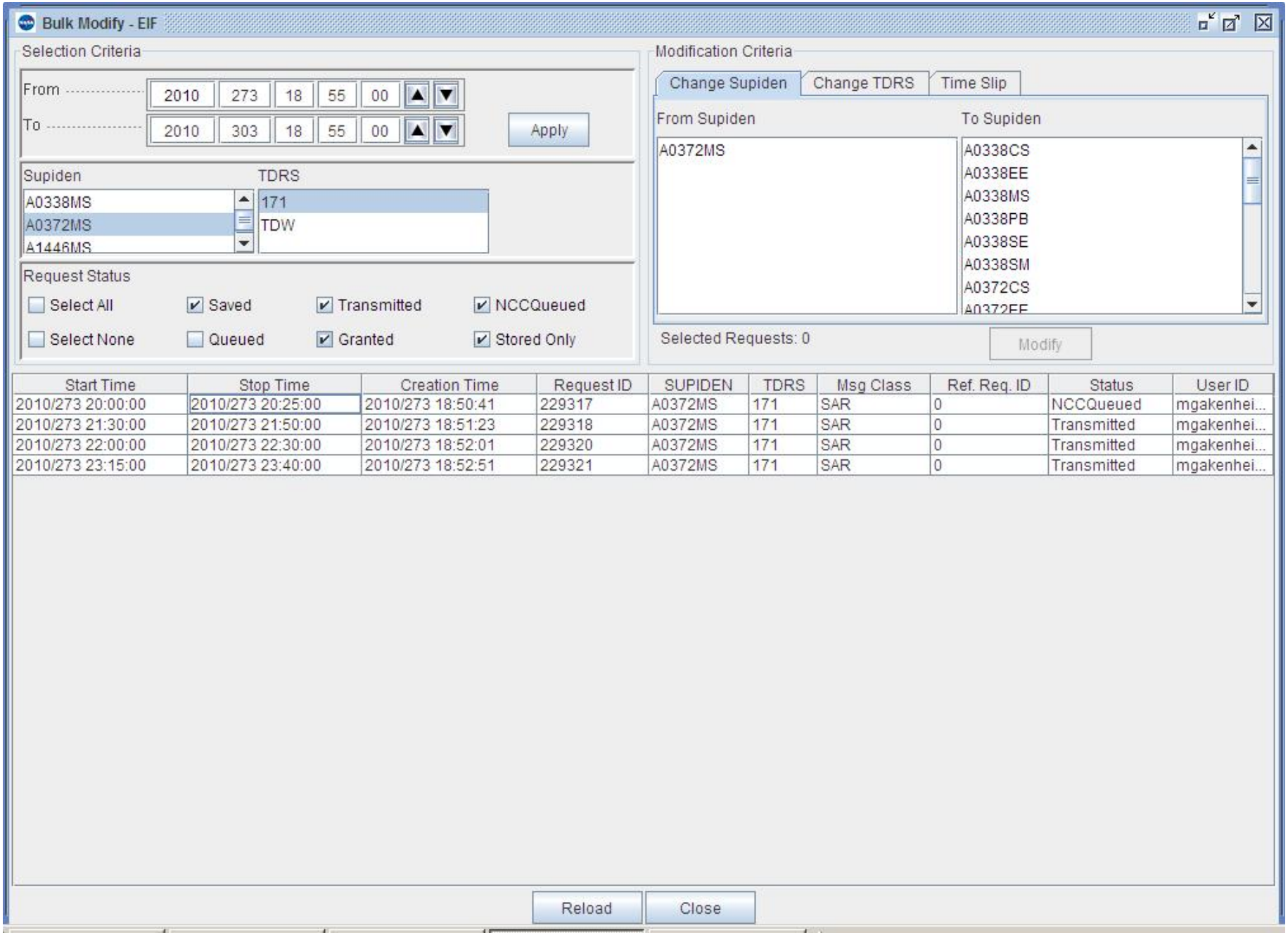


Figure 11.33. Bulk Modify Panel Time Slip Tab

Field Descriptions

Table 11.10. Bulk Modify Panel Field Descriptions

Field	Description
Selection Criteria From/To Times	Time range for the start time of requests to be selected
Selection Criteria SUPIDEN	One or more SUPIDENs to be used as selection criteria
Selection Criteria Station	One or more TDRSs to be used as selection criteria
Selection Criteria Request Status	One or more request status to be used as selection criteria
List of Requests	This display area shows all NCCDS schedule requests meet the selection criteria. After the time range has been applied, changing the other selection criteria will dynamically update the list of requests displayed. One or more requests can be selected (highlighted) from this displayed list for bulk modify implementation
Modification Criteria From/To SUPIDEN	The old and new SUPIDENs. All selected requests with the old SUPIDEN will be replaced with requests with the new SUPIDEN
Modification Criteria From/To Station	The old and new TDRSs. All selected requests with the old TDRS will be replaced with requests with the new TDRS
Modification Criteria Time Slip	The amount of time slippage to be applied to the start time of the selected requests

Button Selection

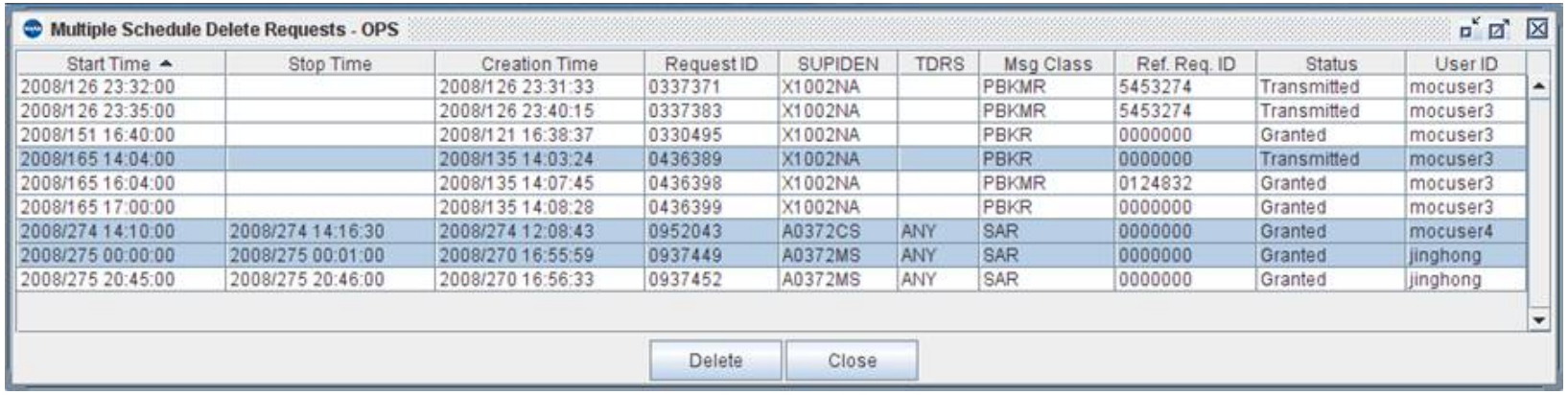
- **Apply (Selection Criteria)**- Applies the time range as request start time selection criteria
- **Modify**- Applies the currently displayed Modification Criteria -- SUPIDEN, TDRS, or Time Slip -- to selected requests.
- **Reload**- Refreshes the list of requests that meet the selection criteria
- **Close**- Closes the Bulk Modify Panel and returns to the Main Control panel

Scheduling/Scheduling Tools/Multiple Schedule Delete Requests

The Multiple Schedule Delete Requests menu option allows the user to select more than one schedule request eligible for deletion and submit deletion request to delete the selected requests from NCCDS/DAS databases. The time interval between two consecutive submissions is set to 10 seconds. Eligible requests that were only stored on SNAS database and not yet submitted to NCCDS/DAS can also be selected for deletion from the SNAS database.

When this menu option is selected, the Multiple Schedule Delete Requests panel appears displaying all requests eligible for deletion. Press Ctrl key and click left mouse button on each target request simultaneously to select the request for deletion. When all target requests have been selected, click on the Delete button to initiate the delete process.

Figure 11.34. Multiple Schedule Delete Requests Panel

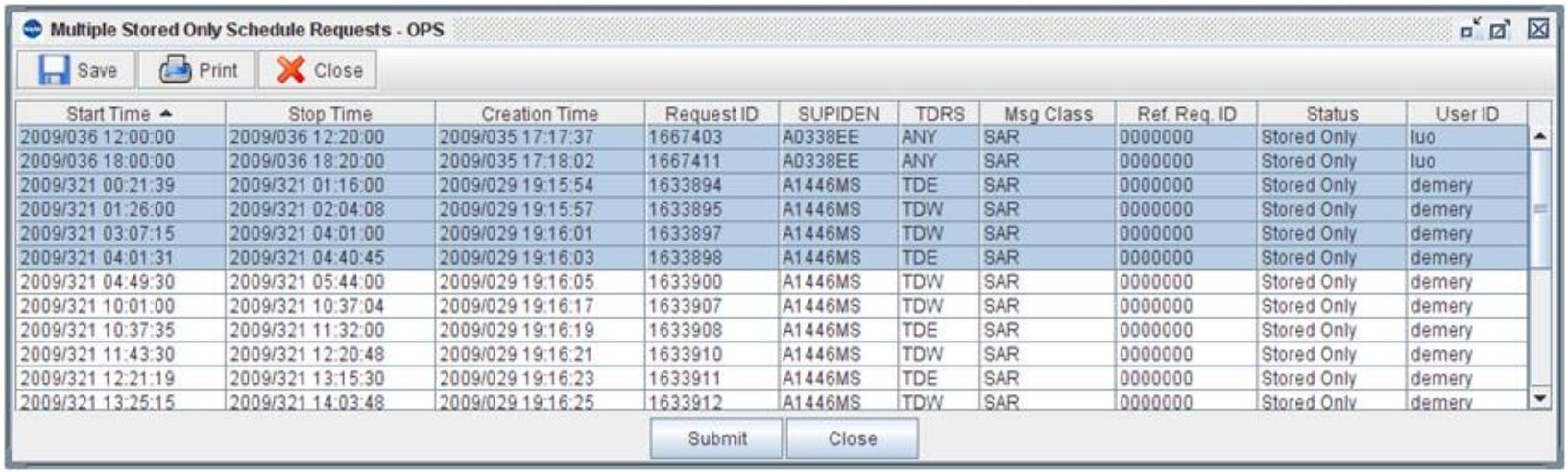


Start Time	Stop Time	Creation Time	Request ID	SUPIDEN	TDRS	Msg Class	Ref. Req. ID	Status	User ID
2008/126 23:32:00		2008/126 23:31:33	0337371	X1002NA		PBKMR	5453274	Transmitted	mocuser3
2008/126 23:35:00		2008/126 23:40:15	0337383	X1002NA		PBKMR	5453274	Transmitted	mocuser3
2008/151 16:40:00		2008/121 16:38:37	0330495	X1002NA		PBKR	0000000	Granted	mocuser3
2008/165 14:04:00		2008/135 14:03:24	0436389	X1002NA		PBKR	0000000	Transmitted	mocuser3
2008/165 16:04:00		2008/135 14:07:45	0436398	X1002NA		PBKMR	0124832	Granted	mocuser3
2008/165 17:00:00		2008/135 14:08:28	0436399	X1002NA		PBKR	0000000	Granted	mocuser3
2008/274 14:10:00	2008/274 14:16:30	2008/274 12:08:43	0952043	A0372CS	ANY	SAR	0000000	Granted	mocuser4
2008/275 00:00:00	2008/275 00:01:00	2008/270 16:55:59	0937449	A0372MS	ANY	SAR	0000000	Granted	jinghong
2008/275 20:45:00	2008/275 20:46:00	2008/270 16:56:33	0937452	A0372MS	ANY	SAR	0000000	Granted	jinghong

Scheduling/Scheduling Tools/Multiple Stored Only Schedule Requests

The Multiple Stored Only Schedule Requests menu option allows the user to select one or more SAR that is stored in the SNAS database and has not been submitted to NCC -- i.e. with a Stored-only status. After the desired Stored-only SARs on the panel are highlighted and the Submit button is clicked, the selected SARs are submitted to NCC at a predetermined rate defined in the client.prop file.

Figure 11.35. Multiple Stored Only Schedule Requests Panel

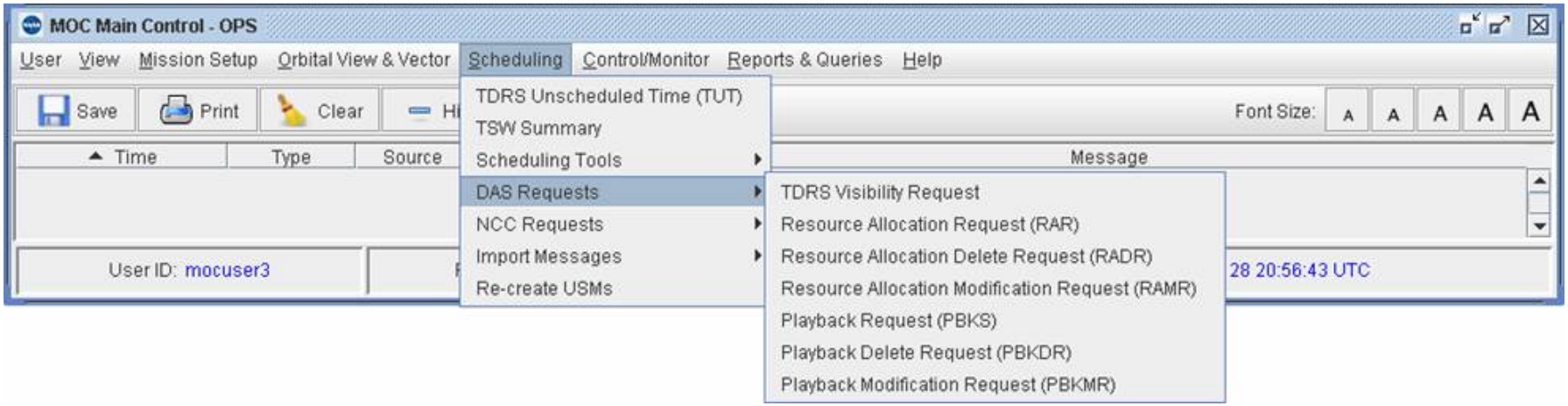


Start Time	Stop Time	Creation Time	Request ID	SUPIDEN	TDRS	Msg Class	Ref. Req. ID	Status	User ID
2009/036 12:00:00	2009/036 12:20:00	2009/035 17:17:37	1667403	A0338EE	ANY	SAR	0000000	Stored Only	luo
2009/036 18:00:00	2009/036 18:20:00	2009/035 17:18:02	1667411	A0338EE	ANY	SAR	0000000	Stored Only	luo
2009/321 00:21:39	2009/321 01:16:00	2009/029 19:15:54	1633894	A1446MS	TDE	SAR	0000000	Stored Only	demery
2009/321 01:26:00	2009/321 02:04:08	2009/029 19:15:57	1633895	A1446MS	TDW	SAR	0000000	Stored Only	demery
2009/321 03:07:15	2009/321 04:01:00	2009/029 19:16:01	1633897	A1446MS	TDW	SAR	0000000	Stored Only	demery
2009/321 04:01:31	2009/321 04:40:45	2009/029 19:16:03	1633898	A1446MS	TDE	SAR	0000000	Stored Only	demery
2009/321 04:49:30	2009/321 05:44:00	2009/029 19:16:05	1633900	A1446MS	TDW	SAR	0000000	Stored Only	demery
2009/321 10:01:00	2009/321 10:37:04	2009/029 19:16:17	1633907	A1446MS	TDW	SAR	0000000	Stored Only	demery
2009/321 10:37:35	2009/321 11:32:00	2009/029 19:16:19	1633908	A1446MS	TDE	SAR	0000000	Stored Only	demery
2009/321 11:43:30	2009/321 12:20:48	2009/029 19:16:21	1633910	A1446MS	TDW	SAR	0000000	Stored Only	demery
2009/321 12:21:19	2009/321 13:15:30	2009/029 19:16:23	1633911	A1446MS	TDE	SAR	0000000	Stored Only	demery
2009/321 13:25:15	2009/321 14:03:48	2009/029 19:16:25	1633912	A1446MS	TDW	SAR	0000000	Stored Only	demery

Scheduling/DAS Requests

The options available under Scheduling/DAS Requests menu on the MOC Client Main Control panel provide full DAS scheduling request capability including retrieving TDRS and playback availability information, and building, submiting and updating resource allocation and playback requests.

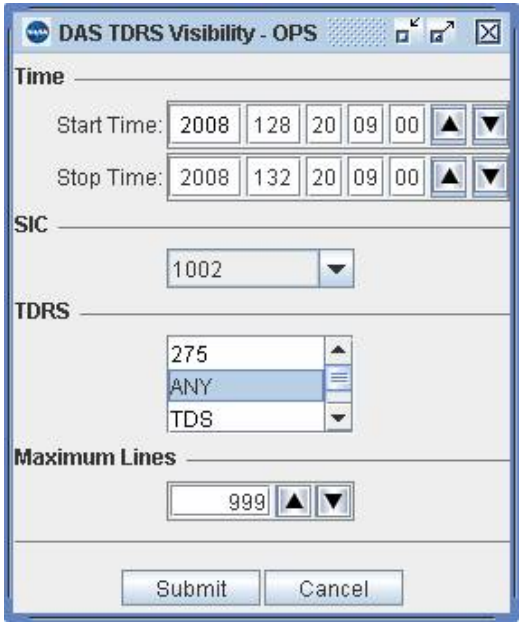
Figure 11.36. Scheduling/DAS Requests Menu



Scheduling/DAS Requests/TDRS Visibility Request

Selecting the DAS TDRS Visibility Request option from the Scheduling/DAS Requests menu results in a panel from which the user can formulate and submit a request to DAS for TDRS visibility information.

Figure 11.37. DAS TDRS Visibilty Request Panel



Field Descriptions

Table 11.11. DAS TDRS Visibility Request Panel Field Descriptions

Field	Description
Start Time	The start of the time interval within which the TDRS Visibility request is for
Stop Time	The end of the time interval within which the TDRS Visibility request is for
SIC	Spacecraft Identification Code
TDRS	Station ID. To request visibility information for any TDRS supporting DAS, use "ANY"
Maximum Lines	Maximum number of TDRS visibility entries to be returned from DAS

Button Selections

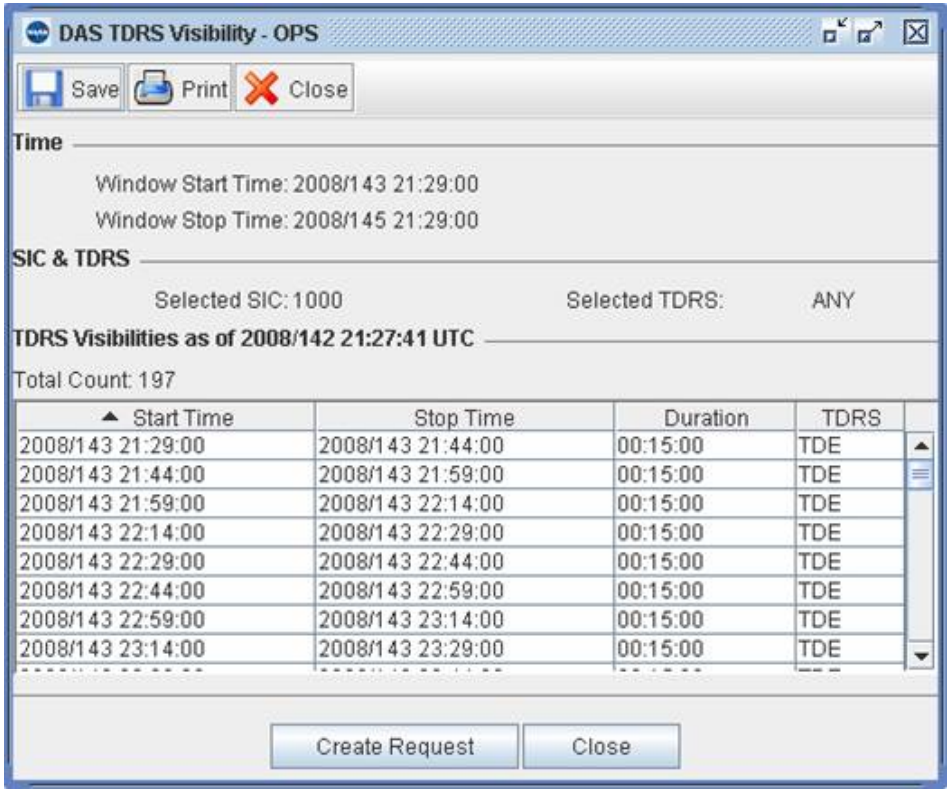
- **Submit**– Submits the TDRS Visibility request to DAS
- **Cancel**– Closes panel and returns to main control panel

DAS TDRS Visibilty Results Panel

The response from DAS to the TDRS Visibility request is a list of windows available for DAS resource alloocation scheduling request. The list of windows is shown on a DAS TDRS Visibility panel.

The DAS TDRS Visibility panel offers sorting capabilities. Refer to Tabular Displays bullet in Chapter 4 General Operating Guidelines for detailed descriptions on how sorting works.

Figure 11.38. DAS TDRS Visibilty Results Panel



Field Descriptions

Table 11.12. DAS TDRS Visibility Results Panel Field Descriptions

Field	Description
Window Start/Stop Times	Time range of the TDRS Visibility request
Selected SIC	SIC selected for Visibilty Request
Selected TDRS	TDRS selected for Visibility Request
Start Time	The start time of a TDRS visibility window
Stop Time	The end time of a TDRS visibility window
Duration	The duration of a TDRS visibility window
TDRS	The TDRS station ID for the visibility window

Button Selection

- **Create Request**– Initiates a Resource Allocation Request (RAR) panel for building and submission of a DAS RAR request after a TDRS visibility window is selected from the TDRS Visibility Results panel. Refer to Resource Allocation Request (RAR) section for detailed information on the RAR panel and its operations

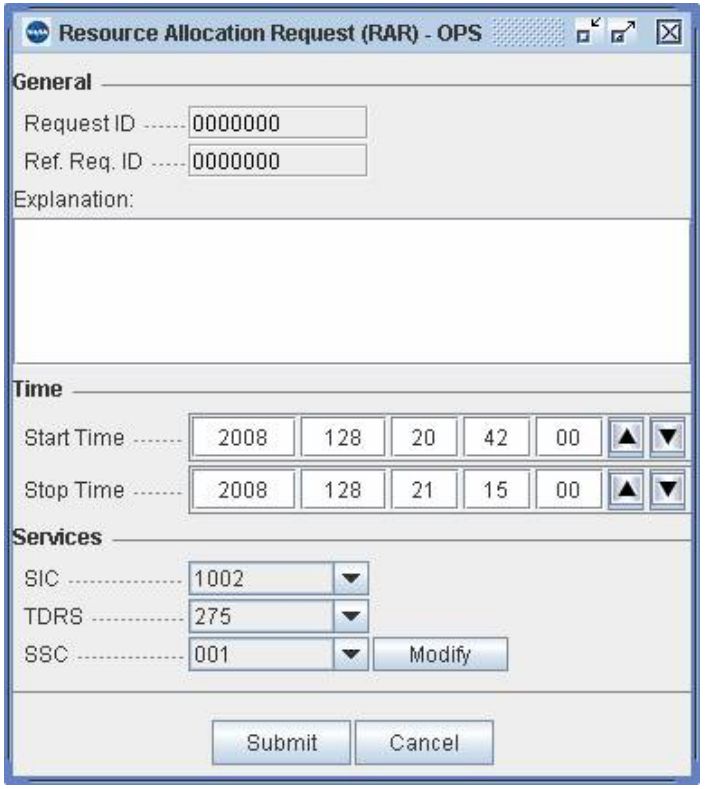
- **Close**– Discards changes and returns to main control panel

Scheduling/DAS Requests/Resource Allocation Request (RAR)

A Resource Allocation Request (RAR) is a request for service from a TDRS supporting DAS scheduling. An RAR is built via a RAR panel and the panel can be launched either from the Create Request button on the TDRS Visibility Results panel or from the Resource Allocation Request (RAR) option on the DAS Requests menu. On the Resource Allocation Request (RAR) panel, the user needs to specifiy the time range, SIC, TDRS and the SSC for the DAS resource allocation request. Parameters associated with the selected SSC can be modified for the RAR.

While a schedule request sent to NCCDS results in NCCDS sending one or more Schedule Result Messages (SRMs) notifying about the disposition of the request and, if confirmed, a User Schedule Message (USM) containing detailed information on the confirmed event to the requester, DAS only responds to a DAS schedule request with a disposition notification. Upon receiving the notification from DAS, SNAS updates the request status stored in the database and displays the notification on the Alert panel. The Schedule Request Summary panel displays the latest transmission and DAS scheduling status following a reload.

Figure 11.39. DAS Resource Allocation Request (RAR) Panel



Field Descriptions

Table 11.13. DAS RAR Panel Field Descriptions

Field	Description
Request ID	A unique 7-digit number generated by SNAS and stored on SNAS database for identification of the request. "0000000" when the RAR is built and submitted
Ref. Request ID	The Request ID referenced in a delete or modify request. "0000000" for a RAR
Explanation	Contains information from DAS regarding the disposition of the RAR
Start Time	Start time for RAR
Stop Time	Stop time for RAR
SIC	Spacecraft Identification Code for the RAR
TDRS	TDRS ID associated with RAR
SSC	SSC associated with RAR

Button Selection

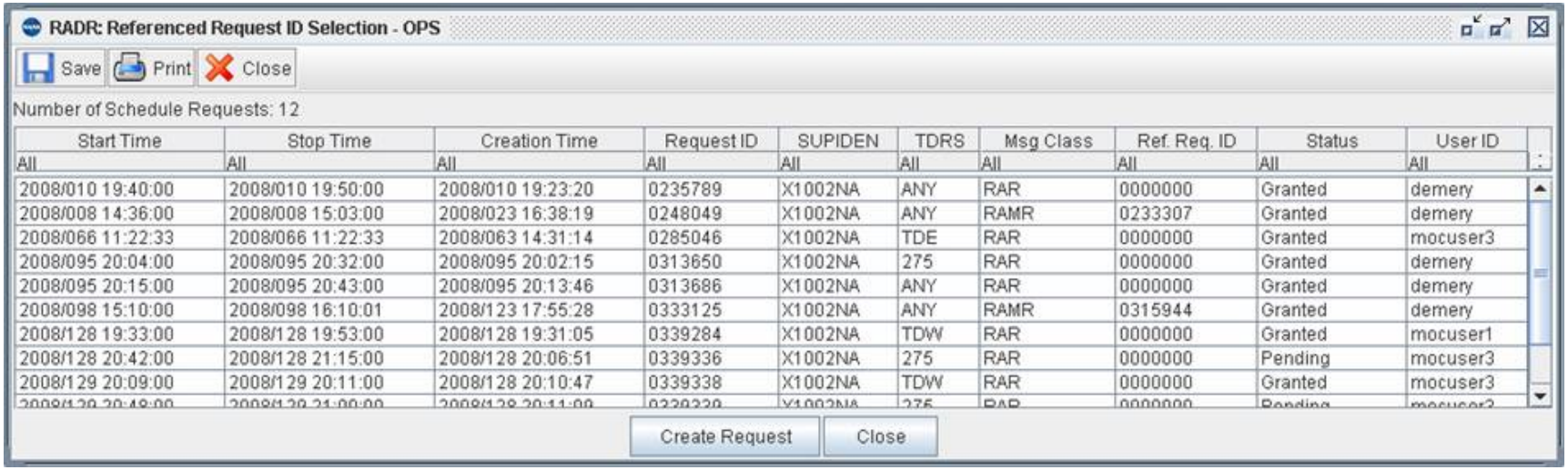
- **Modify/SSC**– Initiates a DAS SSC Parameter panel with parameter values for the SSC selected. The parameter values can then be modified when the RAR is submitted to DAS. Refer to DAS SSC section for more information on the DAS SSC Parameter panel.
- **Submit**– Submits the RAR request to DAS
- **Cancel**– Closes the panel without submitting the RAR

Scheduling/DAS Requests/Resource Allocation Delete Request (RADR)

The Resource Allocation Delete Request menu option allows the user to select from a list of requests eligible for deletion and submit a request to DAS to delete it from its database. An RADR: Referenced Request ID Selection panel appears when this menu option is selected. The panel provides sorting and filtering capabilities similar to those provided in the Schedule Request Summary and Active Schedule Summary panels.

To submit a RADR, select a request from the list and click on the Create Request button. A confirmation dialog popup appears for the user to confirm the transmission of the delete request to NCCDS followed by a second message confirming the request was sent. Monitoring the Schedule Request Summary panel for updates will confirm whether the request was accepted or rejected

Figure 11.40. DAS RADR Selection Panel



Start Time	Stop Time	Creation Time	Request ID	SUPIDEN	TDRS	Msg Class	Ref. Req. ID	Status	User ID
All	All	All	All	All	All	All	All	All	All
2008/010 19:40:00	2008/010 19:50:00	2008/010 19:23:20	0235789	X1002NA	ANY	RAR	0000000	Granted	demery
2008/008 14:36:00	2008/008 15:03:00	2008/023 16:38:19	0248049	X1002NA	ANY	RAMR	0233307	Granted	demery
2008/066 11:22:33	2008/066 11:22:33	2008/063 14:31:14	0285046	X1002NA	TDE	RAR	0000000	Granted	mocuser3
2008/095 20:04:00	2008/095 20:32:00	2008/095 20:02:15	0313650	X1002NA	275	RAR	0000000	Granted	demery
2008/095 20:15:00	2008/095 20:43:00	2008/095 20:13:46	0313686	X1002NA	ANY	RAR	0000000	Granted	demery
2008/098 15:10:00	2008/098 16:10:01	2008/123 17:55:28	0333125	X1002NA	ANY	RAMR	0315944	Granted	demery
2008/128 19:33:00	2008/128 19:53:00	2008/128 19:31:05	0339284	X1002NA	TDW	RAR	0000000	Granted	mocuser1
2008/128 20:42:00	2008/128 21:15:00	2008/128 20:06:51	0339336	X1002NA	275	RAR	0000000	Pending	mocuser3
2008/129 20:09:00	2008/129 20:11:00	2008/128 20:10:47	0339338	X1002NA	TDW	RAR	0000000	Granted	mocuser3

Field Descriptions

Table 11.14. DAS RADR Selection Panel Field Descriptions

Field	Description
Start/Stop Time	Start and stop times of the DAS requests stored in SNAS and DAS databases that are eligible for deletion
Creation Time	The time the request was stored in SNAS database
Request ID	A unique seven-digit ID assigned by SNAS for identification of the request
SUPIDEN	Support Identifier. A seven-character code used to identify the satellite and task being supported. It is broken into three parts: class, SIC, and function
TDRS	TDRS ID for the request
Msg. Class	Type of request (i.e. RAR, RAMR, etc.)
Ref. Req. ID	For an RADR, this field contains the Request ID of the RAR/RAMR the RADR is targeted to delete
Status	The status of the referenced request stored in the SNAS database when the RADR panel is launched
User ID	Account name of user who submitted the request

Button Selections

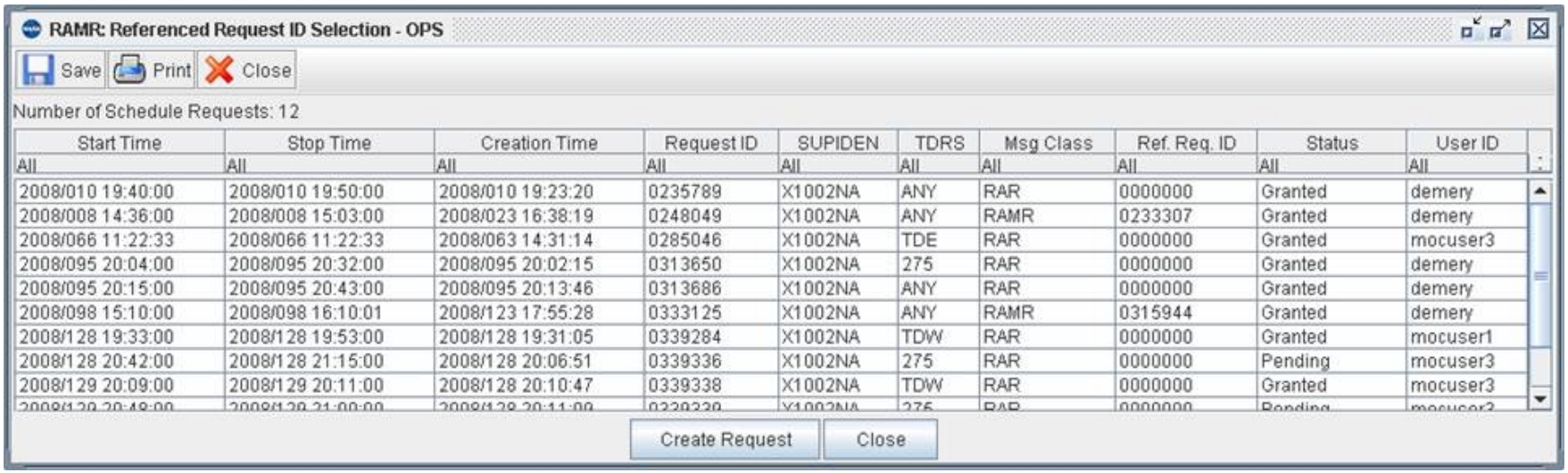
- **Create Request**– Initializes the deletion request
- **Cancel**– Cancels RADR Request and returns to Main Control panel

Scheduling/DAS Requests/Resource Allocation Modification Request (RAMR)

The Resource Allocation Modification Request menu option allows the user to select from a list of requests eligible for modification and submit a request to DAS to modify it. An RAMR: Referenced Request ID Selection panel appears when this menu option is selected. The panel provides sorting and filtering capabilities similar to those provided in

the Schedule Request Summary and Active Schedule Summary panels.

Figure 11.41. DAS RAMR Selection Panel



Start Time	Stop Time	Creation Time	Request ID	SUPIDEN	TDRS	Msg Class	Ref. Req. ID	Status	User ID
All	All	All	All	All	All	All	All	All	All
2008/010 19:40:00	2008/010 19:50:00	2008/010 19:23:20	0235789	X1002NA	ANY	RAR	0000000	Granted	demery
2008/008 14:36:00	2008/008 15:03:00	2008/023 16:38:19	0248049	X1002NA	ANY	RAMR	0233307	Granted	demery
2008/066 11:22:33	2008/066 11:22:33	2008/063 14:31:14	0285046	X1002NA	TDE	RAR	0000000	Granted	mocuser3
2008/095 20:04:00	2008/095 20:32:00	2008/095 20:02:15	0313650	X1002NA	275	RAR	0000000	Granted	demery
2008/095 20:15:00	2008/095 20:43:00	2008/095 20:13:46	0313686	X1002NA	ANY	RAR	0000000	Granted	demery
2008/098 15:10:00	2008/098 16:10:01	2008/123 17:55:28	0333125	X1002NA	ANY	RAMR	0315944	Granted	demery
2008/128 19:33:00	2008/128 19:53:00	2008/128 19:31:05	0339284	X1002NA	TDW	RAR	0000000	Granted	mocuser1
2008/128 20:42:00	2008/128 21:15:00	2008/128 20:06:51	0339336	X1002NA	275	RAR	0000000	Pending	mocuser3
2008/129 20:09:00	2008/129 20:11:00	2008/128 20:10:47	0339338	X1002NA	TDW	RAR	0000000	Granted	mocuser3

Field Descriptions

Table 11.15. DAS RAMR Selection Panel Field Descriptions

Field	Description
Start/Stop Time	Start and stop times of the RARs and RAMRs stored in SNAS and DAS databases that are eligible for modification
Creation Time	The time the request was stored in SNAS database
Request ID	A unique seven-digit ID assigned by SNAS for identification of the request
SUPIDEN	Support Identifier. A seven-character code used to identify the satellite and task being supported. It is broken into three parts: class, SIC, and function
TDRS	TDRS ID for the request
Msg. Class	Type of request (i.e. RAR, RAMR, etc.)
Ref. Req. ID	For an RAMR, this field contains the Request ID of the RAR/RAMR the RAMR targeted to modify
Status	The status of the request stored in the SNAS database when the RAMR panel is launched
User ID	Account name of user who submitted the request

Button Selections

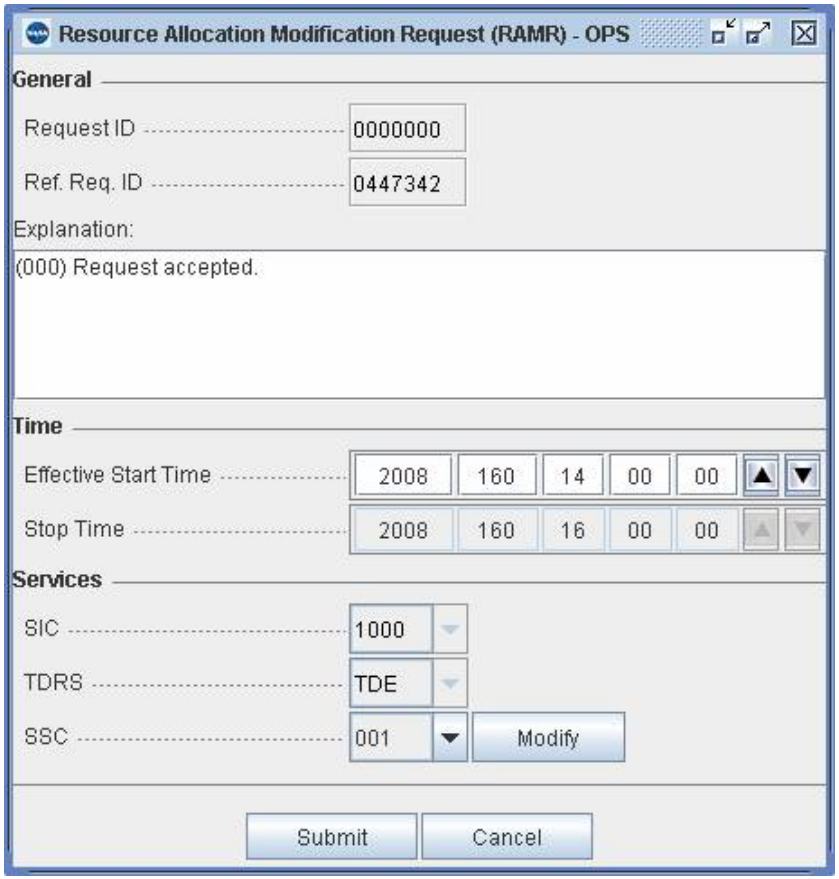
- **Create Request**– Launches an RAMR panel displaying all information in the request selected for modification
- **Cancel**– Cancels RAMR Request and returns to Main Control panel

Create DAS RAMR Panel

This panel is initiated when a user selects a request from the DAS RAMR Selection panel and clicks on the Create Request button. The panel contains information of the request selected for modification.

An RAMR does not modify the duration of the referenced request. It requests that the changes to SSC and/or its parameters occur at the desired Effective Start Time. Once DAS accepts the RAMR, it breaks the referenced request in two parts. The first part starts at the Start Time of the referenced request and ends at the Effective Start Time in the RAMR with the SSC and its parameters in the referenced request. The second part starts at the Effective Start Time in the RAMR and ends at the Stop Time of the referenced request with the SSC and its parameters in the RAMR.

Figure 11.42. Create DAS RAMR Panel



Field Descriptions

Table 11.16. Create DAS RAMR Panel Field Descriptions

Field	Description
Ref. Request ID	The Request ID of the request the RAMR is for
Explanation	The DAS disposition for the selected request

Effective Start Time	The time the changes to parameters are to occur
SIC and TDRS	SIC and TDRS associated with the request selected for modificaion.
SSC	Initially the SSC associated with the request selected for modificaion. Can be changed to a new SSC for the RAMR

Button Selections

- **Modify/SSC**– Launches a DAS SSC Parameters panel containing values of all parameters associated with the SSC currently selected. The user can modify the parameter values for the SSC in the RAMR to be submitted
- **Submit**– Submits DAS RAMR Request to DAS
- **Cancel**– Cancels DAS RAMR Request

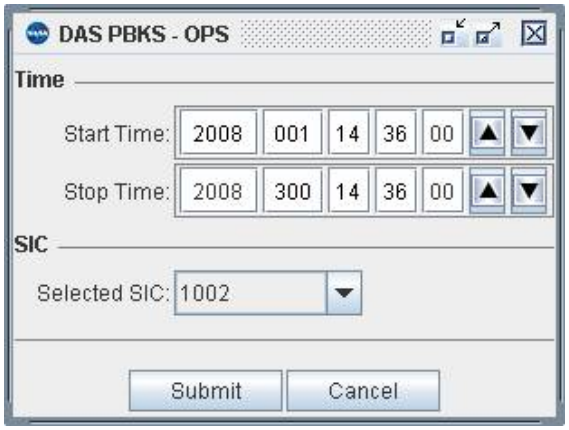
Scheduling/DAS Requests/Playback Search (PBKS)

The Playback Search (PBKS) menu option is used to submit to DAS a playback data search request for data available for playback that is within a specified time range and for a selected SIC. Once DAS returns a list of available playbacks, the user can select an available data set and build and submit a playback data request.

DAS Playback Availability Search

When this menu option is selected, a DAS PBKS panel appears for the user to enter a time range and to select a SIC as playback availability search criteria.

Figure 11.43. DAS PBKS Panel

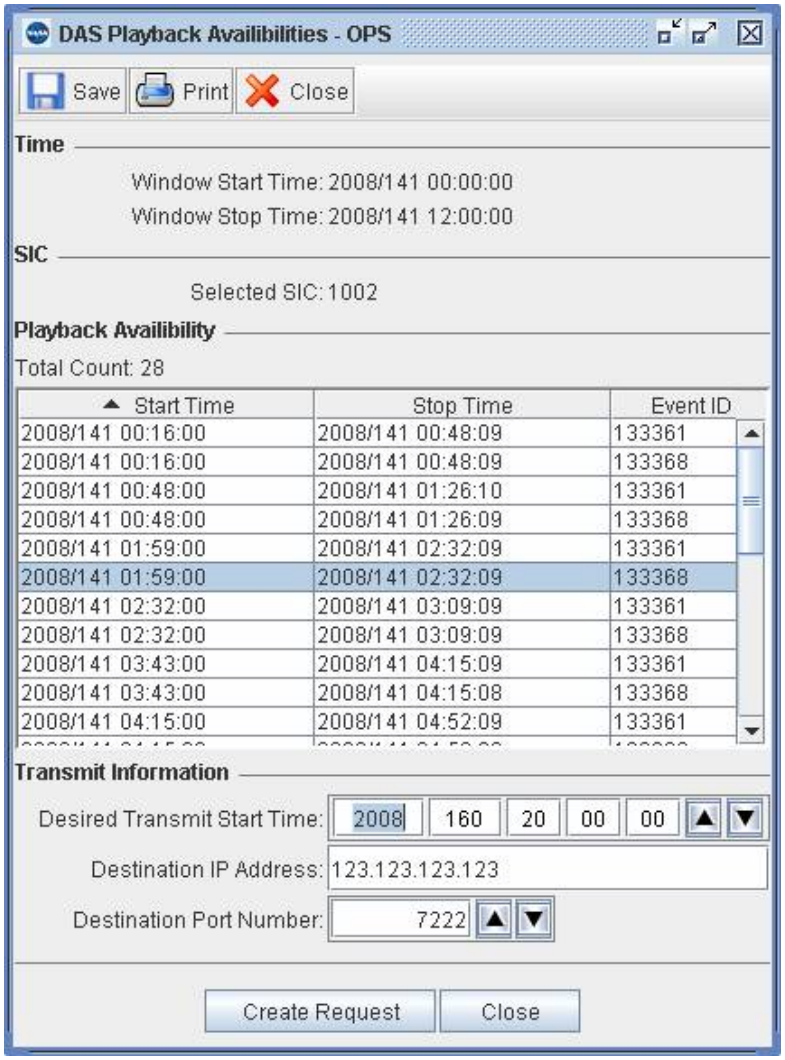


DAS Playback Request

DAS responds to a playback search request with a list of available data segments for playback. The list of data segments available for playback is displayed on a DAS Playback Availabilities panel. The panel provides sorting capabilities on each of the columns. When this panel appears, the Destination IP Address and Destination Port Number fields are filled with default IP address and port number specified in the client.prop file.

To select a data segment to playback and to build and submit to DAS a playback request (PBKR), select a data segment, enter a desired start time when the playback is to occur, provide a desired IP address and a desired port number of the playback destination and click on the Create Request button.

Figure 11.44. DAS Playback Availabilities Panel



Field Descriptions

Table 11.17. DAS Playback Availabilities Panel Field Descriptions

Field	Description
Window Start/Stop Times	Time range used in the playback search request
Selected SIC	SIC used in the playback search request

Playback Availability Start/Stop Times	Time range of the data segment available for playback
Event ID	The ID for the event from which the data segment was acquired
Desired Transmit Start Time	The time the playback is requested to start
Destination IP Address	The IP address of the system to receive playback data
Destination Port Number	The communication port number of the system to receive playback data

Button Selections

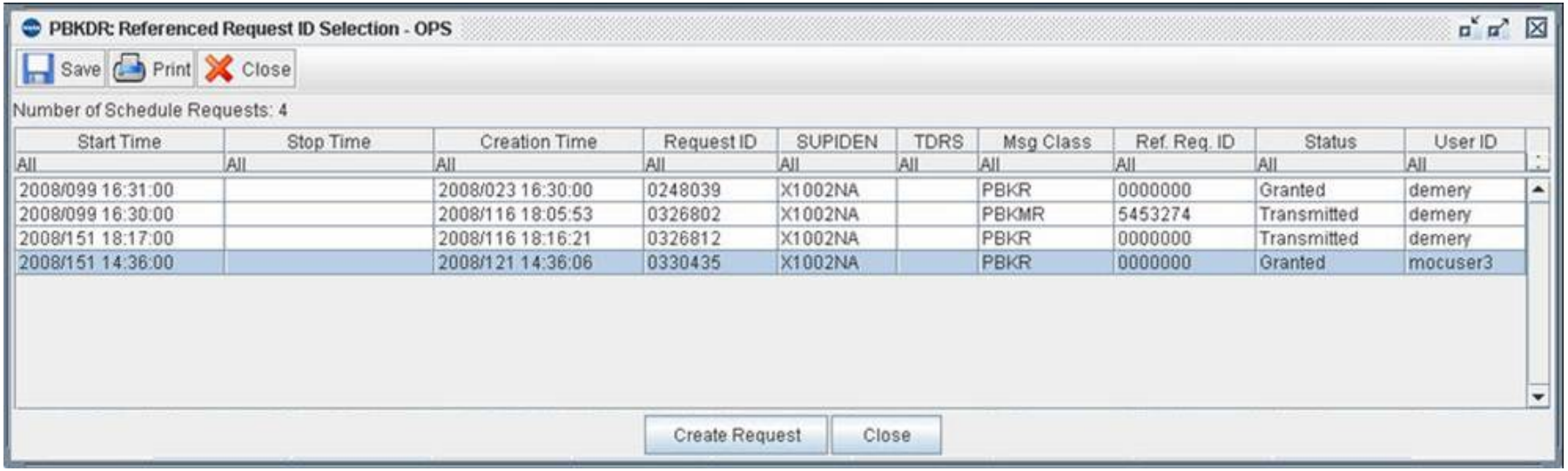
- **Create Request**– Submits the playback request (PBKR) to DAS
- **Close**– Closes the Playback Availabilities Panel

Scheduling/DAS Requests/Playback Delete Request (PBKDR)

The Playback Delete Request (PBKDR) menu option allows the user to submit a request to DAS to remove a previously submitted playback request (PBKR or PBKMR).

When this menu option is selected, a DAS PBKDR Selection panel appears. The panel lists all playback requests that are eligible for deletion. Select the request and click on Create Request to initiate the delete process. A confirmation panel appears. Once confirmed, the delete request is sent to DAS and its disposition will appear on the Alert panel.

Figure 11.45. DAS PBKDR Selection Panel



Field Descriptions

Table 11.18. DAS PBKDR Panel Field Descriptions

Field	Description

Start Time	The start time of the PBKR/PBKMR
Creation Time	The time the PBKR/PBKMR is stored in SNAS database
Request ID	The SNAS-generated 7-digit number for identification of the request
Message Class	PBKR or PBKMR
Ref. Req. ID	If PBKMR, the Request ID of the PBKR the PBKMR modified
Status	The PBKR/PBKMR status stored in SNAS database
User ID	The account name of the user who submitted the PBKR/PBKMR

Button Selections

- **Create Request**– Submits the playback delete request to DAS
- **Close**– Closes the PBKDR Selection Panel

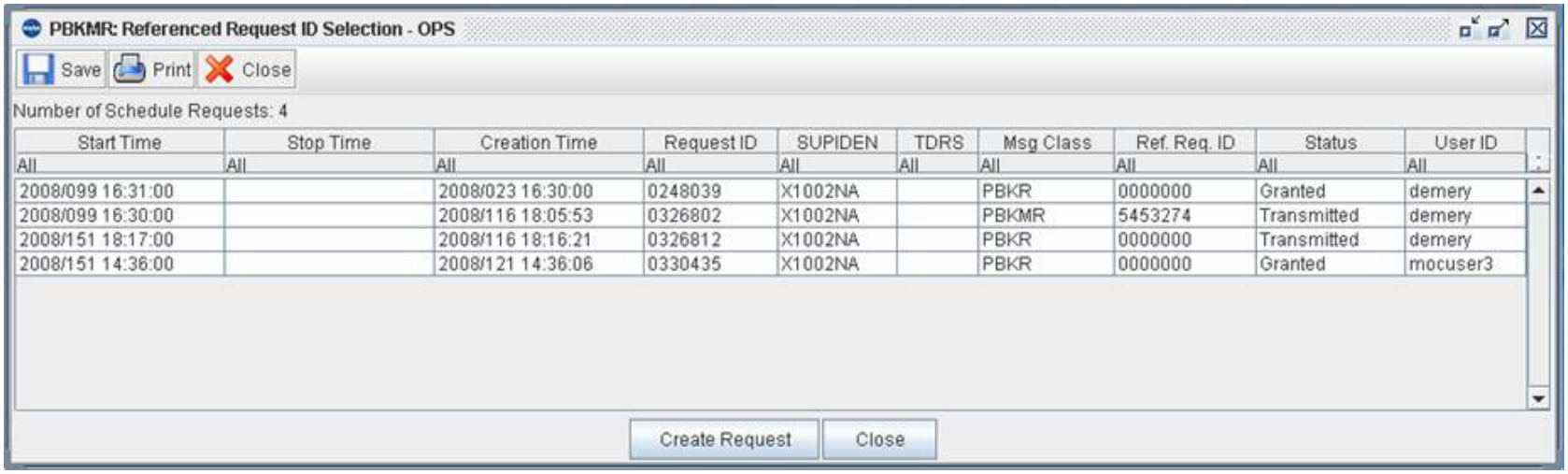
Scheduling/DAS Requests/Playback Modification Request (PBKMR)

The Playback Modification Request (PBKMR) menu option allows the user to submit a request to DAS to modify a previously submitted playback request (PBKR or PBKMR).

Playback Modification Selection

When this menu option is selected, a DAS PBKMR Selection panel appears. The panel is similar to the PBKDR Selection panel and it lists all playback requests that are eligible for modification.

Figure 11.46. DAS PBKMR Selection Panel



Field Descriptions

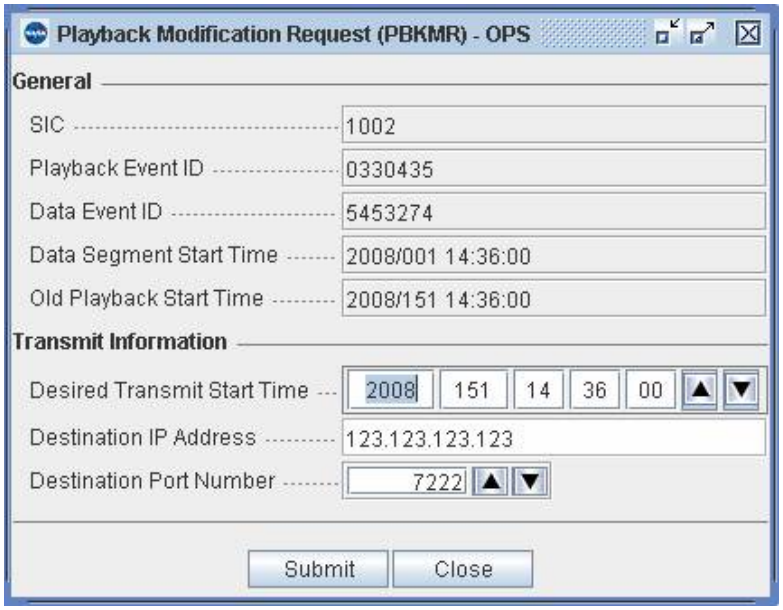
Table 11.19. DAS PBKMR Panel Field Descriptions

Field	Description
Start Time	The start time of the PBKR/PBKMR
Creation Time	The time the PBKR/PBKMR is stored in SNAS database
Request ID	The SNAS-generated 7-digit number for identification of the request
Message Class	PBKR or PBKMR
Ref. Req. ID	If PBKMR, the Request ID of the PBKR the PBKMR modified
Status	The PBKR/PBKMR status stored in SNAS database
User ID	The account name of the user who submitted the PBKR/PBKMR

Playback Modification Request (PBKMR)

Once a playback request is selected and the Create Request button is clicked, a PBKMR panel appears. The PBKMR panel displays all information of the selected playback request. The user can specify a new desired playback start time, a new IP, and/or a new port number for playback of the same data set. Click on the Submit button to submit the PBKMR to DAS for processing.

Figure 11.47. DAS PBKMR Panel



Field Descriptions

Table 11.20. DAS PBKMR Panel Field Descriptions

Field	Description
Playback Event ID	The Referenced Request ID of the playback request to be modified

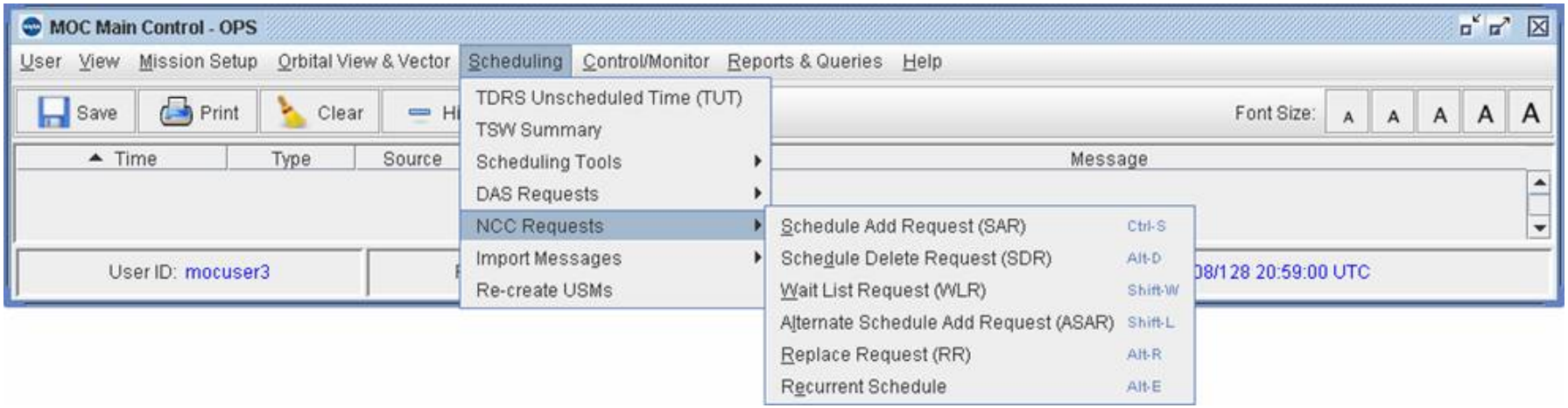
Data Event ID	Request ID of the event where the data segment is acquired
Data Segment Start Time	The start time of the data segment selected in the playback request for playback
Old Playback Start Time	The transmission start time in the referenced playback request
Desired Transmission Start Time	The desired transmission start time of the data segment
Destination IP Address	The IP address of the system to receive the data segment playback
Destination Port Number	The port number of the system to receive the data segment playback

Scheduling/NCC Requests

The options available under Scheduling/NCC Requests menu on the MOC Client Main Control panel provide full NCCDS schedule request capabilities including creations and submissions of schedule add (SAR), delete (SDR), replace (RR), waitlist (WLR), and alternate schedule add (ASAR) requests as well as the generation of bulk SARs from pre-defined patterns and prototypes using Recurrent Scheduling (RS).

For detailed information on all NCCDS schedule requests, refer to the 452-ICD-SN/CSM.

Figure 11.48. Scheduling/NCC Requests Menu



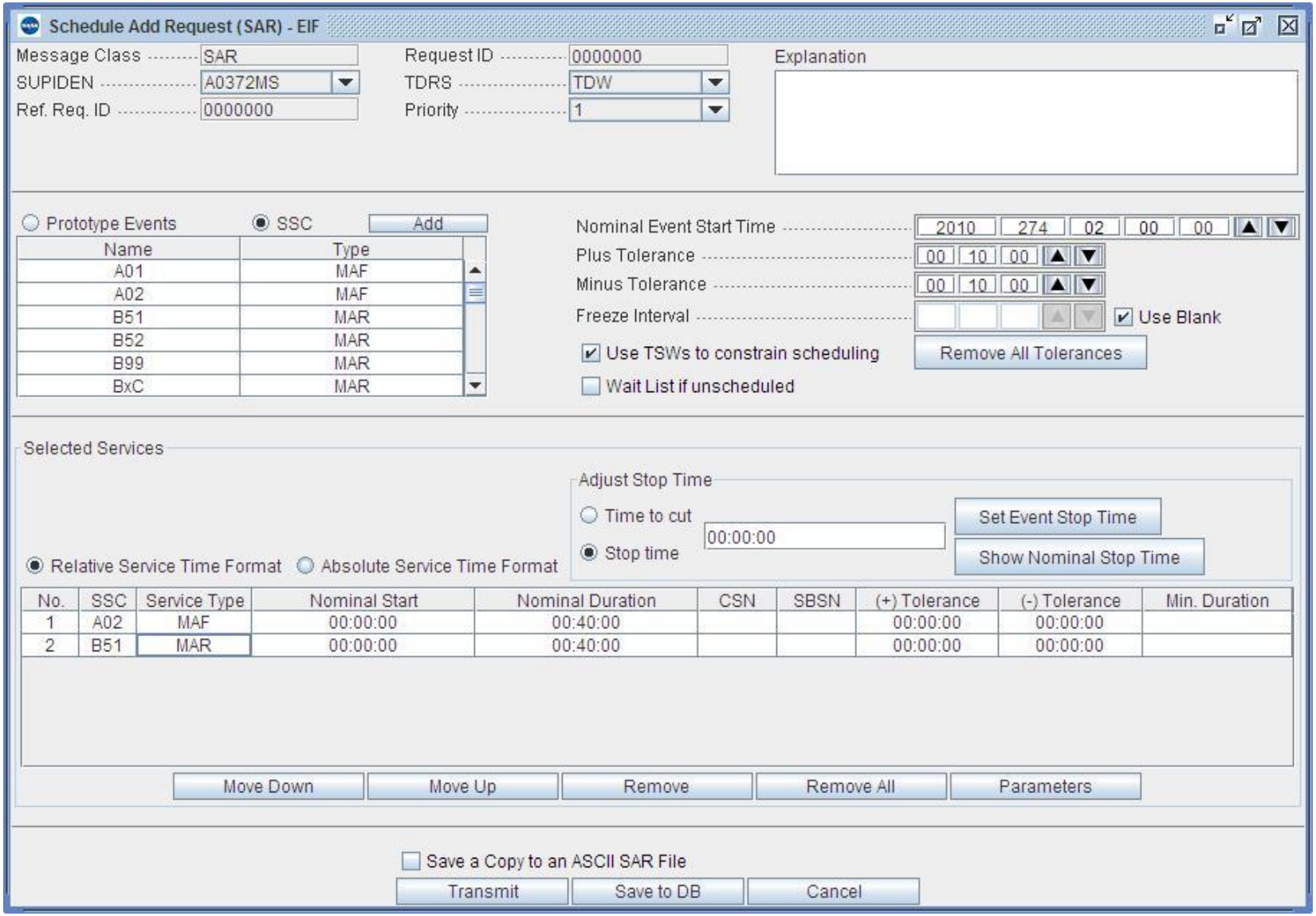
Scheduling/NCC Requests/Schedule Add Request (SAR)

The Schedule Add Request (SAR) menu option allows the user to build and submit a Schedule Add Request to the NCCDS. When this menu option is selected, a SAR panel appears for the user to enter information required to build a SAR. Once built, the user has the choice to either submit the SAR to NCCDS for processing or to store it in the SNAS database without transmitting it. The panel also provides the user a means to assemble the SAR message and save it to a disk file on the user's client workstation.

The user should first select a SUPIDEN from the pulldown list. Only the SUPIDENs, for the SICs the user logs in with, are listed. Once a SUPIDEN is chosen, applicable fields on the SAR panel are prepopulated with Default Scheduling Parameters information stored in the SNAS database for the SIC. If the user selects a different SUPIDEN from

the list, all fields defined by the Default Scheduling Parameters will be reset to their default values and the Selected Services table will be emptied.

Figure 11.49. Schedule Add Request Panel



Field Descriptions

Table 11.21. Schedule Add Request Panel Field Descriptions

Field	Description

Message Class	NCCDS classification of the message -- SAR
SUPIDEN	The 7-character Support Identifier used to identify the SIC and the task being supported. It consists of three parts: class, SIC, and function.
Reference Request ID	The 7-digit SNAS-created ID of the request this request references. "0000000" for SAR since it does not reference any other request
Request ID	The 7-digit SNAS-created ID of this request. "0000000" since it has not been assigned
TDRS	A TDRS or TDRS group name to be associated with this SAR
Priority	The requested priority of this SAR. Pre-populated with the priority specified as part of the Default Scheduling Parameters for the selected SIC
Explanation	The disposition for this SAR. Blank since the SAR is yet to be transmitted to NCCDS. Will contain disposition information (i.e. SRM) received from NCCDS
Prototype Events/SSC Toggle Radio Button	For specification of how the services for the SAR are to be selected
Prototype Events/SSC List	After a SUPIDEN is selected, this table displays either SNAS-defined and NCCDS-defined prototype events (PEs) for the SIC embedded in the SUPIDEN when the Prototype Events radio button is selected or available SSCs for the SIC when the SSC radio button is selected In PE mode, select a PE and click on the Add button will erase all services already shown in the Selected Service table and display all SSCs defined for the selected PE in the Selected Services table on the SAR panel. The services and their parameters from a PE can not be modified for the SAR. In SSC mode, a new SSC can be added to the Selected Services list by selecting the SSC and clicking on the Add button. All services selected in this mode can be modified for the SAR.
Nominal Event Start Time	The desired start time of the requested event
Plus/Minus Tolerance	The tolerances (in HHMMSS format) allow the user to specify that an event's actual start time may be earlier or later than the requested Nominal Event Start Time. Pre-populated with the Event Plus and Minus Tolerances specified as part of the Default Scheduling Parameters for the selected SIC. Refer to Appendix D of the 452-ICD-SN/CSM for more information
Freeze Interval/Use Blank	Amount of time (in DDHHMM format) before event start time that the NCCDS will freeze requested start times and durations. This applies only to SARs that specify flexible start times and durations. Pre-populated with the Freeze Interval specified as part of the Default Scheduling Parameters for the selected SIC. Check the Use Blank box to blank out the Freeze Interval field in the SAR if the Freeze Interval stored in NCCDS database is to be used. Refer to Table 7-1 of the 452-ICD-SN/CSM for more information
Use TSW	This check box specifies if NCCDS is to use stored TSWs when processing this SAR
Wait List if Unscheduled	This check box specifies that NCCDS should place this request on Wait List if initial scheduling is unsuccessful. Refer to Table 7-1 of the 452-ICD-SN/CSM for more information
Adjust Stop Time	If Time to cut is clicked, then the hours:minutes:seconds to cut off the request stop time should be entered. If Stop Time is clicked, then set the event stop time in either relative time format or absolute time format should be entered independent of the selection of relative or absolute service time format. Any SSCs with stop times beyond the request stop time will be truncated. This option does not apply to any request containing a prototype event.
Relative/Absolute Time Format Toggle	The two radio buttons allow the selection of either the relative or the absolute time display format for the services selected for the SAR. If relative, the Nominal Start, relative to the Nominal Event Start Time, and Nominal Duration for all selected services will be shown in a HH:MM:SS format. If absolute, the column label Nominal Duration in Relative mode will change to Nominal Stop and all selected services will have their Nominal Start and Stop times shown in YYYY/DOY HH:MM:SS format
Service Number	The sequence number of the service in the SAR
SSC	The Service Specifications Code for the service

Service Type	Type of service associated with the SSC
Nominal Start	The nominal start time of the service (relative to the Event Start Time in Relative display mode or absolute time in Absolute display mode)
Nominal Stop (in Absolute display mode)	The requsted absolute stop time for the service. After the first SSC has been selected and its Nominal Stop time updated, the value becomes the default Nominal Stop time for all subsequent SSCs added to the selected list.
Nominal Duration (in Relative display mode)	The requested nominal duration of the service. After the first SSC has been selected and its Nominal Duration updated, the value becomes the default Nominal Duration for all subsequent SSCs added to the selected list.
CSN and SBSN	The sequence number of the service this service is coupled with or bound to. These fields are optional. For more information on coupled and bound services, refer to Appendix D of the 452-ICD-SN/CSM
Plus/Minus Tolerances for Services	The tolerances (in HH:MM:SS format) allows the user to specify that a service's actual start time may be earlier or later than its nominal start time. Refer to Appendix D of the 452-ICD-SN/CSM for more information on scheduling flexibility for services
Minimum Duration	The minimum duration of the service in HH:MM:SS format. The minimum duration must not be greater than the Nominal Duration and must not be less than one minute
Save to an ASCII File	The check box allows the user to specify if a copy of the SAR is to be saved as an ASCII file on the user's client workstation. When either the Transmit button or the Save to DB button is clicked with this check box checked, a file chooser panel appears for the user to specify a location and a file name for the SAR to be saved. If the specified filename already exists, the user can choose to overwrite the existing file or to append the SAR to the end of the existing file.

Button Selection

- **Add**- Adds selected SSCs for a designated PE or selected SSC to Selected Services list
- **Remove All Tolerances**- Zeroes out the request plus and minus tolerances and the SSC plus and minus tolerances
- **Set Event Stop Time (default) / Truncate Event Stop Time**- To adjust the event stop time either a new stop time in year, day, time of day format can be entered with Stop Time checked or a positive delta time of day can be entered to shorten the event having clicked on Time to Cut. In either case individual events are adjusted only if their individual stop time exceeds the adjusted stop time for the event.
- **Show Nominal Stop Time**- Displays in the "Adjusted Stop Time" field the nominal stop time of the request based on all changes made to the request
- **Move Down**- Available for SSCs only. Moves selected item down Selected Services list
- **Move Up**- Available for SSCs only. Moves selected item up Selected Services list
- **Remove**- Available for SSCs only. Removes selected item from the Selected Services list
- **Remove All**- Available for SSCs only. Removes all items from the Selected Services list
- **Parameters**- Available for SSCs only. Opens the appropriate SSC Parameters panel for selected service
- **Transmit**- Submits SAR to NCCDS
- **Save to DB**- Stores the SAR to the SNAS database without submitting it to NCCDS

- **Cancel**- Closes SAR panel without any further actions

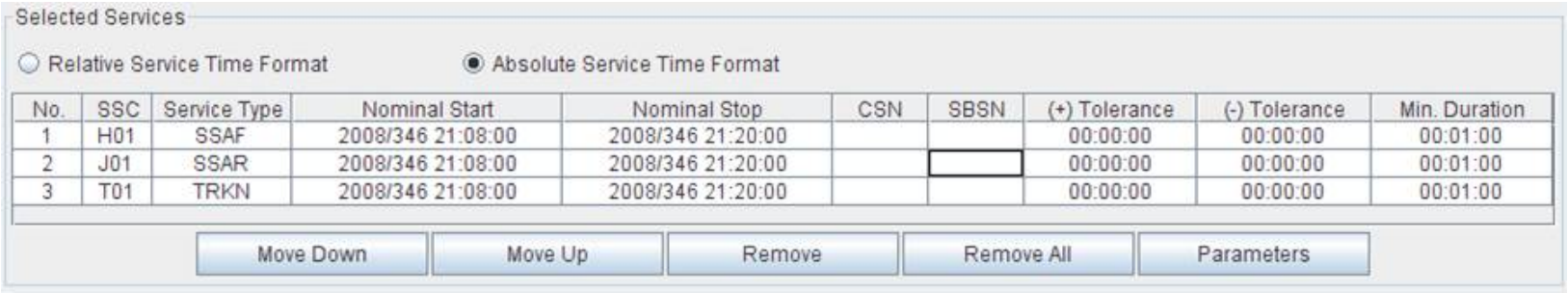
Notes on SAR Panel Operations

After a SUPIDEN is selected, the embedded SIC is extracted and SNAS presents the user with a list of SSCs or PEs, according to the PE/SSC toggle buttons, that are available for the SAR. Selecting a different SUPIDEN even for the same SIC will result in clearing out all services already selected for the SAR.

Switching from SSC to PE mode also clears the Selected Services list. In the PE mode, only one NCCDS-defined or SNAS-defined PE can be selected. A PE for a SIC consists of one or more SSCs in a fixed order. An NCCDS-defined PE is stored in NCCDS database and a copy of it is also available in the SNAS database. When building a SAR with an NCCDS-defined PE, the services comprising the PE are listed in the Selected Services table, but only the PE ID, not the SSCs, is referenced in the SAR submitted to NCCDS. A SNAS-defined PE, on the other hand, is not in the NCCDS database. When building a SAR with a SNAS-defined PE, the user does not need to select individual SSCs that make up the PE. The SAR will reference all SSCs, not the PE, as NCCDS has no records of SNAS-defined PEs in its database.

In SSC mode, each Add button click will add the selected SSC to the bottom of the Selected Services list. Use Move Up, Move Down, Remove, Remove All buttons to manipulate the Selected Services list. Nominal Start, Nominal Duration/ Stop, +Tolerance, -Tolerance and Minimum Duration for each service can all be modified. When the Absolute Time display format (see the figure below) is selected, changing the Event Start Time will also update the displayed Nominal Start and Nominal Stop times accordingly so (1) the difference between the Event Start Time and a service's Nominal Start time will remain the same, and (2) the Nominal Duration of a service also remains the same.

Figure 11.50. Absolute Service Time Format



The Minimum Duration of a service must be no greater than the Nominal Duration of the same service and must be no less than one minute. If this rule is violated for any of the services and the Transmit or Save to DB button is clicked, an error message appears and the user needs to correct the Nominal Duration and/or the Minimum Duration before the SAR can be transmitted to SNAS server for further processing.

NCCDS requires that services in a SAR be listed in certain order. Refer to Section 7.2.1.5 of the 452-ICD-SN/CSM on details of service ordering. SNAS allows the services to be placed in any order when submitting the SAR to NCCDS, but NCCDS will reject a request if the ordering specified in the ICD is not followed.

Once the user has finished entering all the information for a SAR and click the Transmit button, SNAS will store the SAR information in the SNAS database and send the request to NCCDS for processing. In the case where the user wants to save the SAR for future use but does not want to submit to NCCDS, the Save to DB should be used instead.

Disposition of Submitted SAR

When the user clicks the Transmit button the SAR informaton is forwarded to the SNAS server. The server stores the SAR information in the SNAS database. The server then determines if the schedule connection with NCCDS for the selected SIC is established and active. If so, the SAR information is packaged into a SAR message that conforms to the format dictated by the 452-ICD-SN/CSM and the message is sent to NCCDS. The SAR status in the SNAS will be set to Transmitted. If, however, the schedule connection is not fully operational, the packaging and transmission of the SAR will not be performed until the connection is restored.

NCCDS responds to a SAR request with one or more Schedule Result Messages (SRMs) notifying the requester dispositions for the request. Details on SRM and the result and explanation codes contained in SRMs are provided in Tables 7-3 and 7-4 of the 452-ICD-SN/CSM. SNAS will update the SAR status stored in the SNAS database according to the status specified in received SRMs. SRMs are also displayed in the Alert panel. If the EPS is enabled (refer to EPS Setup Section and the Client Properties file), Native SRMs can also be saved as disk files on the user's workstation.

If a SAR is accepted by NCCDS when it moves into the Active Period, NCCDS sends out another SRM for confirmation and sends a User Schedule Message (USM) containing detailed information on the confirmed event/services/parameters. Refer to Section 7.3 of the 452-ICD-SN/CSM for more information on USMs. When SNAS receives the SRM and USM, it saves a copy of the native data, updates the SAR status to Granted, decomposes the USM and stores the event/service/parameter information in SNAS database. USM notifications are displayed on the Alert panel. If the EPS processing is enabled, Native USMs can also be saved as disk files on the user's workstation.

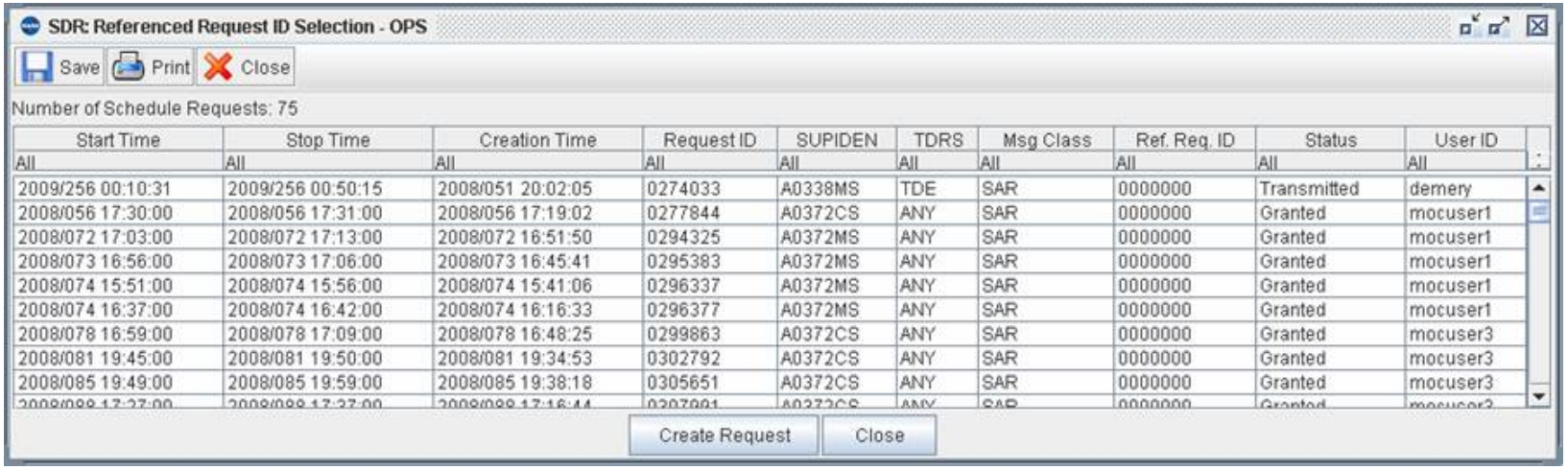
Scheduling/NCC Requests/Schedule Delete Request (SDR)

The Schedule Delete Request (SDR) menu option allows the user to select a request eligible for deletion and submit a request to NCCDS to delete the request from its database.

When this menu option is selected, an SDR Selection panel appears. The panel displays a list of NCCDS schedule requests that are eligible for deletion. The panel has the same layout as the Schedule Request Summary panel and offers the same sorting and filtering capabilities.

To submit a SDR, select a request from the list and click on the Create Request button. A confirmation dialog popup appears for the user to confirm the transmission of the delete request to NCCDS. If the SDR is accepted by NCCDS, it sends two SRMs. One indicates that the SDR itself has been accepted and given a status of NCCQueued and the other indicates that the request the SDR is referring to has been deleted .

Figure 11.51. Schedule Delete Request (SDR) Selection Panel



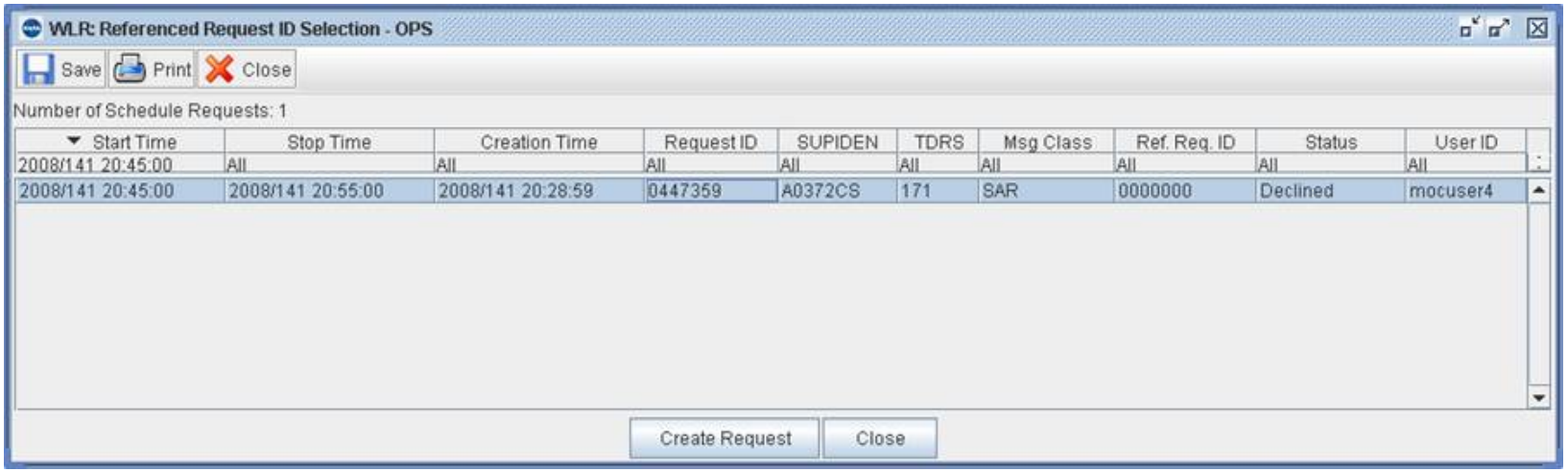
Start Time	Stop Time	Creation Time	Request ID	SUPIDEN	TDRS	Msg Class	Ref. Req. ID	Status	User ID
All	All	All	All	All	All	All	All	All	All
2009/256 00:10:31	2009/256 00:50:15	2008/051 20:02:05	0274033	A0338MS	TDE	SAR	0000000	Transmitted	demery
2008/056 17:30:00	2008/056 17:31:00	2008/056 17:19:02	0277844	A0372CS	ANY	SAR	0000000	Granted	mocuser1
2008/072 17:03:00	2008/072 17:13:00	2008/072 16:51:50	0294325	A0372MS	ANY	SAR	0000000	Granted	mocuser1
2008/073 16:56:00	2008/073 17:06:00	2008/073 16:45:41	0295383	A0372MS	ANY	SAR	0000000	Granted	mocuser1
2008/074 15:51:00	2008/074 15:56:00	2008/074 15:41:06	0296337	A0372MS	ANY	SAR	0000000	Granted	mocuser1
2008/074 16:37:00	2008/074 16:42:00	2008/074 16:16:33	0296377	A0372MS	ANY	SAR	0000000	Granted	mocuser1
2008/078 16:59:00	2008/078 17:09:00	2008/078 16:48:25	0299863	A0372CS	ANY	SAR	0000000	Granted	mocuser3
2008/081 19:45:00	2008/081 19:50:00	2008/081 19:34:53	0302792	A0372CS	ANY	SAR	0000000	Granted	mocuser3
2008/085 19:49:00	2008/085 19:59:00	2008/085 19:38:18	0305651	A0372CS	ANY	SAR	0000000	Granted	mocuser3

Scheduling/NCC Requests/Wait List Request (WLR)

Wait List Request (WLR) Selection Panel

For a schedule request that has been declined by NCCDS, a WLR can be submitted to NCCDS to place the request to a wait list. When the Wait List Request (WLR) menu option is selected, a WLR Selection panel displaying all eligible declined requests appears. The panel has the same layout as the Schedule Request Summary panel and offers the same sorting and filtering capabilities.

Figure 11.52. Wait List Request (WLR) Selection Panel



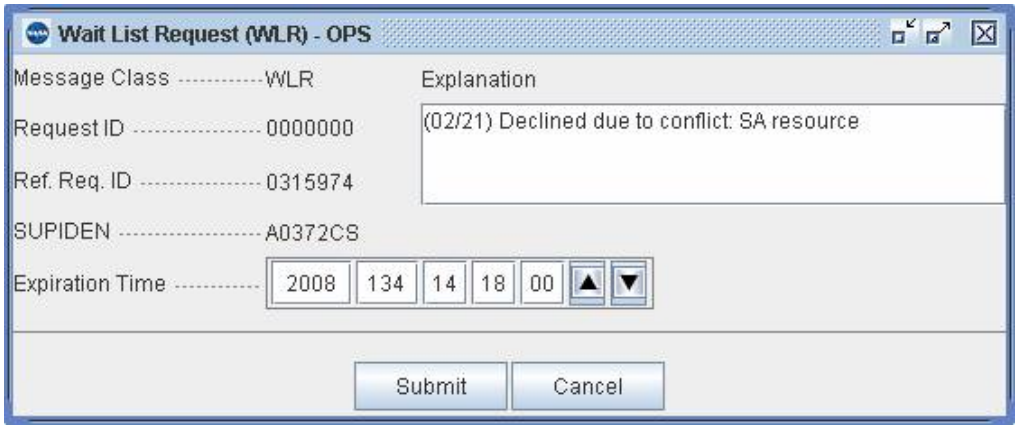
Start Time	Stop Time	Creation Time	Request ID	SUPIDEN	TDRS	Msg Class	Ref. Req. ID	Status	User ID
2008/141 20:45:00	All	All	All	All	All	All	All	All	All
2008/141 20:45:00	2008/141 20:55:00	2008/141 20:28:59	0447359	A0372CS	171	SAR	0000000	Declined	mocuser4

Wait List Request (WLR) Panel

After selecting a declined request and clicking on the Create Request button on the WLR Selection panel, a WLR panel appears for the user to specify an expiration time when the request is to be removed from the wait list. The WLR should

be submitted with a future time specified as the Expiration Time. NCCDS sends two SRMs if the WLR is accepted. One indicates that the WLR has been accepted and the other indicates that the request referenced in the WLR has been waitlisted.

Figure 11.53. Wait List Request Panel

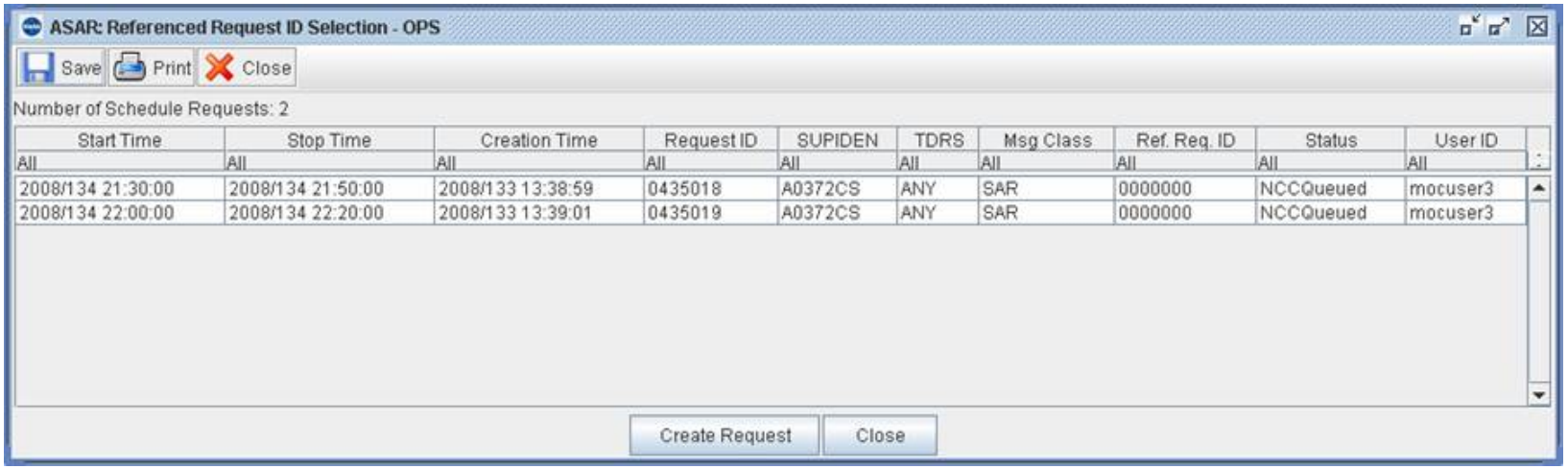


Scheduling/NCC Requests/Alternate Schedule Add Request (ASAR)

Alternate Schedule Add Request (ASAR) Selection Panel

The Alternate Schedule Add Request (ASAR) menu option is used for submitting an alternate to a SAR with an NCCQueued status. When this menu option is selected, an ASAR Selection panel appears and a list of requests with NCCQueued status is displayed. The panel has the same layout as the Schedule Request Summary panel and offers the same sorting and filtering capabilities.

Figure 11.54. Alternate Schedule Add Request (ASAR) Selection Panel



After a request is selected and the Create Request button is clicked on, an ASAR panel appears. The ASAR panel is essentially the same as the SAR panel with items not applicable to ASAR disabled. Refer to the SAR section for more information on the panel.

If an ASAR refers another ASAR in its Referenced Request ID, an ASAR chain is formed. Refer to Section 7.2.7 of the 452-ICD-SN/CSM for more information on ASARs.

Scheduling/NCC Requests/Replace Request (RR)

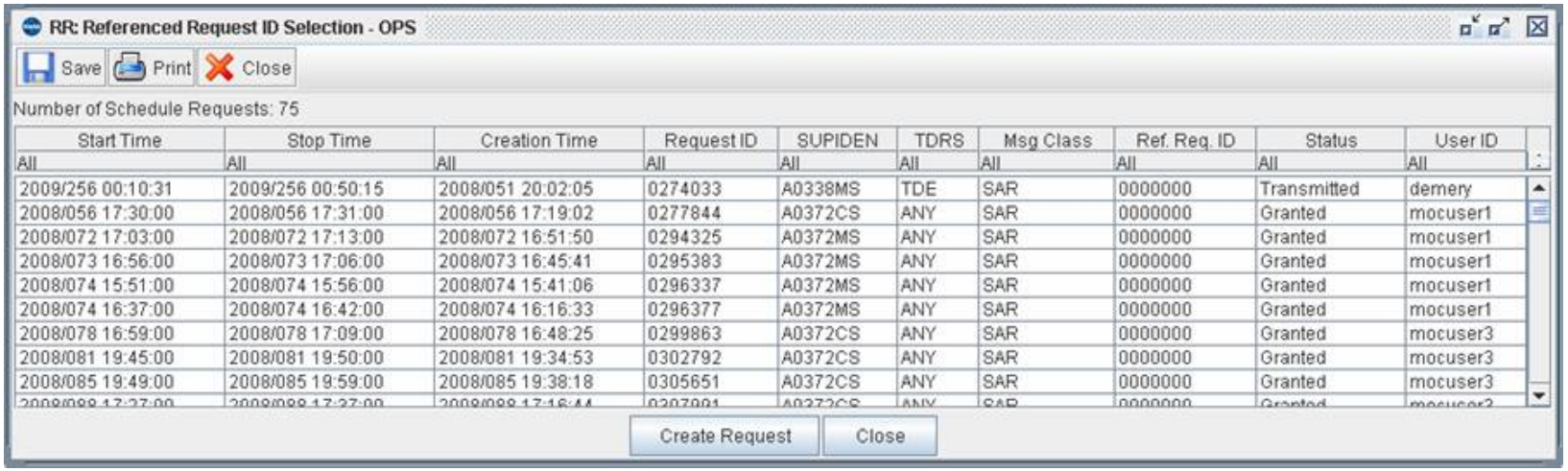
Replace Request (RR) Selection Panel

The Replace Request (RR) menu option provides a means to build and submit a replace request to NCCDS to replace an existing request stored in NCCDS database. When this menu option is selected, an RR Selection panel appears. The panel displays all requests that are eligible for a replace request. The panel has the same layout as the Schedule Request Summary panel and offers the same sorting and filtering capabilities.

When an eligible request is selected for replacement and the Create Request button is clicked, an RR panel containing all event/service/parameter information for the selected request appears. An RR panel is essentially a SAR panel with minor differences, including a filled-in Referenced Request ID and its Explanation box containing the disposition information for the referenced request. Refer to SAR section for more information on the panel.

If the RR is rejected by NCCDS, the RR will have a status of Rejected and the status of the referenced request does not change. If the RR is accepted, the RR will have a Granted status and the status of the referenced request will show Deleted.

Figure 11.55. Replace Request (RR) Selection Panel



Start Time	Stop Time	Creation Time	Request ID	SUPIDEN	TDRS	Msg Class	Ref. Req. ID	Status	User ID
All	All	All	All	All	All	All	All	All	All
2009/256 00:10:31	2009/256 00:50:15	2008/051 20:02:05	0274033	A0338MS	TDE	SAR	0000000	Transmitted	demery
2008/056 17:30:00	2008/056 17:31:00	2008/056 17:19:02	0277844	A0372CS	ANY	SAR	0000000	Granted	mocuser1
2008/072 17:03:00	2008/072 17:13:00	2008/072 16:51:50	0294325	A0372MS	ANY	SAR	0000000	Granted	mocuser1
2008/073 16:56:00	2008/073 17:06:00	2008/073 16:45:41	0295383	A0372MS	ANY	SAR	0000000	Granted	mocuser1
2008/074 15:51:00	2008/074 15:56:00	2008/074 15:41:06	0296337	A0372MS	ANY	SAR	0000000	Granted	mocuser1
2008/074 16:37:00	2008/074 16:42:00	2008/074 16:16:33	0296377	A0372MS	ANY	SAR	0000000	Granted	mocuser1
2008/078 16:59:00	2008/078 17:09:00	2008/078 16:48:25	0299863	A0372CS	ANY	SAR	0000000	Granted	mocuser3
2008/081 19:45:00	2008/081 19:50:00	2008/081 19:34:53	0302792	A0372CS	ANY	SAR	0000000	Granted	mocuser3
2008/085 19:49:00	2008/085 19:59:00	2008/085 19:38:18	0305651	A0372CS	ANY	SAR	0000000	Granted	mocuser3

Scheduling/NCC Requests/Recurrent Scheduling

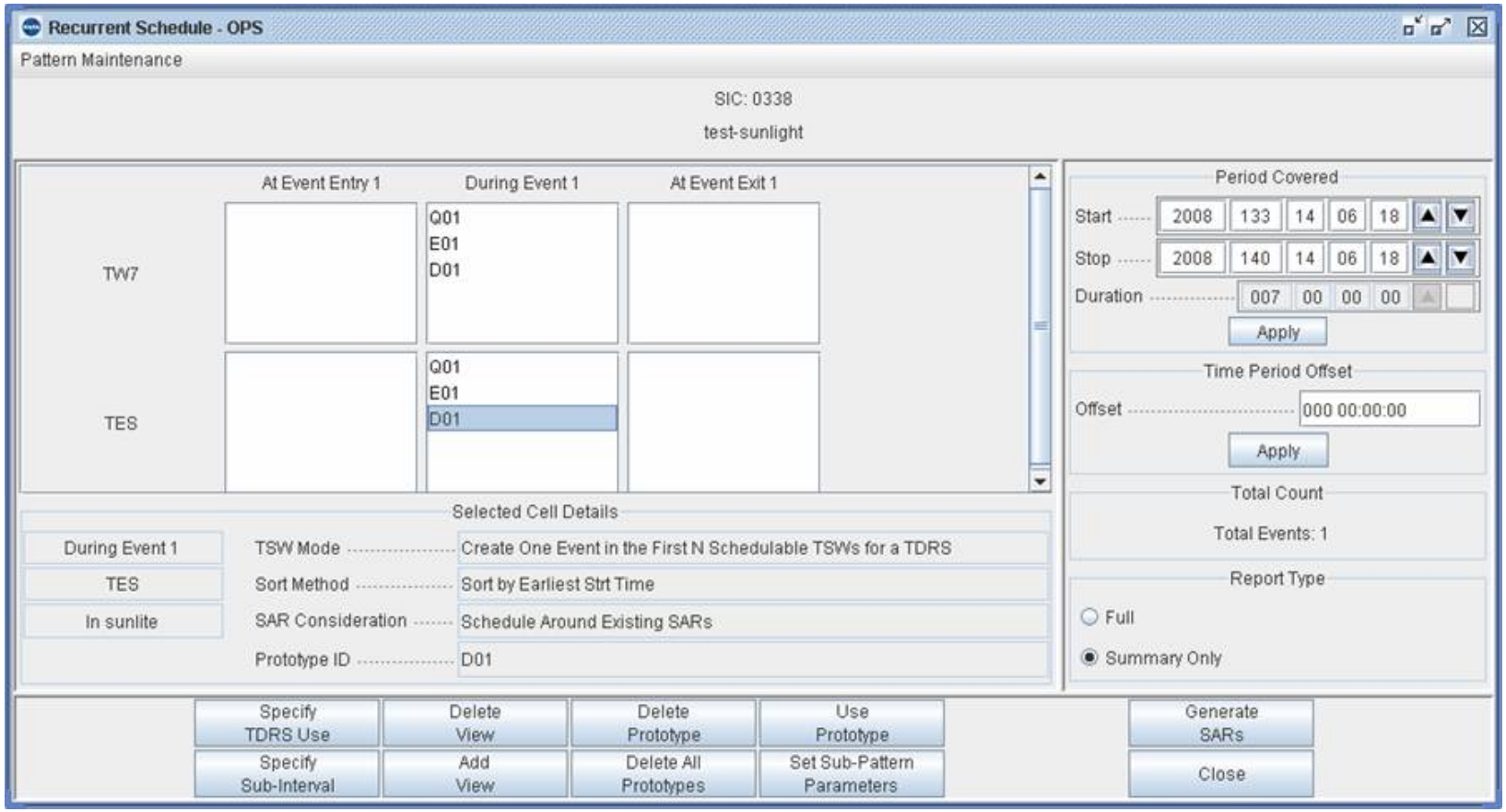
Recurrent Scheduling (RS) is a process that allows a user to automatically create a series of SARs used for regularly requested TDRS resources. RS generates SARs based on TSWs, using a user-defined pattern specifying specific RS prototype(s). RS prototypes allow specification of all flexible scheduling features, including service-level tolerances, service coupling and bounding, service minimum duration, and specification of TSW Sets. These RS Prototypes must

be created before using the RS generation process. Refer to RS Edit Super Prototype section under Mission Setup for more information on how to create and maintain RS prototypes.

Main Recurrent Scheduling Panel

The Recurrent Scheduling panel is initiated when the Recurrent Scheduling menu option is selected and a SIC has been selected. The grid appearing in the upper left quadrant is referred to as pattern with each cell in the pattern referred to as a subpattern. For the first time the RS menu option is selected for a SIC, a generic Pattern setup for all SICs is used to initiate the main RS panel. Once the user has defined necessary parameters for a new pattern, the pattern can be saved (and identify it as default, if desired) and later on restored for SAR generation or for updates. Each time the RS menu option is selected for the SIC, SNAS looks for the default Pattern to load. In the absence of the default pattern, the SNAS-wide generic pattern is loaded. The SIC and the pattern name appears at the top of the RS panel.

Figure 11.56. Main Recurrent Scheduling Panel



Field Descriptions

Table 11.22. Main Recurrent Schedule Panel Field Descriptions

Field	Description
Pattern Maintenance Menu	This pulldown menu displays the options for maintaining Recurrent Scheduling patterns. The options available include Load (from an existing pattern stored in database), Save (to the database to replace the current pattern), Save As (a new pattern), Rename (the current pattern to a new name), Delete (the current pattern from the database), Default/Generic (bring up the default/generic pattern), and Set Default (set the current pattern as default pattern).
Period Covered: Start, Stop, Duration	The start, stop, and duration times of the desired scheduling period. The default duration is set to 7 days.
Time Period Offset	The offset to be added to the start time of the period covered. Recurrent scheduling will begin at the start time of the period covered plus the offset. This offset time is not used in conjunction with the stop time of the period covered. The day portion of this field should always be 0.
Pattern Grid	This graphic shows the selected pattern for performing an RS run, including the TDRSs used, interval type (orbit, time, TDRS view, and orbital event), and RS Prototype(s) used.
Pattern Row	TDRS or TDRS group selected by user from Specify TDRS Use panel
Pattern Column	Views according to sub-interval selected
The three unlabeled boxes to the left of TSW Mode	The first two boxes show the "coordinates" of the current cell/subpattern. The third box shows the sub-interval subject based on the sub-interval type currently in effect.
TSW Mode	How usable portions of TSWs are to be used within the current sub-pattern. Create one event in each and every TSW for a TDRS, create one event in any TSW for a TDRS, or create one event in the first N schedulable TSWs for a TDRS. Refer to the Set RS Sub-Pattern Parameters section for more information.
Sort Method	The TSW sort method applied to the selected subpattern. Sort by earliest start time or sort by longest duration. Refer to the Set RS Sub-Pattern Parameters section for more information.
SAR Consideration	Schedule through existing SARs or schedule around existing SARs for the selected sub-pattern. Refer to the Set RS Sub-Pattern Parameters section for more information.
Prototype ID	Prototype ID currently selected.
Total Event	Number of events in the current pattern. If the current sub-interval is orbital events, one event will consist of three views -- entry, during and exit
Report Type	Radio Buttons. Indicates the type of report to create during the RS run (which is displayed at the conclusion of RS): Full or Summary Only.

Button Selection

- **Specify TDRS Use**- Invokes the Specify TDRS Use panel, which allows the user to specify which TDRSs to use during RS.
- **Specify Sub Interval**- Invokes the Specify Sub-Interval panel, which allows the user to specify the type of interval to schedule to during RS mission orbit, TDRS view, time interval, or orbital event.
- **Delete View**- Removes an interval from the pattern (if the interval is by orbital event, all three elements of the matrix are deleted: before, during, and after orbital event).
- **Add View**- Adds an interval to the pattern.
- **Delete Prototype**- Removes the selected prototype from the subpattern element.
- **Delete All Prototypes**- Removes all prototypes from the subpattern element

- **Use Prototype**- Invokes the Use RS Prototype Event panel, which allows the user to select a previously created RS Prototype to use within a selected subinterval element.

- **Set Sub-Pattern Parameters**- Invokes the Set RS Sub-Pattern Parameters panel, which allows the user to specify various strategies used during the RS process.

- **Generate SARs**- Starts RS after input is complete. Does not close the RS panel.

- **Close**- Closes the RS panel.

Recurrent Scheduling Operations Notes

- A useful feature of RS is its ability to consider, and schedule around, previously created SARs as well as user-defined/ TDRS constraints that are within the time period scheduled. RS can also be directed to create SARs without regard to previously created SARs. Creating multiple overlapping SARs can be useful when the user wants to maximize flexibility (the NCCDS will ensure that minimum SAR gaps are maintained).

- The SAR Granularity parameters (set in the Default Scheduling Parameters panel) are taken into consideration when generating SARs in the RS process. These parameters force RS to create SARs that start at the SAR Start Granularity and stop at the SAR Stop Granularity (between 1 second and 1 minute). Thus, the user may force SARs to be created at the finest granularity NCCDS supports (1 second) or permit the user to specify SARs starting and ending on the minute mark. When generating SARs to TSWs, RS will round the SAR start time “in” to the nearest TSW start time that corresponds to the SAR Start Granularity, and “in” to the nearest TSW stop time that corresponds to the SAR Stop Granularity, thus ensuring that the SAR is always within the TSW.

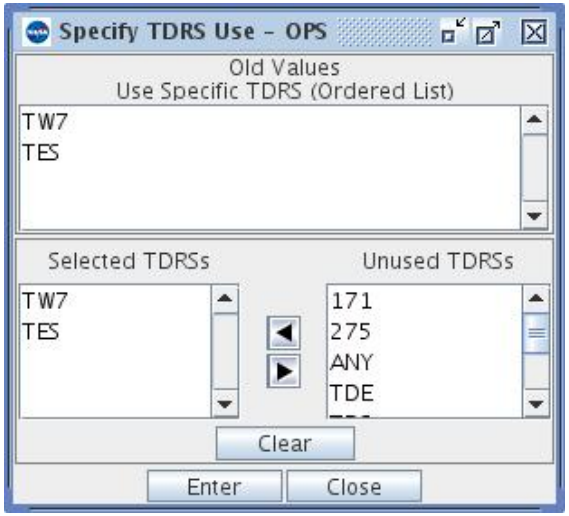
- Recurrent Scheduling prototypes specify what TDRS services are to be scheduled, and their relative time relations within a single schedule event. TSWs specify time periods when a user spacecraft is able to communicate with a specific TDRS, using a specific service. Recurrent Scheduling patterns tie everything together by specifying which prototypes, TDRS(s), and therefore TSWs, are to be used to generate SARs during the time period being scheduled.

- All SARs generated from Recurrent Scheduling on SNAS are stored as SAR messages in a bulk file located on the client workstation. The file can be edited manually using a text editor. The RS created file or the edited version can be imported back into SNAS as a bulk schedule request file. Refer to Scheduling/Import Messages menu option for details on how to import a bulk schedule file.

Specify TDRS Use Panel

The user uses this panel to select specific TDRS for RS to schedule SARs on them. The selected TDRSs make up the rows on the Main Recurrent Scheduling panel. One set of services can be requested for one TDRS and another set (or no services) can be requested on other TDRSs. All TDRSs known to SNAS are always available to be the primary TDRS. Using the Set Sub-Pattern Parameters panel, the user can specify an optional, ordered list of alternate TDRSs to try if nothing can be scheduled on the primary TDRS.

Figure 11.57. Specify TDRS Use Panel



Field Descriptions

Table 11.23. Speficy TDRS Use Panel Field Descriptions

Field	Description
Old Values	The list of TDRSs currently in use in RS
Selected TDRSs	Allows user to choose which TDRSs to use when RS is scheduling. The list is ordered when the TDRS Use is set to "Use Specific TDRS" and unordered when it is set to "Use Any TDRS"
Unused TDRSs	Allows user to choose which TDRSs not to use when RS is scheduling

Button Selections

- **Clear**- Removes all selected TDRSs from Selected TDRSs list and puts them into Unused TDRSs list
- **Enter**- Updates the appropriate fields on the Recurrent Scheduling panel with the user's new selections and closes the panel
- **Close**- Aborts any modifications to the panel and closes the panel

RS Specify Sub-Interval

The RS Specify Sub-Interval panel allows the user to specify the type of subinterval to schedule to when using RS. There are four types of subintervals: Mission Orbit, TDRS View, Time Interval, and Orbital Event. Appropriate panel items are displayed according to the selected subinterval type.

If the user chooses Orbit, RS divides the interval into subintervals at mission orbit boundaries occurring within the interval.

If the user chooses TDRS View, RS divides the interval into subintervals at the beginnings of contacts with a specified TDRS occurring within the interval.

If the user chooses Time Interval, RS divides the interval into arbitrary, user-specified, equal-sized subintervals.

If the user chooses Orbital Event, RS divides the interval into three service windows based on the occurrences of a specified orbital event type within the overall interval: up to three SARs can be scheduled before, during, and after each orbital event.

The time spanned by the subinterval is a function of the subinterval type. For event-derived types, the subinterval start and stop times are calculated from database-stored events. The subinterval will be repeated an integer number of times filling in the user-requested time period.

RS Specify Sub-Interval Subpanels

Table 11.24. RS Specify Sub-Interval Subpanels

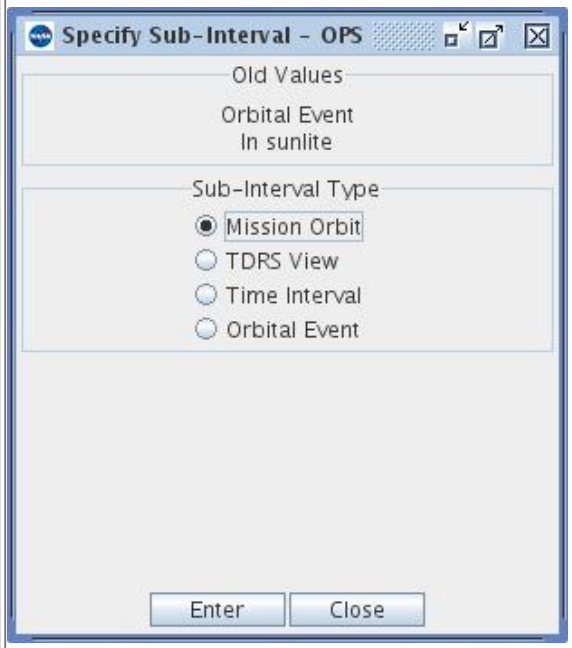
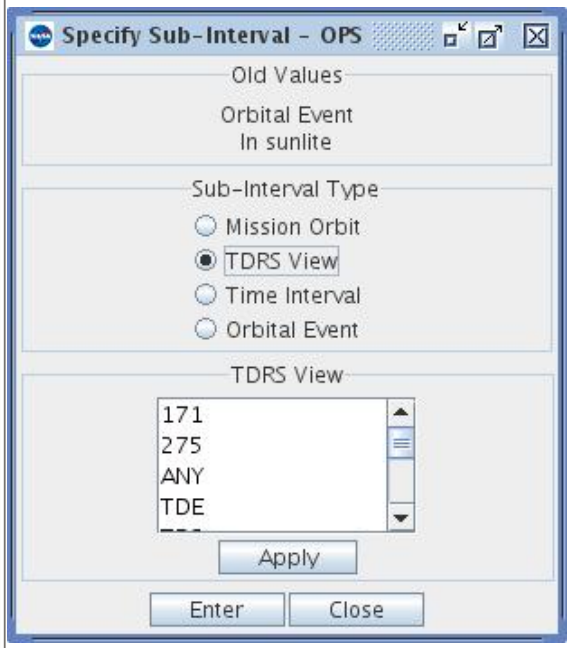
Figure 11.58. Specify Sub Interval Panel - Mission Orbit	Figure 11.59. Specify Sub Interval Panel - TDRS View
	

Figure 11.60. Specify Sub Interval Panel - Time Interval

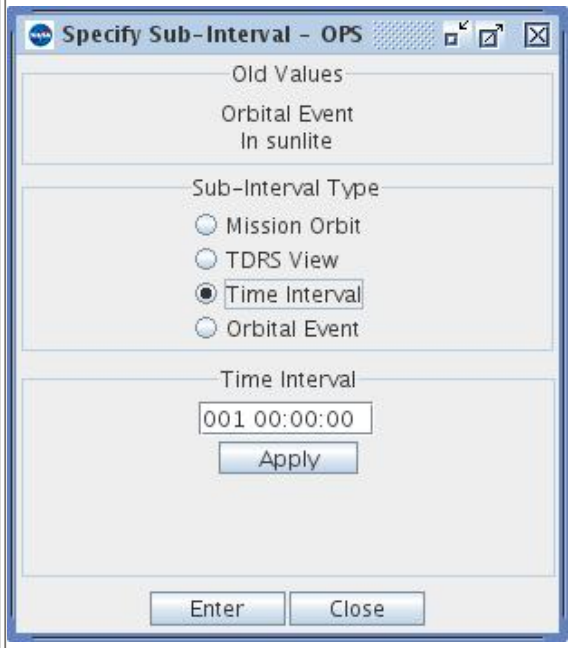
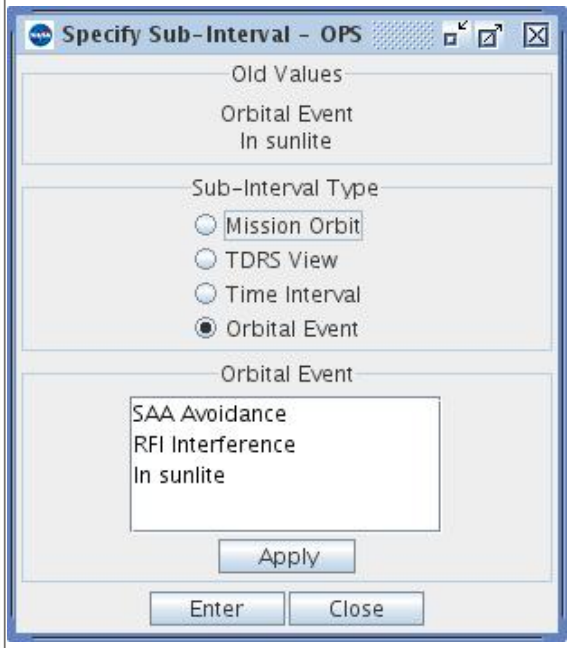


Figure 11.61. Specify Sub Interval Panel - Orbital Event



Field and Button Descriptions

Table 11.25. RS Specify Sub Interval Panels Field and Button Descriptions

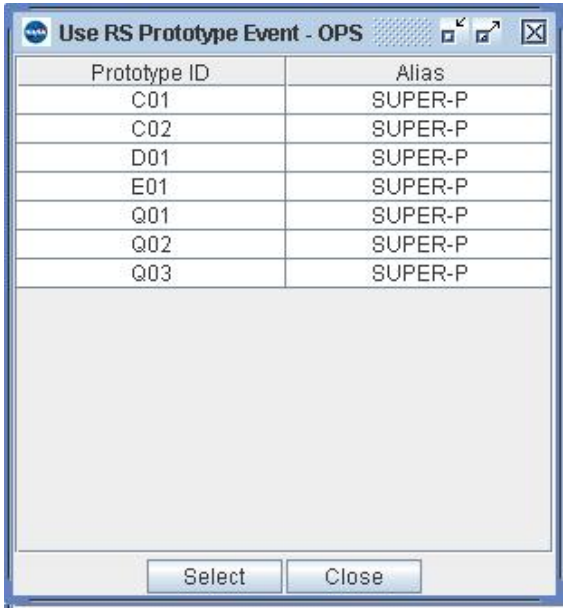
Field/Button	Description
Sub-Interval Type Radio Button	Allows user to choose the subinterval type: Mission Orbit, TDRS View, Time Interval, or Orbital Event
TDRS View Single-Select Scrolling Textlist	Allows user to select the TDRS used for defining the TDRS View subinterval type (displayed and applicable only for the TDRS View subinterval type)
Time Interval Textbox	A time text field allowing the user to enter the time interval used to define the subinterval (displayed and applicable only for the Time Interval subinterval type)
Orbital Event Single-Select Scrolling Textlist	Allows user to select the orbital event used in defining the subinterval (displayed and applicable only for the Orbital Event subinterval type)
Apply	Saves the user's selection; to actually apply the changes use the Enter button
Enter Button	Accepts the user’s selections and closes the panel
Close Button	Cancels the user selection and closes the panel

Use RS Prototype Event

After selecting a pattern grid cell by clicking on it and clicking on the User Prototype button on the recurrent Scheduling panel, tthe User RS Prototype Event panel appears with a list of available Recurrent Scheduling Prototypes available for the selected SIC. Upon selection of an RS Prototype, the appropriate information is copied the pattern grid cell.

Multiple prototypes can be incorporated into a single pattern grid cell by selecting multiple prototypes or repeated use of the User Prototype button - the latter allows for ordering the prototypes.

Figure 11.62. Use RS Prototype Event Panel



Field/Button Descriptions

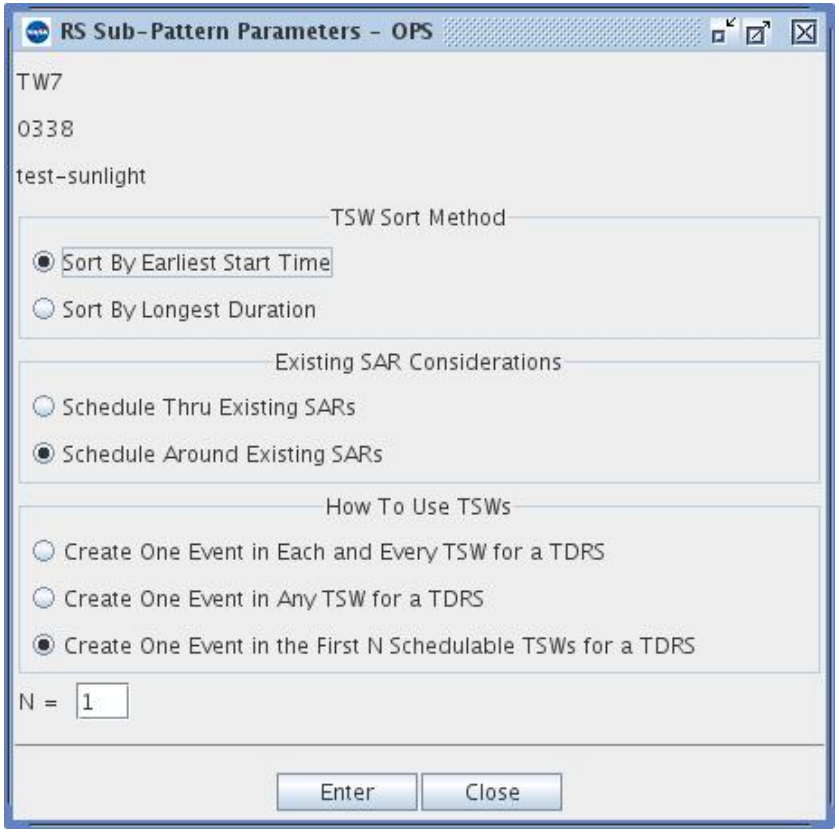
Table 11.26. Use Prototype Event Panel Field and Button Descriptions

Field/Button	Description
RS Prototype ID	The RS prototype identifier defined for the SIC
RS Prototype Alias	A descriptive name for the prototype
Select Button	Copy the selected RS Prototype ID to the selected pattern grid cell on the Recurrent Scheduling panel and close the Use RS Prototype Event panel
Close Button	Close the Use RS Prototype Event panel

Set Sub-Pattern Parameters

The Set RS Sub-Pattern Parameters panel is initiated from the Recurrent Scheduling panel by selecting a subpattern grid cell and clicking on the Set Sub-Pattern Parameters button. This panel allows the user to set RS parameters that apply specifically to one subpattern.

Figure 11.63. Set Sub Pattern Parameters Panel



Field and Button Descriptions

Table 11.27. Set Sub Pattern Parameters Panel Field and Button Descriptions

Field/Button	Description
Sort by Earliest Start Time	Causes RS to sort all usable portions of TSWs within the specified sub-pattern in descending time order.
Sort by Longest Duration	Causes RS to sort all usable portions of TSWs within the specified sub-pattern in duration order, descending.
Schedule Thru Existing SARs	Causes RS to ignore any granted SARs when generating new SARs. Note: that RS will always schedule around with confirmed SARs (USMs).
Schedule Around Existing SARs	Causes RS to generate new SARs such that they do not overlap any existing SARs.
Create One Event in Each and Every TSW for a TDRS	Causes RS to create the SAR specified in an RS prototype or the SARs specified in a RS superprototype in each usable portion of every TSW in the sub-pattern.
Create One Event in Any TSW for a TDRS	Causes RS to create a single SAR for the sub-pattern. The SAR start time will be based on the start time of the first TSW in the sub-pattern. The SAR stop time will be based on the stop time of the last TSW in the sub-pattern. The RS prototype should specify the SAR start time and stop time based on TSWs and not a fixed duration.
Create One Event in the First N Schedulable TSWs for a TDRS	Causes RS to create the SAR specified in an RS prototype or the SARs specified in an RS superprototype in each of the first N schedulable TSWs of a sub-pattern. The value of N may be from one to ninety-nine. It is specified in the text box directly below the radio button. N can be from 1 to 99.

Enter Button	Closes the panel and commits changes to the sub-pattern parameters (the pattern must still be explicitly saved to make the changes permanent between RS sessions).
Close Button	Closes the panel without committing changes to the sub-pattern parameters.

SAR Generation Report

The user can specify the generation of a summary or a full report for the RS run by choosing the desired report type from the main RS panel. A portion of a sample full report is shown below:

```
Recurrent Scheduling Log And Summary ReprotFile: .\RS133170437.rpt Mission:
0338 Pattern: test-sunlight Sub-Interval: orbital event - In sunlite
Overall Scheduling Interval: 08/097/19:12:00 to 08/104/20:48:00 Time Period
Offset: +00/000/00:00:00 Sub-Pattern: TW7 - During Orbital Event
1              Schedule One Event In First Schedulable
TSW              08/103/14:54:20 to 08/103/15:51:40
TDRSs: TW7              Protoypes: Q01 E01 D01  Beginning Prototype: Q01 -
NMSA_CO (A0338MS) Created SAR: 08/103/15:02:00 to 08/103/15:22:00
(00/000/00:00:00) for Q01              minus tolerance = 000000, plus tolernace
= 000000  Prototype Q01 created 1 SARs on usable portion (08/103/14:55:00
to 08/103/15:26:00) of TW7 TSW  End Prototype: Q01 - NMSA_CO  Beginning
Prototype: E01 - 3MINDRK (A0338MS) Abandoning attempt to generate SAR(s)
for ptototype/ superPrototype: No TSW available for H01 and SHF3MINDRK of E01
End Prototype: E01 - 3MINDRK  Beginning Prototype: D01 - SUNSA_CO
(A0338MS) Abandoning attempt to generate SAR(s) for ptototype/ superPrototype:
No TSW available for H01 and SHF5MINDRK of D01  End Prototype: D01 - SUNSA_CO
End Sub-Pattern TW7 - During Orbital Event
1  ____________________________________________________________  Sub-Pattern: TES
- During Orbital Event 1              Schedule One Event In First
Schedulable TSW              08/103/14:54:20 to 08/103/15:51:40
TDRSs: TES              Protoypes: Q01 E01 D01  Beginning Prototype: Q01 -
NMSA_CO (A0338MS) Created SAR: 08/103/15:27:00 to 08/103/15:47:00
(00/000/00:00:00) for Q01              minus tolerance = 000000, plus tolernace
= 000000  Prototype Q01 created 1 SARs on usable portion (08/103/15:20:00
to 08/103/15:51:40) of TES TSW  End Prototype: Q01
- NMSA_CO           :           :           :           : Beginning Prototype: D01
- SUNSA_CO (A0338MS) Created Alt. SAR: 08/104/18:51:00 to
08/104/19:11:00 (00/000/00:00:00) for D01                    minus tolerance
= 000000, plus tolernace = 000000  Prototype D01 created 1 SARs on usable
portion (08/104/18:44:00 to 08/104/19:28:00) of TW7 TSW  End Prototype: D01
- SUNSA_CO  End Sub-Pattern TW7 - During Orbital Event
1  ____________________________________________________________  Sub-Pattern: TES
- During Orbital Event 1              Schedule One Event In First
Schedulable TSW              08/104/18:39:39 to 08/104/19:37:01
TDRSs: TES              Protoypes: Q01 E01 D01  Beginning Prototype: Q01 -
NMSA_CO (A0338MS) Created SAR: 08/104/19:25:00 to 08/104/19:45:00
(00/000/00:00:00) for Q01              minus tolerance = 000000, plus tolernace
= 000000  Prototype Q01 created 1 SARs on usable portion (08/104/19:18:00
to 08/104/19:37:01) of TES TSW  End Prototype: Q01 - NMSA_CO  Beginning
Prototype: E01 - 3MINDRK (A0338MS) Created Alt. SAR: 08/104/19:25:00
```

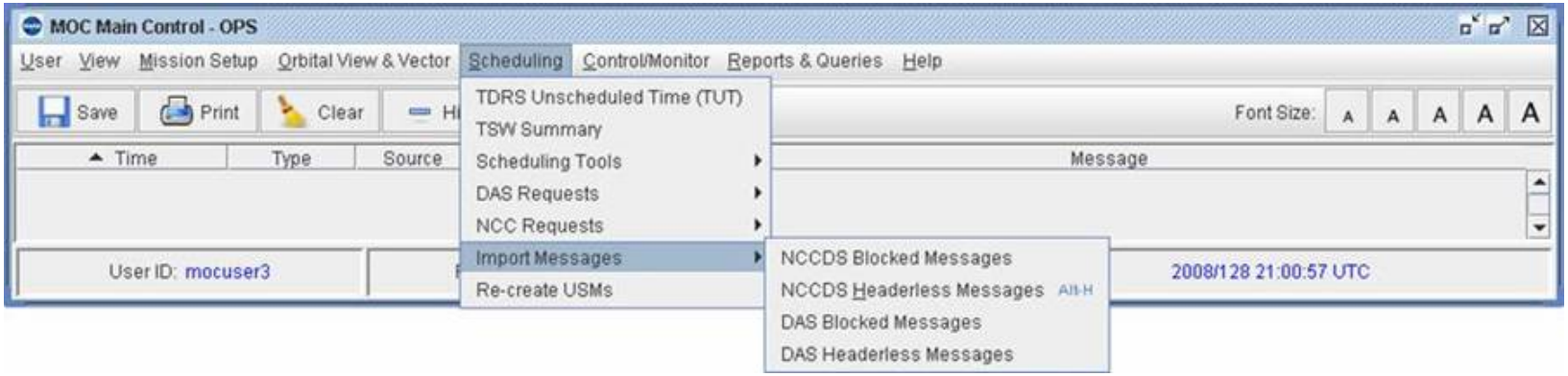
```
to 08/104/19:45:00 (00/000/00:00:00) for E01                    minus tolerance
= 000000, plus tolernace = 000000  Prototype E01 created 1 SARs on usable
portion (08/104/19:18:00 to 08/104/19:40:01) of TES TSW  End Prototype: E01
- 3MINDRK  Beginning Prototype: D01 - SUNSA_CO (A0338MS) Created Alt.
SAR: 08/104/19:25:00 to 08/104/19:45:00 (00/000/00:00:00) for
D01                   minus tolerance = 000000, plus tolernace = 000000
Prototype D01 created 1 SARs on usable portion (08/104/19:18:00 to
08/104/19:42:01) of TES TSW  End Prototype: D01 - SUNSA_CO  End Sub-Pattern TES
- During Orbital Event
1  ____________________________________________________________              TES
TW7   Total     D01    11     9    20     E01    11     8    19     Q01
15    15    30   Total    37    32    69
```

Scheduling/Import Messages

The options under the Import Messages menu enables the user to interactively ingest bulk schedule request (BSR) files to DAS and NCCDS. A bulk schedule request file can contain one or more schedule requests with each request ends with a "Line Feed" character. A file can contain DAS requests or NCCDS requests but not both. The file can be either "Blocked" or "Headerless." If a file is "Blocked," all requests in the file will be of the "Blocked" format. The format of a "Blocked" message is defined in the 452-ICD-EPS/SNAS. In a "Headerless" schedule request file, all requests are without any record/message header.

There are four options for Import Messages: NCCDS Blocked, NCCDS Headerless, DAS Blocked, DAS Headerless. They only differ in the schedule request formats. The processing of the bulk files is the same for all four options.

Figure 11.64. Scheduling/Import Messages Menu



An NCCDS bulk file can contain SARs (NCCDS Message Type 99, Class 10, or 99/10), SDRs (99/11), RRs (99/12), ASARs (99/21), and WLRs (99/24). Except for the SARs, the Referenced Request ID fields in all other requests need to contain a valid Request ID NCCDS recognizes. Otherwise, they will be rejected. A sample "Blocked" NCCDS bulk schedule request file is shown below:

```
99unknown10A0372CSUSERpass1ANY00000000000081341300000000000000000000000
02A0100000000100000;
```

```
B5100000000100000;
99unknown10A0372CSUSERpass1ANY00000000000081341830000000000000000000000
02H2100000000200000;
K5100000000200000;
99unknown10A0372CSUSERpass1ANY0000000000008134180000000000000000000000   01X1200000000200000;
```

A DAS bulk file can contain RARs (DAS Message Type 200), RADRs (202), RAMRs (204), PBKRs (502), PBKDRs (504), and PBKMRs (506). Each RADR and RAMR needs to reference a valid RAR/RAMR and each PBKDR and PBKMR needs to reference a valid PBKR/PBKMR. The formats of the request types are provided in the tables below:

Table 11.28. Bulk Scheduling Line Format for DAS RAR

Number	Data Item	Start Byte	# ASCII Characters	Range of Value
1	Message Type	1	3	200
2	Request ID	4	7	0000000 to 9999999
3	SIC	11	4	0000 to 9999
4	TDRS ID	15	3	3 alphanumeric characters
5	Service Start Time	18	11	YYDDDHHMMSS
6	Service Stop Time	29	11	YYDDDHHMMSS
7	Spare	40	7	7 ASCII blanks
8	Number of SSCs	47	2	always 01
9	Service Specification Code(SSC)	49	3	3 alphanumeric characters
10	Number of SSC Parameters	52	2	01 to 99
11	SSC Parameter(Keyword and Value Pair)	54	dynamic	keyword and value separated by an equals sign (ex. keyword=value)
12	SSC Parameter Separator	54 + Keyword and Value Pair length	1	comma (,)
13	Repeat 11 & 12 for number of keywords	Byte following comma separator	dynamic	keyword and value pairs separated by an equal sign with a comma between pairs
14	Service End Flag	Byte following the last keyword-value pair	1	semicolon (;)
15	Line Terminator	Byte following Service End Flag	1	Line Terminator appropriate to system file is used on (Line Feed, Carriage Return, etc.)

Table 11.29. Bulk Scheduling Line Format for DAS RADR

Number	Data Item	Start Byte	# ASCII Characters	Range of Value
1	Message Type	1	3	202
2	Request ID	4	7	0000000 to 9999999
3	SIC	11	4	0000 to 9999
4	Spare	15	3	3 ASCII blanks
5	Spare	18	11	11 ASCII blanks
6	Spare	29	11	11 ASCII blanks

7	Real-time Event Request ID	40	7	0000000 to 9999999
8	Line Terminator	47	1	Line Terminator appropriate to system file is used on (Line Feed, Carriage Return, etc.)

Table 11.30. Bulk Scheduling Line Format for DAS RAMR

Number	Data Item	Start Byte	# ASCII Characters	Range of Value
1	Message Type	1	3	204
2	Request ID	4	7	0000000 to 9999999
3	SIC	11	4	0000 to 9999
4	Spare	15	3	3 ASCII blanks
5	Effective Start Time	18	11	YYDDDHHMMSS
6	Spare	29	11	11 ASCII blanks
7	Real-time Event Request ID	40	7	0000000 to 9999999
8	Number of SSCs	47	2	always 01
9	Service Specification Code(SSC)	49	3	3 alphanumeric characters
10	Number of SSC Parameters	52	2	01 to 99
11	SSC Parameter(Keyword and Value Pair)	54	dynamic	keyword and value separated by an equals sign (ex. keyword=value)
12	SSC Parameter Separator	54 + Keyword and Value Pair length	1	comma (,)
13	Repeat 11 & 12 for number of keywords	Byte following comma separator	dynamic	keyword and value pairs separated by an equal sign with a comma between pairs
14	Service End Flag	Byte following the last keyword-value pair	1	semicolon (;)
15	Line Terminator	Byte following Service End Flag	1	Line Terminator appropriate to system file is used on (Line Feed, Carriage Return, etc.)

Table 11.31. Bulk Scheduling Line Format for DAS PBKR

Number	Data Item	Start Byte	# ASCII Characters	Range of Value
1	Message Type	1	3	502
2	Request ID	4	7	0000000 to 9999999
3	SIC	11	4	0000 to 9999
4	Spare	15	3	3 ASCII blanks
5	Playback Start Time	18	11	YYDDDHHMMSS
6	Start Time of Data Segment	29	11	YYDDDHHMMSS
7	Real-time Event Request ID	40	7	0000000 to 9999999
8	IP Address	47	15	nnn.nnn.nnn.nnn
9	Port Number	62	5	00000 to 99999
10	Line Terminator	67	1	Line Terminator appropriate to system file is used on (Line Feed, Carriage Return, etc.)

Table 11.32. Bulk Scheduling Line Format for DAS PBKDR

Number	Data Item	Start Byte	# ASCII Characters	Range of Value
1	Message Type	1	3	504
2	Request ID	4	7	0000000 to 9999999
3	SIC	11	4	0000 to 9999
4	Spare	15	3	3 ASCII blanks
5	Spare	18	11	11 ASCII blanks
6	Spare	29	11	11 ASCII blanks
7	Playback Event Request ID	40	7	0000000 to 9999999
8	Line Terminator	47	1	Line Terminator appropriate to system file is used on (Line Feed, Carriage Return, etc.)

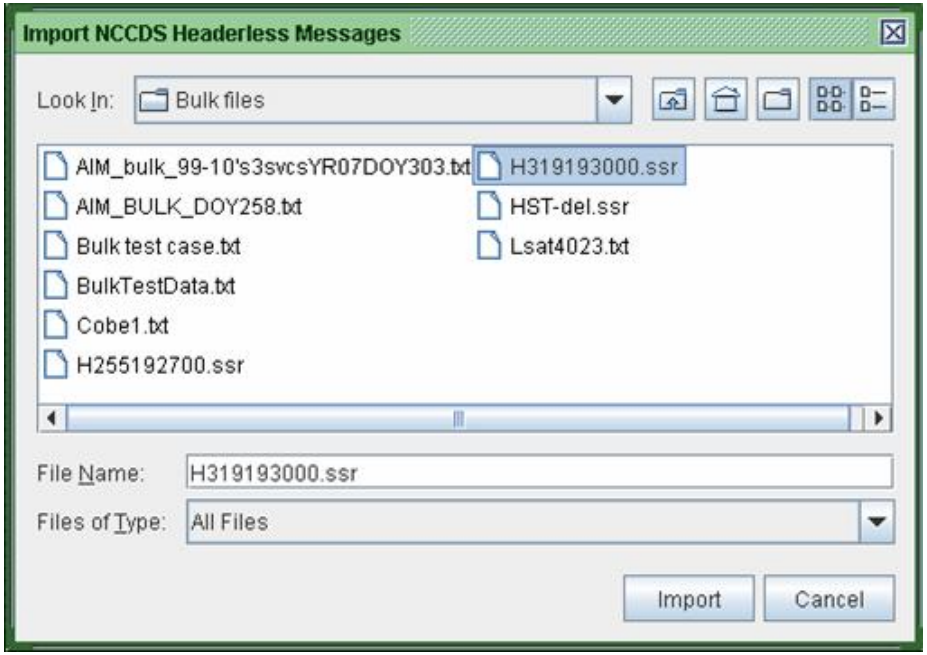
Table 11.33. Bulk Scheduling Line Format for DAS PBKMR

Number	Data Item	Start Byte	# ASCII Characters	Range of Value
1	Message Type	1	3	506
2	Request ID	4	7	0000000 to 9999999
3	SIC	11	4	0000 to 9999
4	Spare	15	3	3 ASCII blanks
5	Playback Start Time	18	11	YYDDDHHMMSS
6	Spare	29	11	11 ASCII blanks
7	Playback Event Request ID	40	7	0000000 to 9999999
8	IP Address	47	15	nnn.nnn.nnn.nnn
9	Port Number	62	5	00000 to 99999
10	Line Terminator	67	1	Line Terminator appropriate to system file is used on (Line Feed, Carriage Return, etc.)

Select a File to Import

Upon selection of an option from the Import Messages menu a file chooser is displayed. After a file is selected for import, SNAS locates the file and peforms a preliminary validation on each request. Upon completion of the validation, a Bulk Schedule Request (BSR) Summary panel appears.

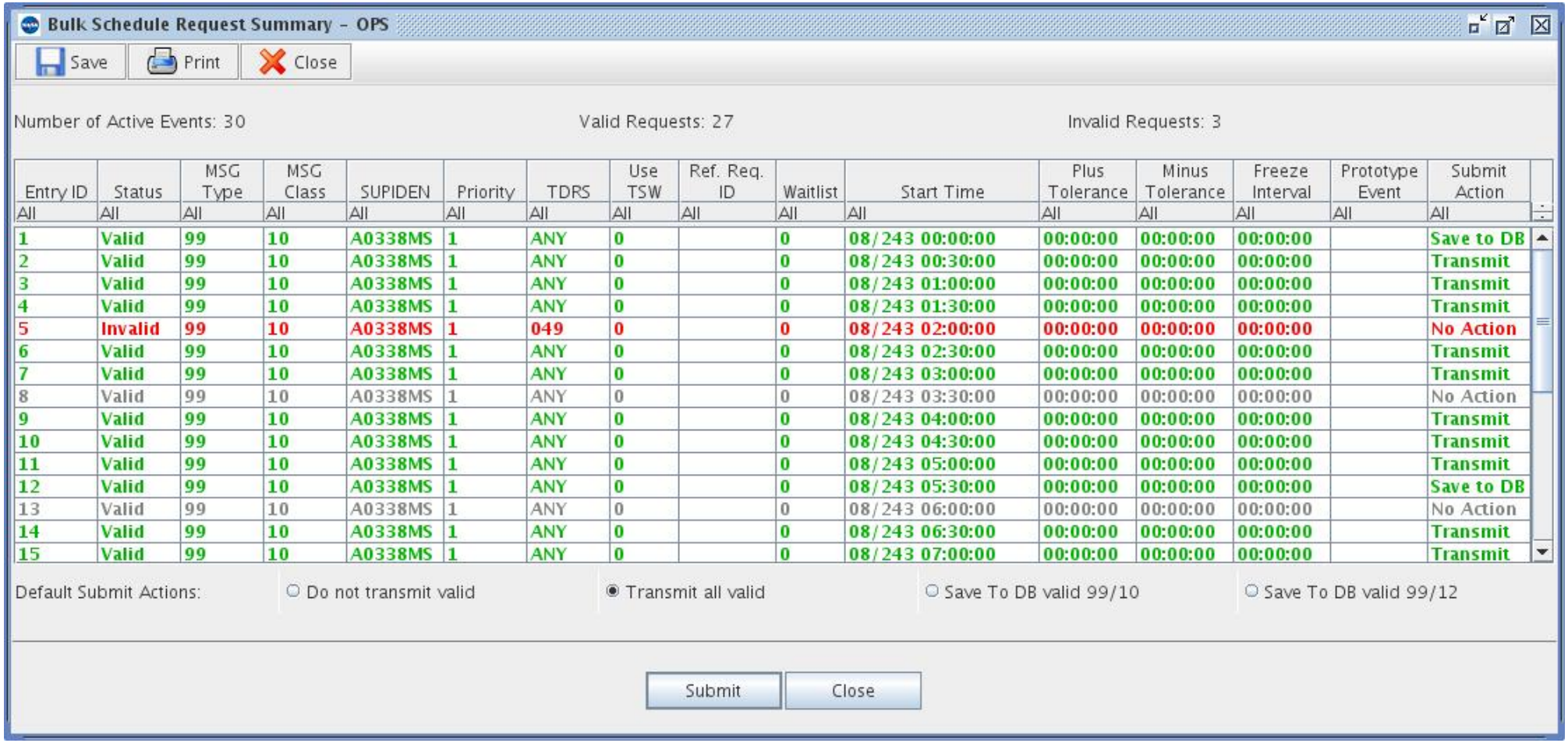
Figure 11.65. Import Messages File Chooser Panel



Bulk Request Summary

All requests that passed the preliminary checks are in green while all invalid requests are marked in red. An invalid (red) request can be interactively corrected before proceeding. A valid (green) request can either be transmitted to NCCDS, be saved to SNAS database without transmitting (SAR only), or be left with no action at all. The selected action is shown in the right-most column titled Submit Action. The default action for all valid request is Transmit. To change the action assigned to a request, click on the cell in the Submit Action column for the request. The action will cycle through all possible actions for the request. Stop at the desired action. The four radio buttons -- Do not transmit valid, Transmit all valid, Save to DB valid SAR (99/10), and Save to DB valid RR (99/12) -- are used to reset the actions for all valid requests.

Figure 11.66. Bulk Request Summary Panel



Entry ID	Status	MSG Type	MSG Class	SUPIDEN	Priority	TDRS	Use TSW	Ref. Req. ID	Waitlist	Start Time	Plus Tolerance	Minus Tolerance	Freeze Interval	Prototype Event	Submit Action
All	All	All	All	All	All	All	All	All	All	All	All	All	All	All	All
1	Valid	99	10	A0338MS	1	ANY	0		0	08/243 00:00:00	00:00:00	00:00:00	00:00:00		Save to DB
2	Valid	99	10	A0338MS	1	ANY	0		0	08/243 00:30:00	00:00:00	00:00:00	00:00:00		Transmit
3	Valid	99	10	A0338MS	1	ANY	0		0	08/243 01:00:00	00:00:00	00:00:00	00:00:00		Transmit
4	Valid	99	10	A0338MS	1	ANY	0		0	08/243 01:30:00	00:00:00	00:00:00	00:00:00		Transmit
5	Invalid	99	10	A0338MS	1	049	0		0	08/243 02:00:00	00:00:00	00:00:00	00:00:00		No Action
6	Valid	99	10	A0338MS	1	ANY	0		0	08/243 02:30:00	00:00:00	00:00:00	00:00:00		Transmit
7	Valid	99	10	A0338MS	1	ANY	0		0	08/243 03:00:00	00:00:00	00:00:00	00:00:00		Transmit
8	Valid	99	10	A0338MS	1	ANY	0		0	08/243 03:30:00	00:00:00	00:00:00	00:00:00		No Action
9	Valid	99	10	A0338MS	1	ANY	0		0	08/243 04:00:00	00:00:00	00:00:00	00:00:00		Transmit
10	Valid	99	10	A0338MS	1	ANY	0		0	08/243 04:30:00	00:00:00	00:00:00	00:00:00		Transmit
11	Valid	99	10	A0338MS	1	ANY	0		0	08/243 05:00:00	00:00:00	00:00:00	00:00:00		Transmit
12	Valid	99	10	A0338MS	1	ANY	0		0	08/243 05:30:00	00:00:00	00:00:00	00:00:00		Save to DB
13	Valid	99	10	A0338MS	1	ANY	0		0	08/243 06:00:00	00:00:00	00:00:00	00:00:00		No Action
14	Valid	99	10	A0338MS	1	ANY	0		0	08/243 06:30:00	00:00:00	00:00:00	00:00:00		Transmit
15	Valid	99	10	A0338MS	1	ANY	0		0	08/243 07:00:00	00:00:00	00:00:00	00:00:00		Transmit

Correct Errors in an Invalid Request

If a request failed the preliminary checks because of invalid Message Type, Message Class or SUPIDEN, the request can not be corrected. For other errors, SNAS allows the user to correct the errors so the request can become valid and eligible for submission.

Some errors in an invalid NCCDS or DAS schedule request can be corrected. To correct errors in an invalid request, click on the request and an appropriate request details panel appears. Two examples, one SDR and the other SAR, are shown below. The Validation Status box near the bottom of the details panel will display in red the first error found. If the error appears in the panel or in the Parameters' sub panel, correct the error and click on the Save Changes button. If the resulting request becomes valid, its status on the Summary panel will be changed to Valid. If, however, more errors still exist then the status will remain Invalid. Clicking the request and the next error will now appear in the Validation Status. Repeat the correction process until all errors have been corrected and its status is changed to Valid.

Figure 11.67. BSR Invalid SDR Details Panel

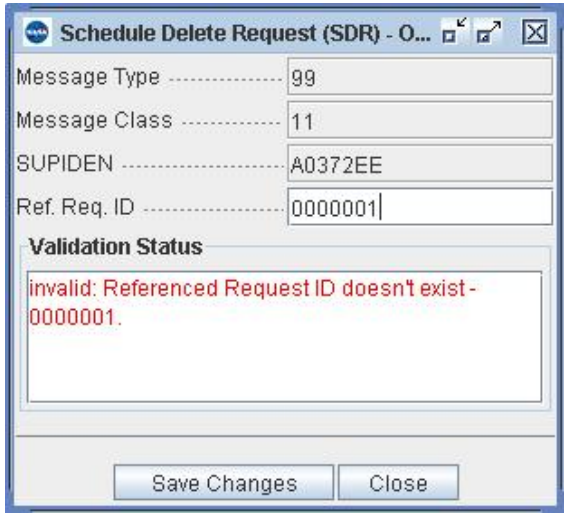
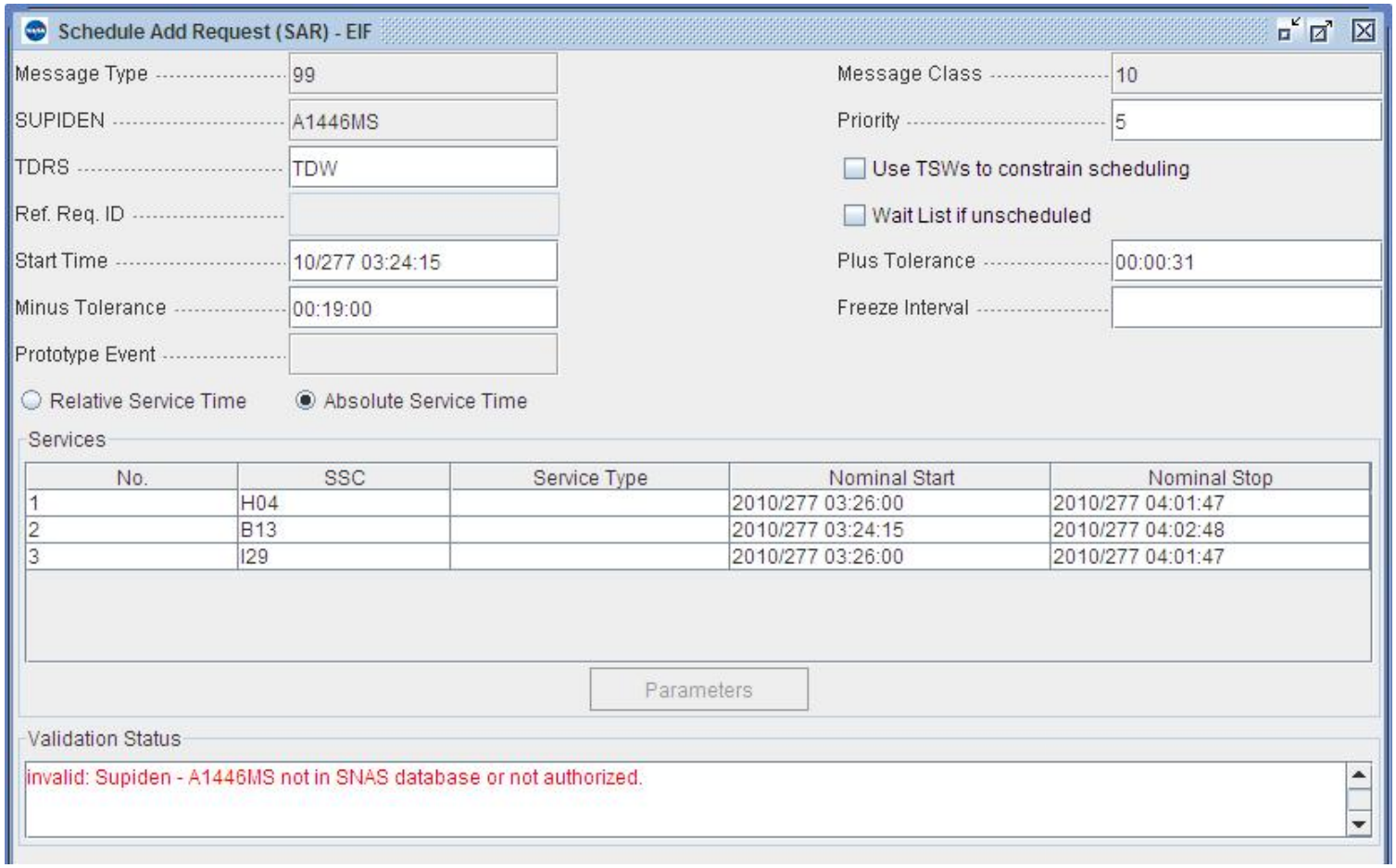
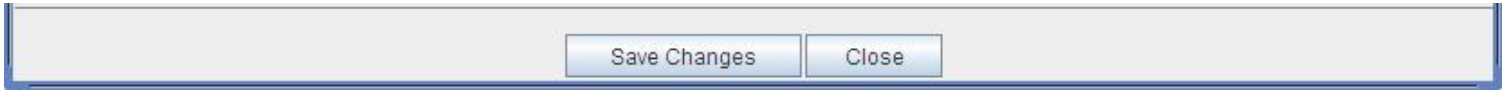


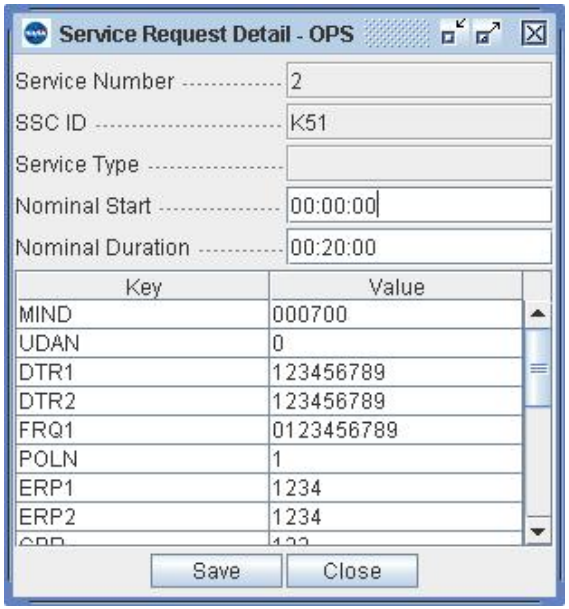
Figure 11.68. BSR Invalid SAR Details Panel





If the error is in the service parameters, select the service and click on the Parameters button and a service parameters panel appears for the user to change one or more parameter values. After the changes are made, click on the Save button to save the changes locally and return to the panel above.

Figure 11.69. BSR Service Detail Panel



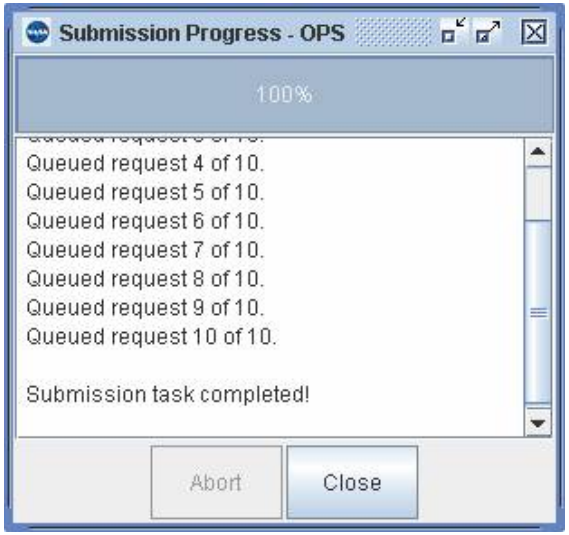
Submit Bulk Schedule Requests

Once correctable invalid requests on the Summary panel have been corrected and action for each request has been determined, click on the Submit button to initiate the bulk request submission process. Note: The NCC may from time to time impose a limit on the number of requests that can be submitted at any one time to avoid overwhelming the NCCDS - this limit should be obtained from the O&M Manager.

Before the first valid reqest is submitted, a file chooser panel appears for the user to save the bulk file regardless if any requests have been changed. The user can specify the original file name if it is desired to replace the original file. Otherwise a different name should be used. After the file save is complete, requests are submitted to NCCDS/DAS at a metered pace. The time interval between any two consecutive request submissions is determined by the parameter**BulkRequestSubmissionInterval**in the Client Properties file. Once the bulk request submission is initiated, a Submission Progress panel appears to show the submission progress.

During the bulk request submission, the user can abort the process by clicking on the Abort button on the progress panel. The process terminates with the immediate culmination of the submission process.

Figure 11.70. Bulk Schedule Request Submission Progress Panel



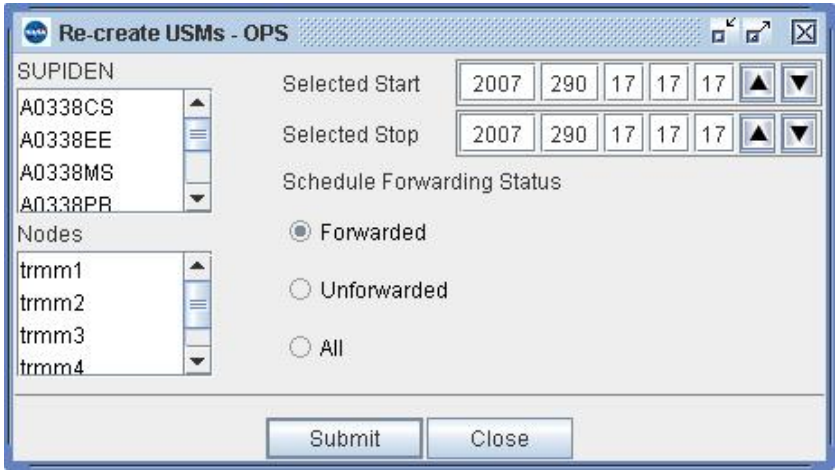
Scheduling/Re-create USMs

All USMs received from NCCDS are stored on SNAS database in native format. The Re-Create USMs menu option allows the user to retrieve USMs for a SIC from the SNAS database and save them as a "Blocked" disk file on client's workstation.

When this menu option is selected and a SIC is selected, a Re-create USMs retrieval criteria panel appears. One or more SUPIDENs and one or more EPS Nodes along with the time range for USM start times are used as retrieval criteria. Click the Submit button to initiate the retrieval process. Upon completion, retrieved USMs are saved in the Export directories of all EPS Nodes selected. A confirmation message including the file name for the saved USMs appears on the Alert panel.

Two additional variations exist to re-create USMs. This function has an automated variation, controlled by parameters in the client.prop and activated by the AutoUsm parameter, which creates a file for a user at login and creates an additional file following receipt of updated USMs. The second option is to re-create USMs via EPS with the input request format defined in SNAS/EPS ICD.

Figure 11.71. Re-create USMs Panel



Chapter 12. Control & Monitor Menu Selections and Panel Descriptions

Table of Contents

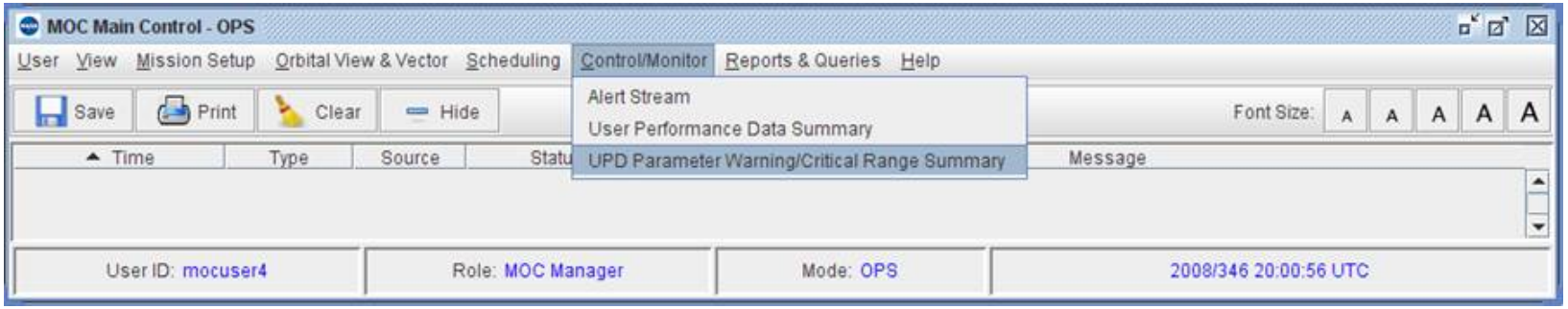
Control & Monitor Menu
Control & Monitor/ Alert Stream
- Alert Stream Panel
- Panel options

Control & Monitor/ UPD Parameter Warning/Critical Range Summary
Control & Monitor/ User Performance Data Summary
- UPD Summary Panel
- UPD Details Panel
- Generate Formatted UPD Logs
- Submit GCMR Panel

Control & Monitor Menu

The Control/Monitor Menu provides options for viewing alerts and real-time performance data, and for controlling or reconfiguring ongoing services.

Figure 12.1. Control/Monitor Menu



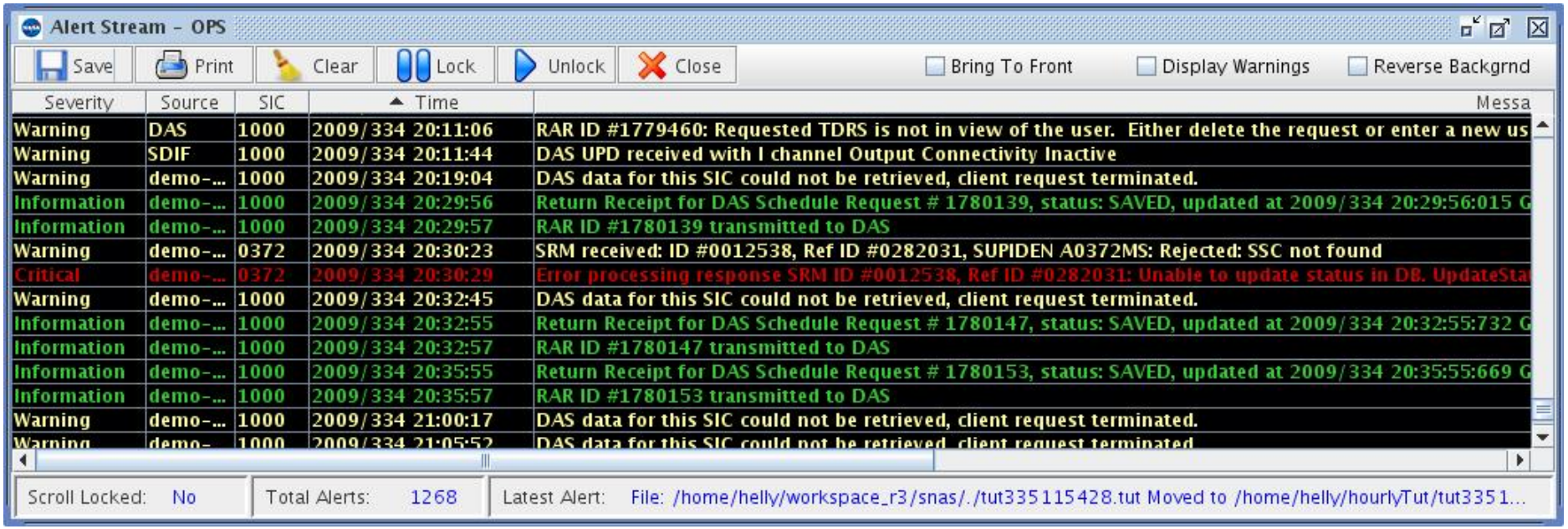
Control & Monitor/ Alert Stream

The Alerts Stream menu option is used to display the system alert on an Alert Stream panel, allowing the user to monitor system operations on a real-time basis.

Alert Stream Panel

The Alert Stream panel is displayed automatically when the first alert is received or generated by the MOC Client application. The "AlertsAge" parameter in the client.prop file controls the age of alerts that first show up on the Alert Stream panel. The Alert Stream panel may also be activated manually by selecting the Alert Stream menu option in the Control/Monitor menu on the Main Control Panel.

Figure 12.2. Alert Stream Panel



Each alert entry consists of the following items:

- **Severity**. Color-coded indication of alert severity. The following severity levels are defined:
  - Information (green). Indicates successful processing with additional information.
  - Warning (yellow). Indicates successful processing by SNAS, but with warning information, such as a request rejected by NCCDS or a communication problem.
  - Critical (red). A SNAS software, system, or database problem has occurred. The problem requires resolution by a SNAS operator, system administrator, DBA, or developer.

- **SIC**. Support Identification Code that the alert pertains to. Alerts are displayed only for SICs for which the user is authorized and has selected to be active for this session. A SIC of "0000" is used to broadcast alerts to all connected users.

- **Source**. The source subsystem that generated the alert.

- **Time**. The GMT time that alert was generated by the source subsystem.

- **Message**. Alert message text.

Alerts can be sorted by any column by clicking on the column header. New alerts are added to the bottom of the sorted alerts. All columns can be resized by clicking and dragging the boundary between column headers. Columns can be re-ordered by clicking and dragging columns side-to-side. Rows can be selected for deletion or printing by clicking and dragging over the desired rows. Any combination of rows may also be selected by CTRL-clicking the desired rows. Shift-clicking allows selection of a range of rows.

The message text will often exceed the length of the panel. The panel can be scrolled horizontally to view the total message and/or the panel can be resized to make more of the messages visible. When positioning the cursor on an alert and wait for a second or so, the entire contents of the alert will also appear in a separate box for a short period of time.

Figure 12.3. Alert Details

Severity:	Information
Source:	demo-snif
SIC:	0372
Time:	2009/009 20:26:10
Alert:	USM - FIXED USM PREM received for Event ID #1514964, SUPIDEN A0372CS : TDRS: 171, Event Start Time: 09009203500

Panel options

The status bars located at the top and bottom of the Alert Stream panel consist of the following items:

- **Lock/Unlock button**s. Control the pausing and automatically scrolling of the messages. In Scroll mode, alerts are added to the panel as they are received, with the panel automatically scrolling to the latest alerts. Pause mode allows the user to stop automatic scrolling to view particular alerts without having them scroll off the panel.

- **Bring To Front Check Box**. Option to bring the Alert Stream panel to the front (on top of any open panels or windows) when an alert message is received. Note that if the Display Warnings option in the Alert Stream panel is set and a

critical message is received, the pop-up message will bring the Alert Stream panel to the front even if the BringToFront parameter is false.

- **Display Warnings Check Box**. Defines whether to display a dialog box whenever a critical (red) alert is received. If true, display a dialog box.
- **Reverse Background Check Box**. Switches the background color of the panel from black to white and vice versa.
- **Scroll Locked**. Yes if the Lock button is currently in effect.
- **Total Alerts**. Total number of alert messages received for this session.
- **Last Alert**. The latest alert that was received.

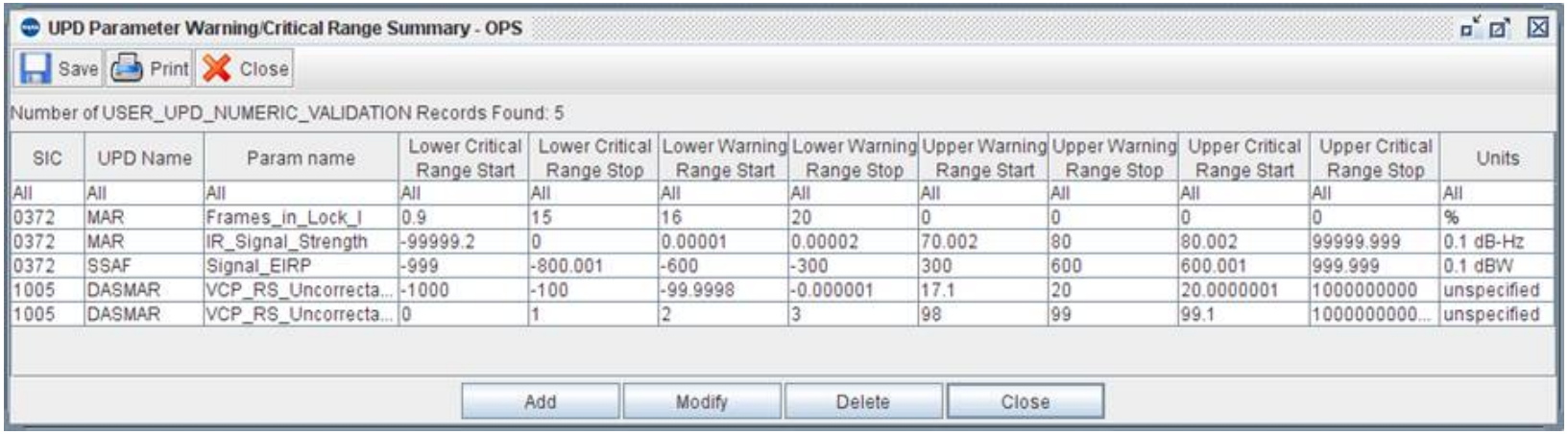
Exit Menu Option

The Exit menu option is used to close the Alert Stream Panel. Alerts will still be received and logged. If critical alerts are received and the Display Warnings option is on, popup warning messages will still be generated. If the BringToFront is set to true, the Alert Stream Panel will automatically reappear for any alert that is received regardless of severity.

Control & Monitor/ UPD Parameter Warning/Critical Range Summary

This menu option allows the user to set ranges for warning and critical alarms on any numeric type of UPD parameters. When this option is selected the following panel appears:

Figure 12.4. UPD Parameter Warning/Critical Range Summary Panel



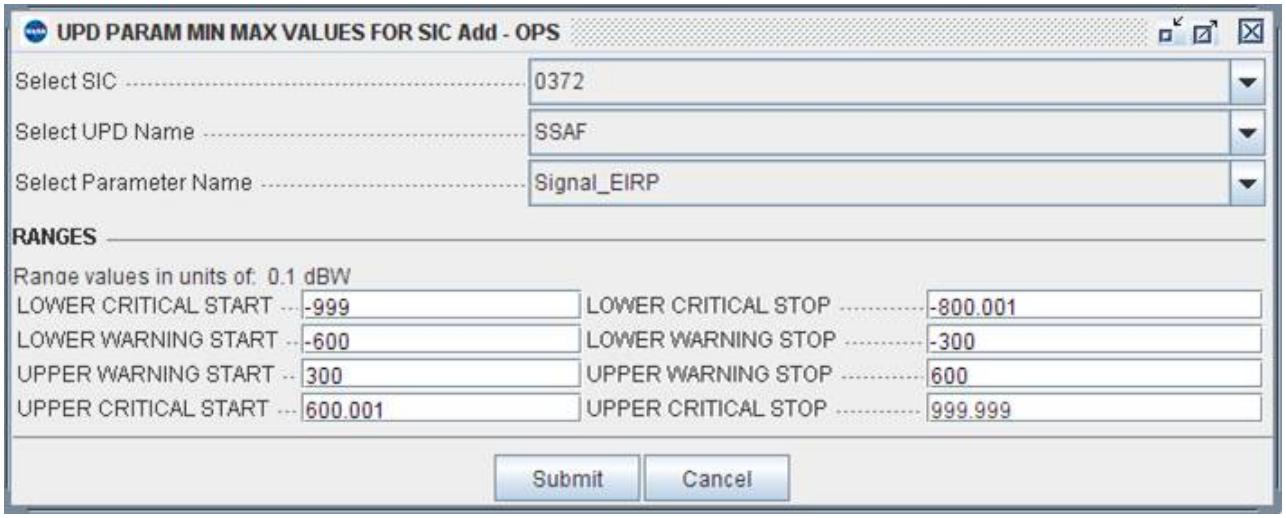
SIC	UPD Name	Param name	Lower Critical Range Start	Lower Critical Range Stop	Lower Warning Range Start	Lower Warning Range Stop	Upper Warning Range Start	Upper Warning Range Stop	Upper Critical Range Start	Upper Critical Range Stop	Units
All	All	All	All	All	All	All	All	All	All	All	All
0372	MAR	Frames_in_Lock_I	0.9	15	16	20	0	0	0	0	%
0372	MAR	IR_Signal_Strength	-99999.2	0	0.00001	0.00002	70.002	80	80.002	99999.999	0.1 dB-Hz
0372	SSAF	Signal_EIRP	-999	-800.001	-600	-300	300	600	600.001	999.999	0.1 dBW
1005	DASMAR	VCP_RS_Uncorrecta...	-1000	-100	-99.9998	-0.000001	17.1	20	20.0000001	1000000000	unspecified
1005	DASMAR	VCP_RS_Uncorrecta...	0	1	2	3	98	99	99.1	1000000000...	unspecified

Typically there are four alarm ranges. Two -- Lower Critical and Lower Warning -- are below the normal range and the other two -- Upper Warning and Upper Critical -- are over the normal range. So the order of ranges, from low to high, goes normally like this: Lower Critical, Lower Warning, Normal, Upper Warning and Upper Critical. If a numeric parameter value falls in the normal range it will be shaded in green. If the parameter value falls in either "Warning" range it will be shaded in yellow. If the parameter value falls in either "Critical" range it will be shaded in red. However,

overlapping of ranges is allowed. In addition, more than one sets of ranges are allowed for a parameters. In case of a parameter value falling within more than one range, the predominant color will be used (i.e. yellow over green, red over yellow).

To add new warning/critical alarm ranges for a UPD parameter, click on the Add button and a panel appears for selecting parameter and entering ranges. First select a SIC, then an applicable UPD (i.e. service) name, and then an applicable numeric parameter. Enter value in each of the eight textboxes for lower and upper warning and critical limits. For each range, the lower limit must be smaller than or equal to the upper limit. In the case of equal lower and upper limits, the range is meaningless and is ignored.

Figure 12.5. UPD Parameter Warning/Critical Range Definition Panel



To modify an existing warning/critical alarm ranges definition for a UPD parameter, select the record and click on the Modify button. The above panel containing ranges for the selected parameter appears. Make necessary changes and click on the Submit button to update the database.

To delete an existing warning/critical alarm ranges definition for a UPD parameter, select the record and click on the Delete button. The selected definition will be removed from the database.

To allow the updated ranges to take effect, the UPD Summary panel (refer to UPD Summary section) needs to be closed and then reopened.

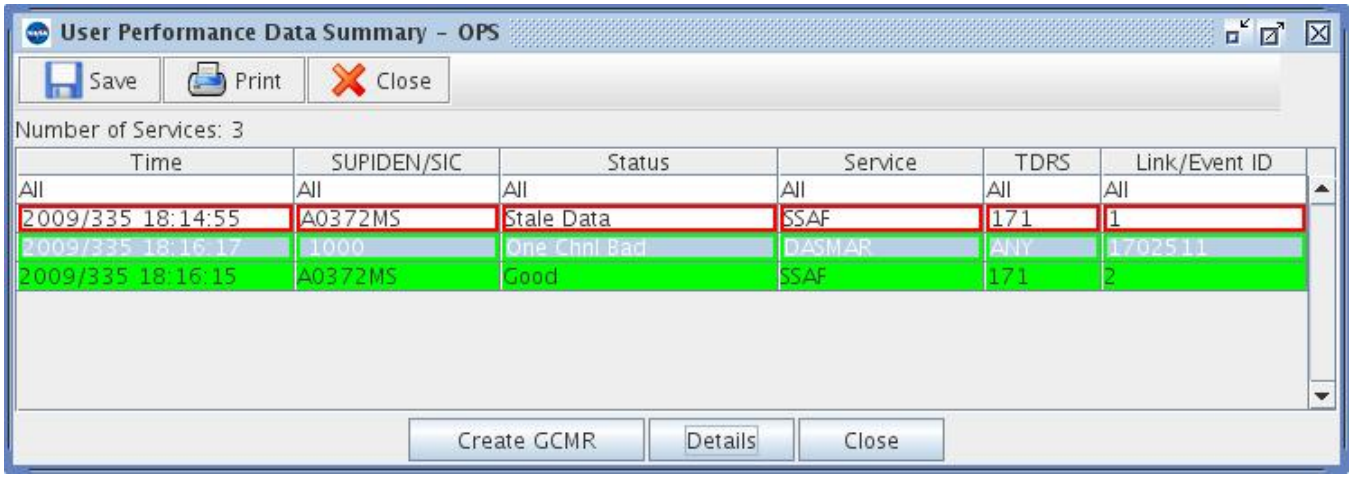
Control & Monitor/ User Performance Data Summary

The User Performance Data (UPD) Summary menu option is used to initiate a UPD Summary panel on which all currently active DAS and NCCDS services for which real-time UPDs are being received from DAS and NCCDS are listed. UPD Summary panel offers the same sorting and filtering capabilities as those offered in the Schedule Request Summary panel.

UPD Summary Panel

Upon selecting the Control & Monitor/User Performance Data Summary menu option, the UPD summary panel is displayed.

Figure 12.6. UPD Summary Panel



When a scheduled service becomes active -- the current time is equal to or later than the service start time -- the service is automatically added to the UPD Summary panel. For each active DAS service, DAS sends an updated UPD every 60 seconds. NCCDS sends an updated UPD for each active NCCDS service every 5 seconds.

Four parameters, NCCUPDPrimaryExpirationTime, NCCUPDSecondaryExpirationTime, DASUPDPrimaryExpirationTime and DASUPDSecondaryExpirationTime in the Client Properties file control the display of a service on the UPD Summary panel. If the timetag of a UPD for a service is behind the current clock by an amount more than the Primary Expiration Time, the UPD status will show "Stale." If the UPD timetag is behind the current clock by more than the Secondary Expiration Time, the UPD will be considered expired and be removed from the Summary panel.

Field Descriptions

Table 12.1. UPD Summary Selection Panel Field Descriptions

Field	Description
Time	The timetag in the current UPD stream
SUPIDEN/SIC	SUPIDEN or SIC for the service which the UPD is referencing
Status	The status of the current UPD (see table below)
Service	Type of service
TDRS	TDRS which the UPD is referencing
Link/Event ID	Where applicable, the antenna/link ID NCCDS assigned to this service, or the Event ID for a DAS service

Service UPD Status

Table 12.2. Service UPD Status

Color	Label	Explanation
Green	Good	UPDs are active. No limit-checked parameter failed.
Yellow	Warning	UPDs are active. At least one limit-checked parameter is at the warning level. No limit-checked parameters are worse than the warning level.
Red	Out of Tolerance	UPDs are active. At least one limit-checked parameter is out of tolerance.
Red	Invalid Data	An invalid value was received for at least one parameter. This usually indicates an NCCDS or SNAS software error. SN operations or SNAS development support should be notified.
White with Green Border	One Chnl Bad	UPDs are active. The parameters for one return channel (I or Q) passed validation while the other channel failed.
Gray	UPDs Ended	UPDs are not active. Timeout expired without updates for this service.
White with Red Border	Stale Data	Stale data was received from NCCDS. The data is a repeat of data received in a previous UPD.

Button Selection

- **Create GCMR**- Calls the GCMR panel for the selected UPD
- **Details**- Calls the UPD Details panel for the selected UPD
- **Close**- Closes the UPD Summary Selection panel and returns to the main control panel

UPD Details Panel

A service on the UPD Summary panel will appear green if all parameters in the UPD stream are within the valid ranges. An invalid UPD stream, shaded in red, indicates that one or more parameters has an out-of-range or invalid value. To view all parameters associated with an active service UPD stream, select the service and click on the Details button to bring up the appropriate UPD Details panel showing all service parameters for the selected service. The type of the service (MAF, SSAR, DASMAR, etc.) for the panel is shown on the panel title bar. Definitions of UPD parameters for all service types are available in Section 8.4 of the 452-ICD-SN/CSM. Sample UPD Details panels for a DAS service and an NCCDS MAF service are provided below:

Figure 12.7. UPD Details Panel for DASMAR Service

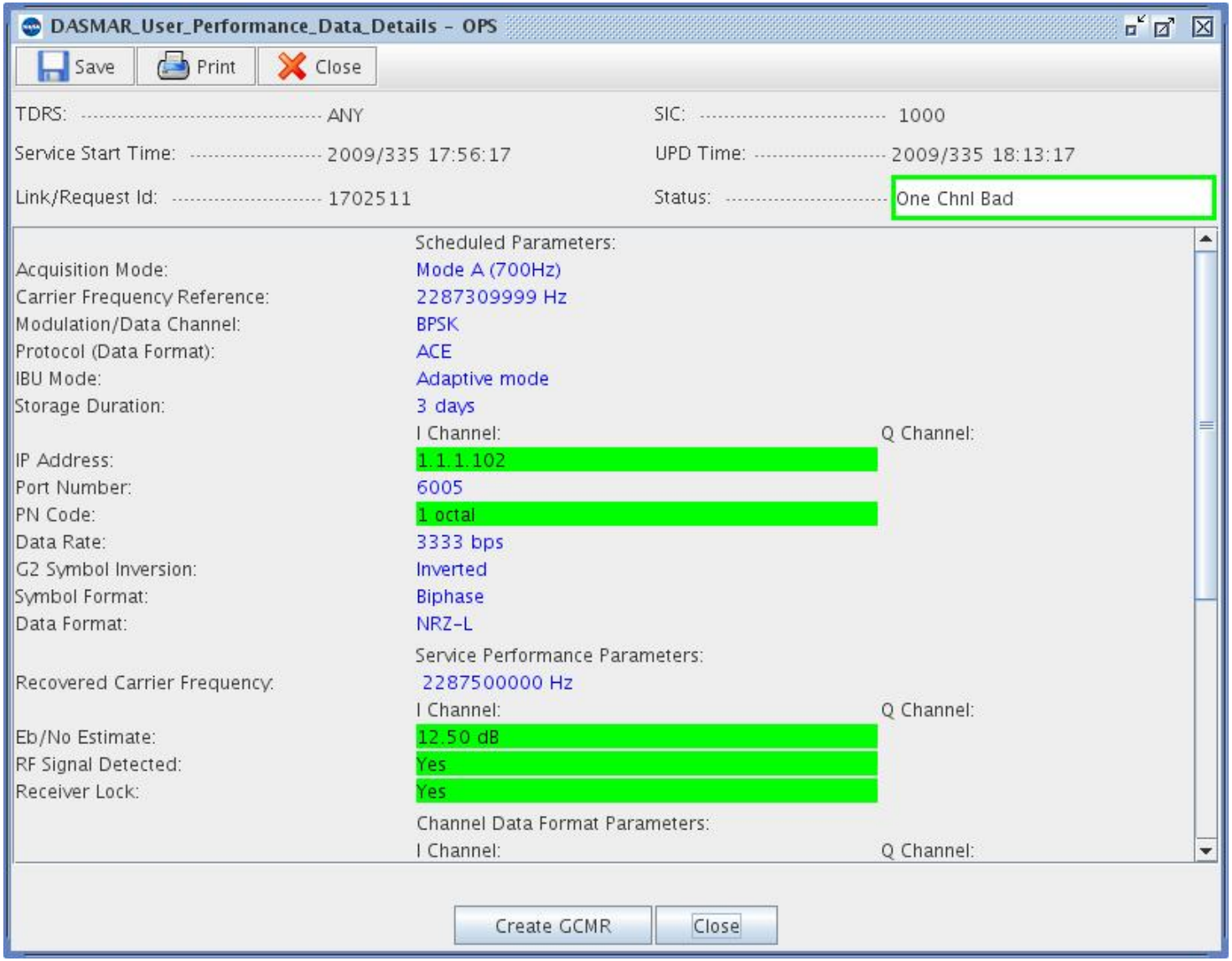
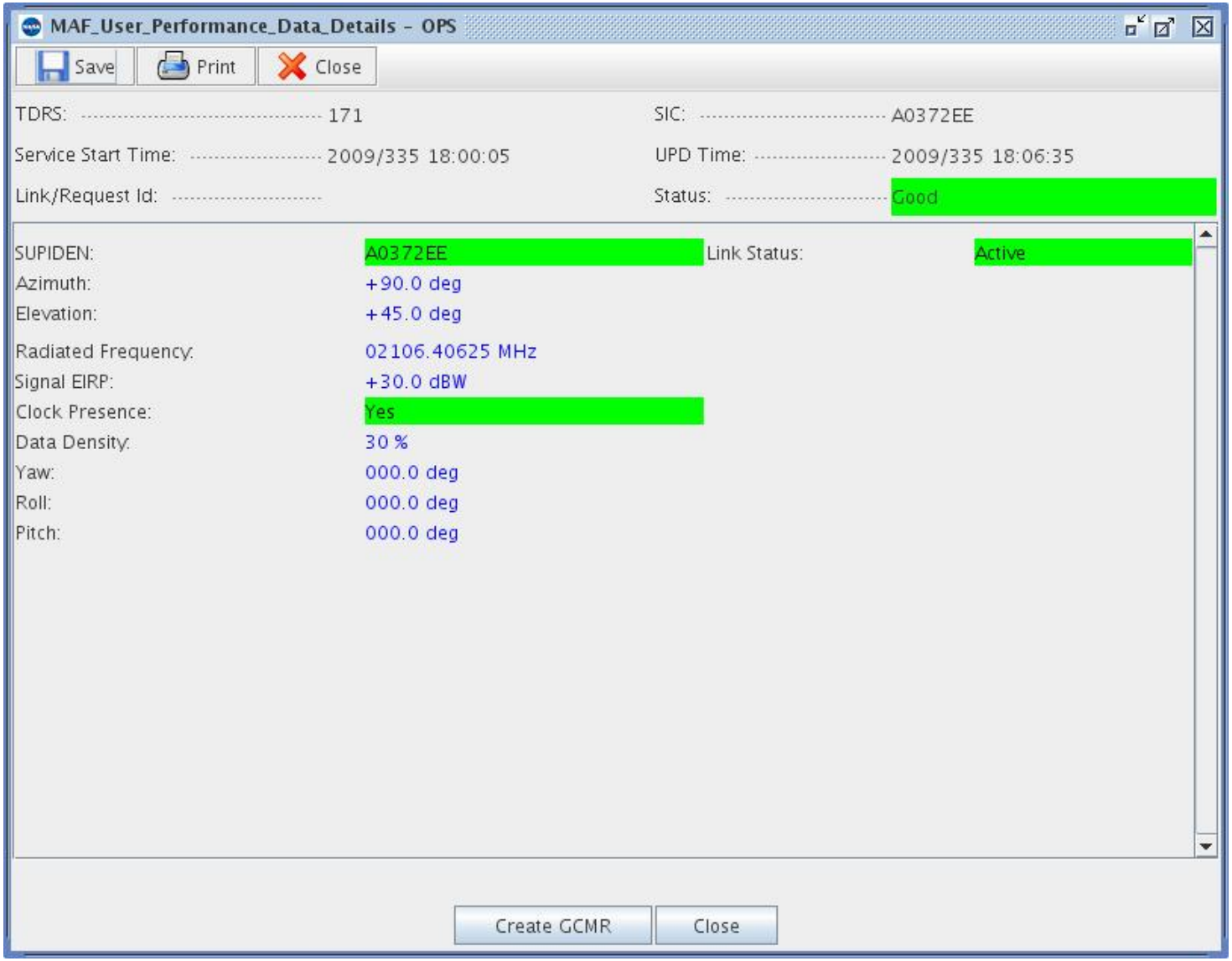


Figure 12.8. UPD Details Panel for MAF Service



The following table shows the color coding for the UPD Details Panel

Table 12.3. UPD Details Item Coding

Data Color	Description
Black	Label (static)
Blue	Non-limit checked parameter value
Green Shade	Limit-checked parameter value, data in good range
Yellow Shade	Limit-checked parameter value, data in marginal range

Red Shade	Limit-checked parameter value, data is out of tolerance or invalid

Button Selection

- **Create GCMR**- Calls the GCMR panel for the selected UPD
- **Close**- Closes the UPD Summary Selection panel and returns to the main control panel

Generate Formatted UPD Logs

Parameters in UPDs shown on the UPD Summary panel can also be formatted and written to UPD log files on the client workstation. The UPD logging is controlled via**UPDLogging, UPDLogDir, UPDArchiveDir, UPDMaxLogSize**parameters in the client.prop file. A sample UPD log file is shown below.

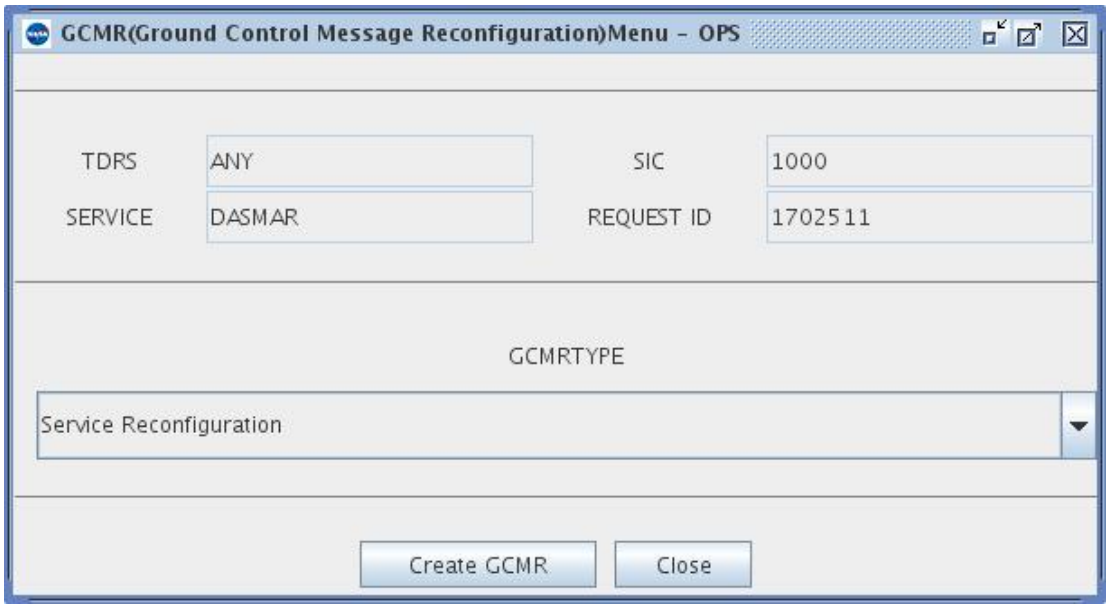
```
UPD   TimeTag="2008/274_210330"   SIC/Supiden="A0372EE"
ServiceType="SSAF"   TDRS="171"   AntennaLinkNumber="1"   Mode="OPS"
Signal_EIRP=+00.0   Data_Density=99   Link_Status=0
Time_Tag=08274210330   TDRS=171   PN_Modulation=1   Azimuth=+90.0
Polarization=0   Power_Mode=0   Radiated_Freq=02106.40625
TDRS_Yaw=000.0   SUPIDEN=A0372EE   Clock_Presence=1   Elevation=
+90.0   TDRS_Roll=000.0   TDRS_Pitch=000.0   Doppler_Comp=1   VIC=01 ENDUPD
UPD   TimeTag="2008/274_210330"   SIC/Supiden="A0372EE"   ServiceType="SSAR
DG1"   TDRS="171"   AntennaLinkNumber="1"   Mode="OPS"
Data_Coding_I=1   Symbol_Fmt_Conv_BI-NRZ_Q=0
Data_Format_Conv_Q=1   TDRS_Yaw=000.0   BER_Status_Q=1
Symbol_Fmt_Conv_BI-NRZ_I=0   Data_Format_Conv_I=1
BER_Status_I=1   Receiver_Coherency=1
IR_Signal_Strength=0000.0   Data_Channel_Config=0
Frames_in_Lock_Q=099   SSA_Combining=0   Clock_Presence_Q=0
IR_Lock=1   Frames_in_Lock_I=100   TDRS_Pitch=000.0
Dinterleaving=1   Range_Tracking_Status=1
Clock_Presence_I=1   Doppler_Tracking=1   VIC=01   Elevation=-
00.0   DG1_Configuration=2   Link_Status=0   TDRS_Roll=000.0
Frame_Sync_Mode_Q=0   Channel_Power_Ratio=+0.0   Azimuth=+00.0
Data_Density_Q=38   Frame_Sync_Mode_I=1
Symbol_Sync_Lock_Q=1   Receiver_Configuration=0
Data_Density_I=38   G2_Inversion_Q=1   Symbol_Sync_Lock_I=1
DG1_Mode=1   G2_Inversion_I=1   Frame_Sync_Word_BER_Q=1E-
05   Sync_Dropout_Count_Q=44444444   SUPIDEN=A0372EE   Frame_Sync_Word_BER_I=0E-
00   Data_Coding_Q=1   TDRS=171   Sync_Dropout_Count_I=33333333
Polarization=0   Time_Tag=08274210330 ENDUPD UPD   TimeTag="2008/274_210335"
SIC/Supiden="A0372EE"   ServiceType="SSAF"   TDRS="171"
AntennaLinkNumber="1"   Mode="OPS"   Signal_EIRP=+00.0
Data_Density=99   Link_Status=0   Time_Tag=08274210335
TDRS=171   PN_Modulation=1   Azimuth=+90.0   Polarization=0
Power_Mode=0   Radiated_Freq=02106.40625   TDRS_Yaw=000.0
SUPIDEN=A0372EE   Clock_Presence=1   Elevation=+90.0
TDRS_Roll=000.0   TDRS_Pitch=000.0   Doppler_Comp=1   VIC=01 ENDUPD
```

When the UPD logging function is enabled, all UPDs shown on the UPD Summary panel are appended to the end of a time-tagged disk file in the folder specified by the**UPDLogDir**property. The same file will continue to contain new UPDs until either the UPD Summary panel is closed or the maximum file size is reached. In those cases, the existing file will be closed and a new file opened.

Submit GCMR Panel

The Ground Control Message Request (GCMR) panel provides options for reconfiguring ongoing NCCDS services. This panel can be launched in three different ways. It can be launched from the UPD Details panel for the UPD/service currently displayed. The GCMR panel can also be launched from the UPD Summary panel once a UPD/service is selected on the panel. Finally, GCMR panel can be initiated from the Display Services sub-panel from the Active Schedule Summary panel.

Figure 12.9. GCMR Panel



Field Descriptions

Table 12.4. GCMR Panel Field Descriptions

Field	Description
TDRS	Associated TDRS station ID.
SUPIDEN	Support Identifier is a seven-character code used to identify the satellite or task being supported. It is broken into three parts: class, SIC, and function
Service	Type of service for the currently selected UPD

GCMR Type	The following selections are provided in the GCM Type menu: • Service Reconfiguration. (Will launch a service reconfiguration panel.) • User Reacquisition Request (NCCDS only). • Signal Reacquisition Request (DAS only). • Forward Link Sweep Request (NCCDS only). • Forward Link EIRP Reconfiguration – Normal Power (NCCDS only). • Forward Link EIRP Reconfiguration – High Power (NCCDS only). • Expanded User Frequency Uncertainty Request (NCCDS only). • Doppler Compensation Inhibit Request (NCCDS only).

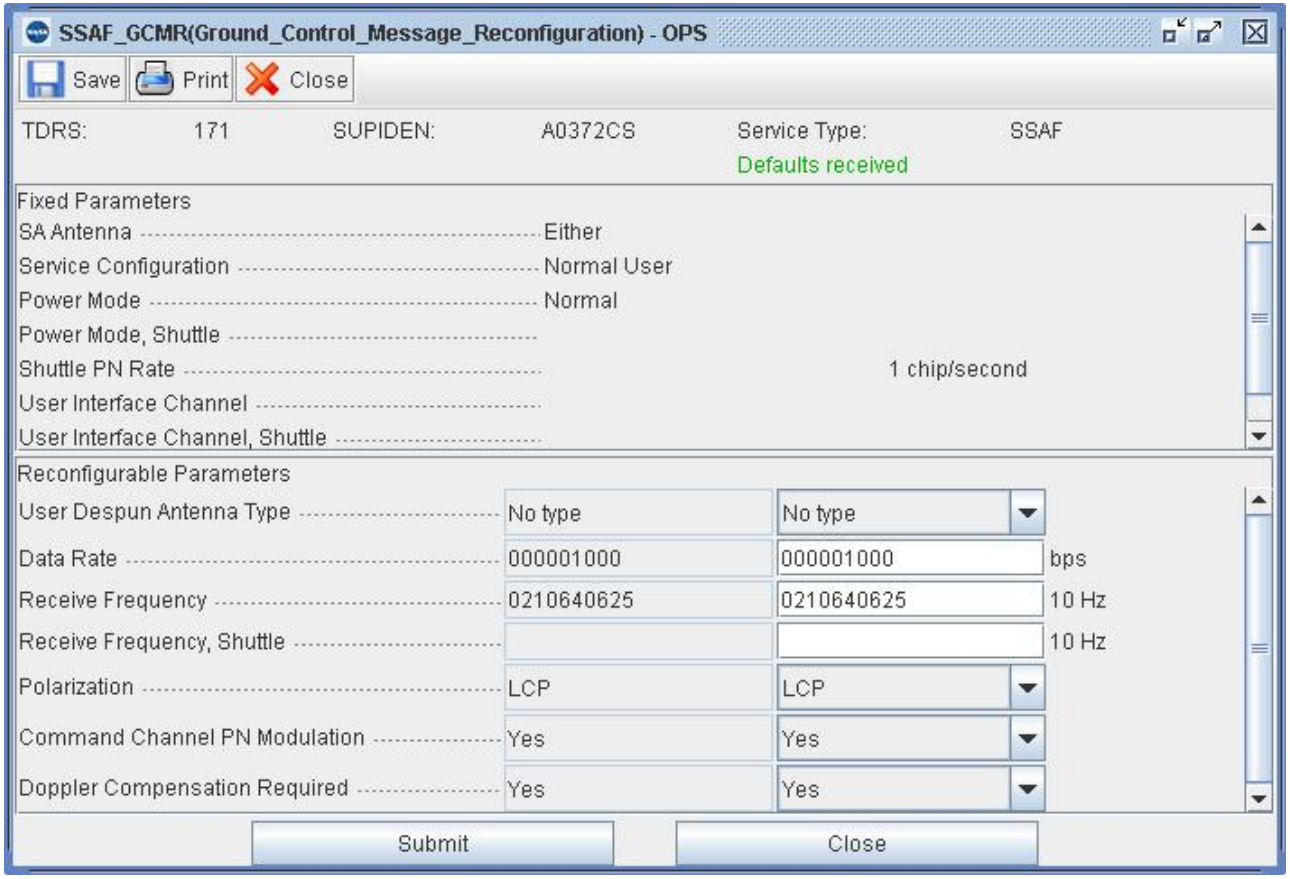
Button Selection

- **Create GCMR**- Submits the GCMR. If Service Reconfiguration is the selected type, then the GCMR Service Reconfiguration panel is displayed
- **Close**- Closes the GCMR panel and returns to the UPD Selection Summary panel

GCMR Service Reconfiguration Panel

Selection of Service Reconfiguration Request causes a Reconfigurable Parameters Panel similar to that shown below to appear. The panel title bar displays the service type the GCMR is for. The values in the left column in the Reconfigurable Parameters section reflect the initial values assigned when the service was scheduled, plus any changes that have occurred with subsequent reconfigurations. Changes are made by editing the values in the right column.

Figure 12.10. GCMR Service Reconfiguration Panel



GCMR Operation

With the exception of the Service Reconfiguration, selecting any one of these possible options and clicking Submit causes the request to immediately be sent to the SNAS server. In cases where a GCMR is submitted which is not appropriate for a given service, an error alert dialog box is displayed.

SNAS displays GCMR responses received from NCCDS and DAS on the Alert panel. For a GCMR submitted to NCCDS, NCCDS first responds with a GCM Disposition message indicating whether or not the message was successfully acknowledged by the White Sands Complex (WSC), followed by a GCM Status message indicating whether the GCMR was accepted or rejected. If rejected, a reason for rejection is given as defined by the reject codes in Table 8-13 of the 452-ICD-SN/CSM. For a GCMR submitted to DAS, DAS responds with either a Service Reconfiguration response or a Signal Reacquisition response. Refer to Tables 5-30, 5-31, 5-33, and 5-34 of the 452-ICD-SNAS/DAS for details on the DAS responses.

Chapter 13. Reports & Queries Menu Selections and Panel Descriptions

Table of Contents

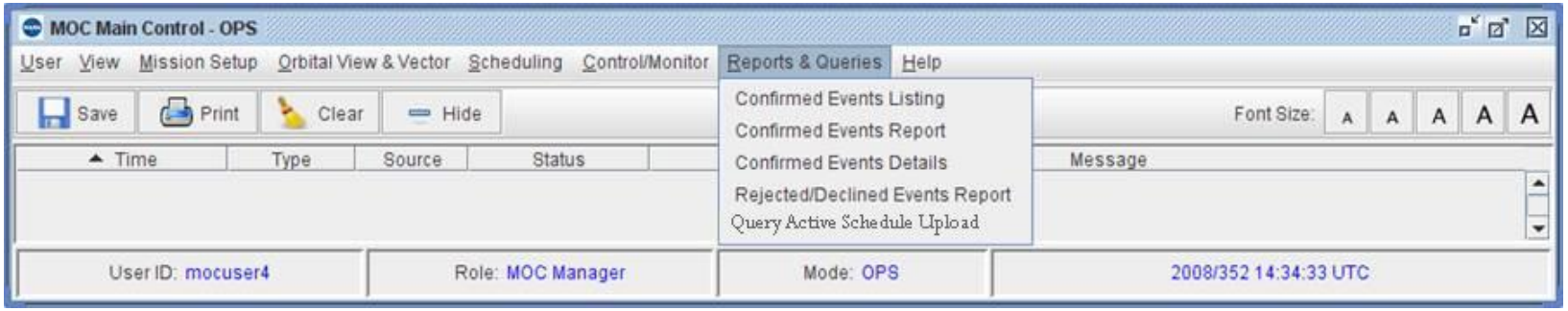
Reports & Queries Menu

Reports
Query Active Schedule Upload

Reports & Queries Menu

The Reports and Queries menu options, available for all user roles except for the Observer role, are intended to be used to generate various reports and to query certain data stored in the SNAS database.

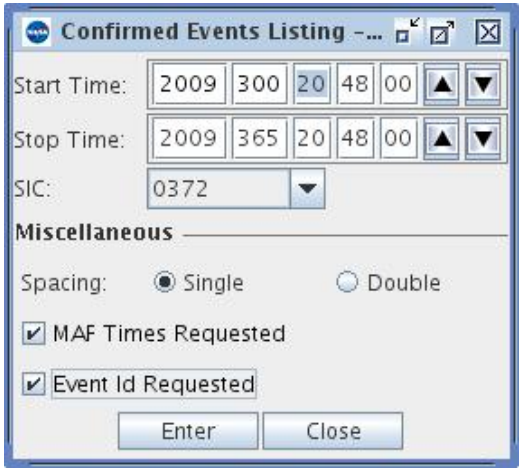
Figure 13.1. Reports & Queries Menu



Reports

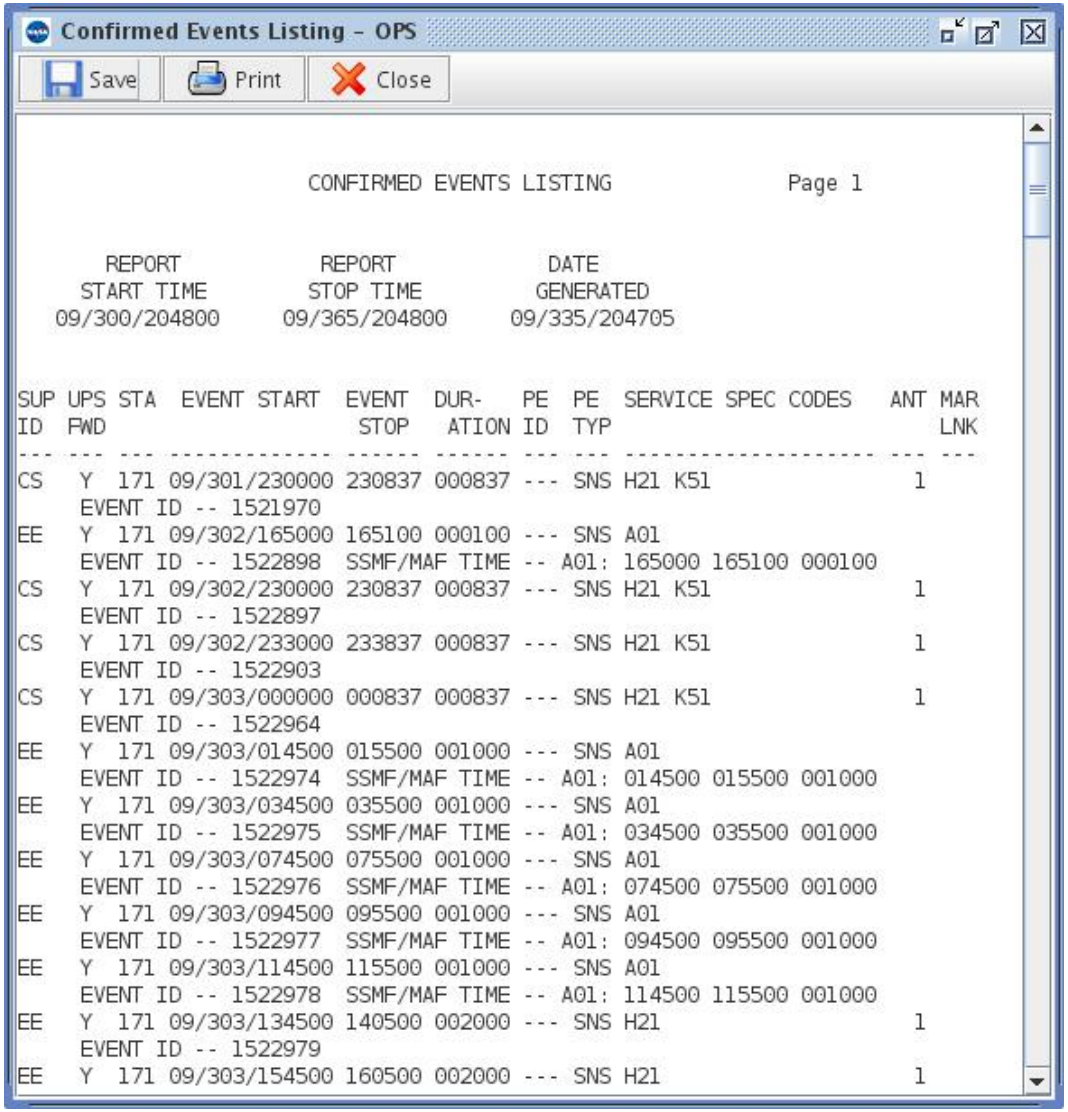
The four reports -- Conformed Events Listing, Conirmed Events Report, Confirmed Events Details and Rejected/ Declined Event Report -- are intended to summarize certain NCCDS schedules/events stored in the SNAS database. When a report request is made, a data selection panel appears. A time range and a SIC is required for all reports. In addition, the user can specify if single or double spacing is preferred, if Event Id should be included, and if MAF Times are to be included when requesting the Confirmed Events Listing.

Figure 13.2. Confirmed Events Listing Selection Panel



When generated, a report is displayed on the client monitor with Print and Save utility buttons at the top of the report. A Confirmed Event Listing lists all events and associated SSCs for each event granted by NCCDS that meet the selection criteria. A Confirmed Events Report contains all information in the Confirmed Event Listing plus start and stop times for each service. Confirmed Events Details provides most detailed information on granted events that meet the selection criteria. Information contained in a Confirmed Event Report includes events, associated services and all fixed and respecifiable parameters in each service. The Rejected/Declined Report lists all requests that have a Rejected or Declined status in the SNAS database. Refer to Schedule Request Status subsection under the Schedule Request Summary section for details on descriptions of schedule request status. Examples of the four reports available on SNAS are shown below:

Figure 13.3. Confirmed Events Listing




```
                    CONFIRMED EVENTS LISTING              Page 1


      REPORT           REPORT            DATE
    START TIME        STOP TIME        GENERATED
  09/300/204800     09/365/204800     09/335/204705


SUP UPS STA  EVENT START  EVENT  DUR-   PE  PE  SERVICE SPEC CODES   ANT MAR
ID  FWD                    STOP   ATION ID  TYP                        LNK
--- --- --- ------------- ------ ------ --- --- -------------------- --- ---
CS   Y  171 09/301/230000 230837 000837 --- SNS H21 K51                1
     EVENT ID -- 1521970
EE   Y  171 09/302/165000 165100 000100 --- SNS A01
     EVENT ID -- 1522898  SSMF/MAF TIME -- A01: 165000 165100 000100
CS   Y  171 09/302/230000 230837 000837 --- SNS H21 K51                1
     EVENT ID -- 1522897
CS   Y  171 09/302/233000 233837 000837 --- SNS H21 K51                1
     EVENT ID -- 1522903
CS   Y  171 09/303/000000 000837 000837 --- SNS H21 K51                1
     EVENT ID -- 1522964
EE   Y  171 09/303/014500 015500 001000 --- SNS A01
     EVENT ID -- 1522974  SSMF/MAF TIME -- A01: 014500 015500 001000
EE   Y  171 09/303/034500 035500 001000 --- SNS A01
     EVENT ID -- 1522975  SSMF/MAF TIME -- A01: 034500 035500 001000
EE   Y  171 09/303/074500 075500 001000 --- SNS A01
     EVENT ID -- 1522976  SSMF/MAF TIME -- A01: 074500 075500 001000
EE   Y  171 09/303/094500 095500 001000 --- SNS A01
     EVENT ID -- 1522977  SSMF/MAF TIME -- A01: 094500 095500 001000
EE   Y  171 09/303/114500 115500 001000 --- SNS A01
     EVENT ID -- 1522978  SSMF/MAF TIME -- A01: 114500 115500 001000
EE   Y  171 09/303/134500 140500 002000 --- SNS H21                   1
     EVENT ID -- 1522979
EE   Y  171 09/303/154500 160500 002000 --- SNS H21                   1
```

Figure 13.4. Confirmed Events Report

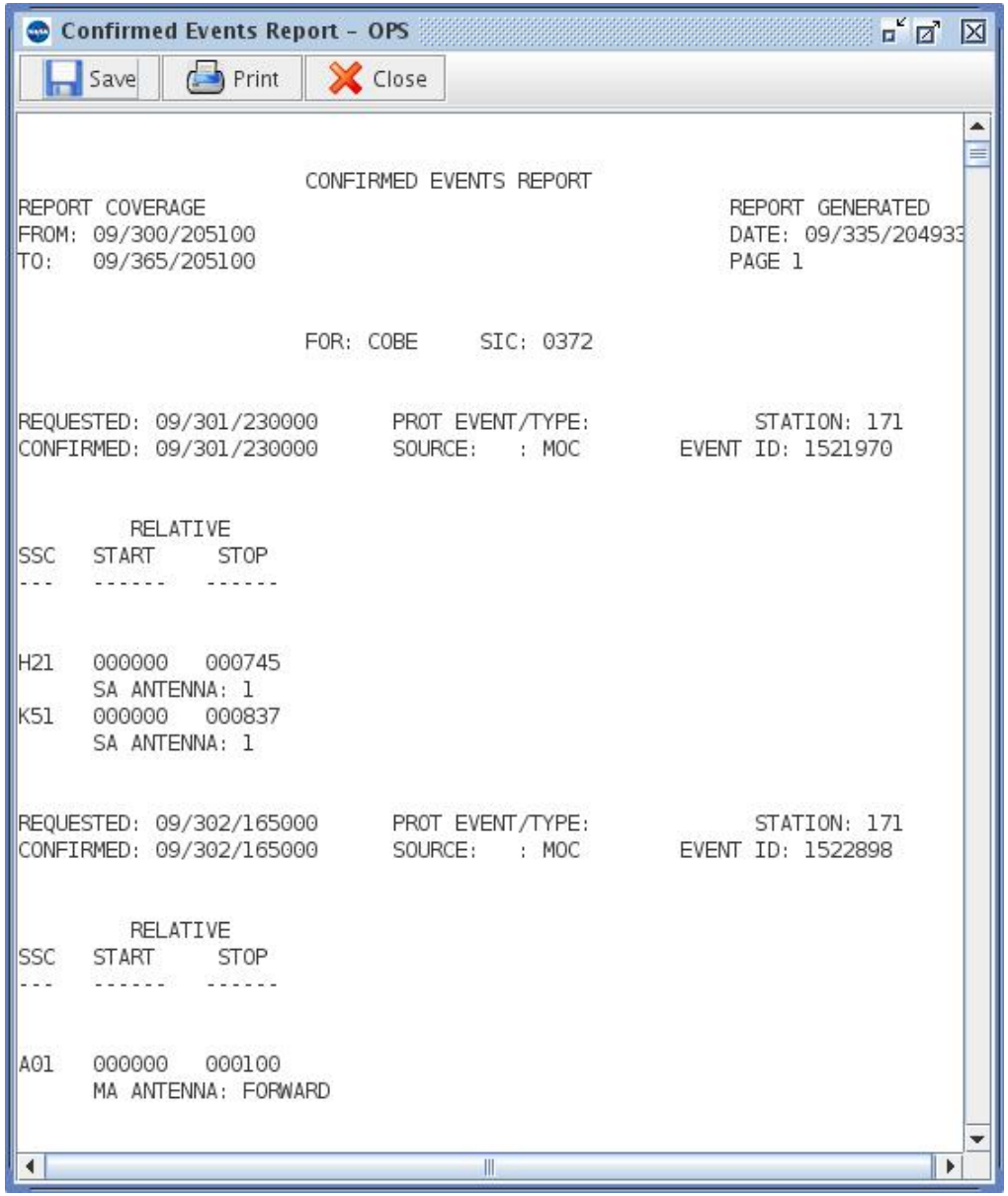
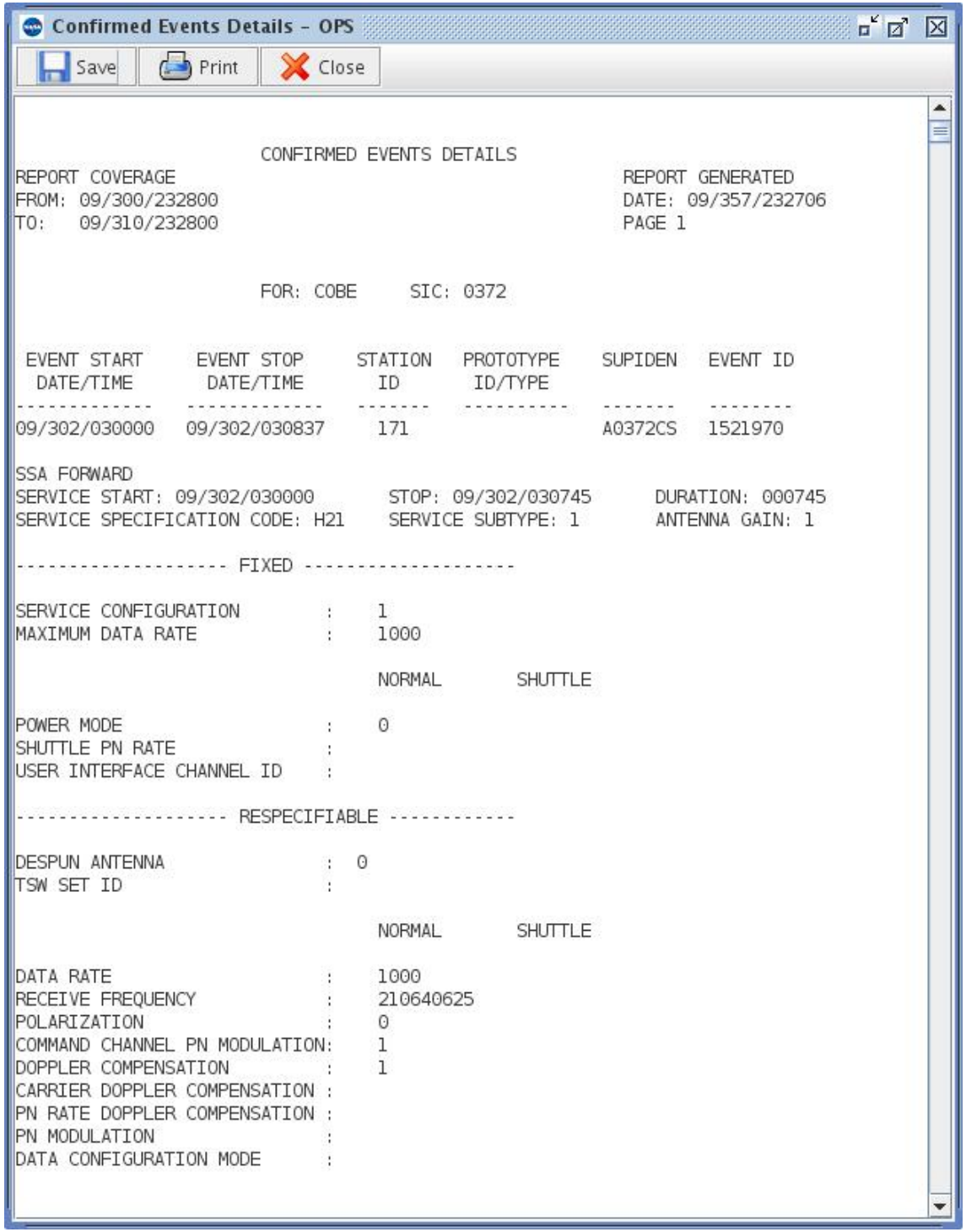
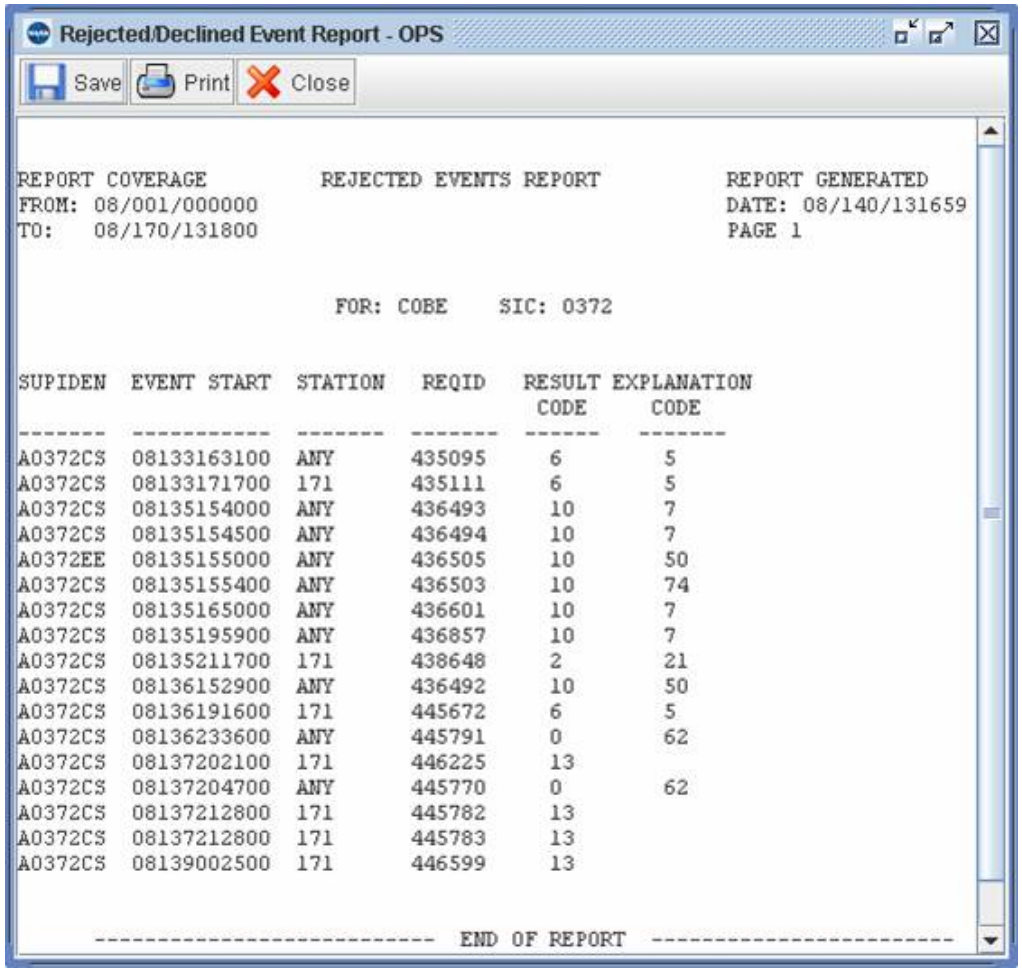


Figure 13.5. Confirmed Events Details




```
                        CONFIRMED EVENTS DETAILS
REPORT COVERAGE                                          REPORT GENERATED
FROM: 09/300/232800                                      DATE: 09/357/232706
TO:   09/310/232800                                      PAGE 1


                        FOR: COBE     SIC: 0372


 EVENT START     EVENT STOP     STATION   PROTOTYPE    SUPIDEN   EVENT ID
  DATE/TIME       DATE/TIME       ID       ID/TYPE
-------------   -------------   -------   ----------   -------   --------
09/302/030000   09/302/030837    171                   A0372CS   1521970

SSA FORWARD
SERVICE START: 09/302/030000       STOP: 09/302/030745      DURATION: 000745
SERVICE SPECIFICATION CODE: H21    SERVICE SUBTYPE: 1       ANTENNA GAIN: 1

-------------------- FIXED --------------------

SERVICE CONFIGURATION        :    1
MAXIMUM DATA RATE            :    1000

                                  NORMAL       SHUTTLE

POWER MODE                   :    0
SHUTTLE PN RATE              :
USER INTERFACE CHANNEL ID    :

-------------------- RESPECIFIABLE ------------

DESPUN ANTENNA               :  0
TSW SET ID                   :

                                  NORMAL       SHUTTLE

DATA RATE                    :    1000
RECEIVE FREQUENCY            :    210640625
POLARIZATION                 :    0
COMMAND CHANNEL PN MODULATION:    1
DOPPLER COMPENSATION         :    1
CARRIER DOPPLER COMPENSATION :
PN RATE DOPPLER COMPENSATION :
PN MODULATION                :
DATA CONFIGURATION MODE      :
```

Figure 13.6. Rejected/Declined Events Report



REPORT COVERAGE REJECTED EVENTS REPORT REPORT GENERATED
FROM: 08/001/000000 DATE: 08/140/131659
TO: 08/170/131800 PAGE 1

FOR: COBE SIC: 0372

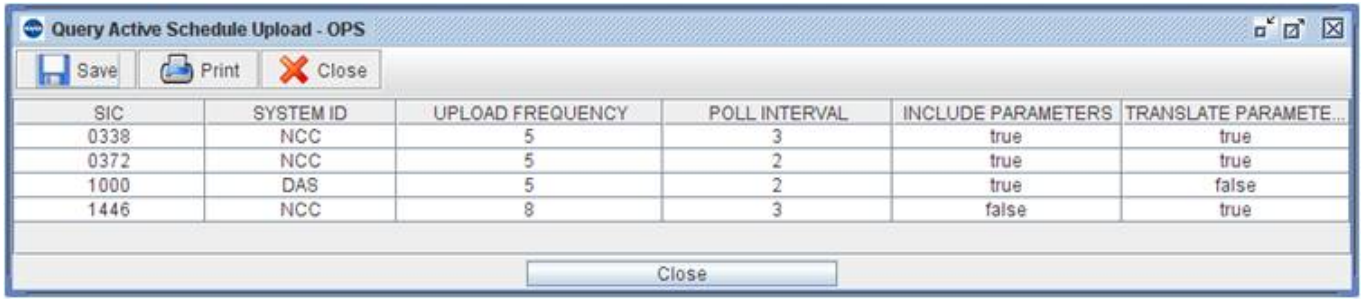
SUPIDEN	EVENT START	STATION	REQID	RESULT CODE	EXPLANATION CODE
A0372CS	08133163100	ANY	435095	6	5
A0372CS	08133171700	171	435111	6	5
A0372CS	08135154000	ANY	436493	10	7
A0372CS	08135154500	ANY	436494	10	7
A0372EE	08135155000	ANY	436505	10	50
A0372CS	08135155400	ANY	436503	10	74
A0372CS	08135165000	ANY	436601	10	7
A0372CS	08135195900	ANY	436857	10	7
A0372CS	08135211700	171	438648	2	21
A0372CS	08136152900	ANY	436492	10	50
A0372CS	08136191600	171	445672	6	5
A0372CS	08136233600	ANY	445791	0	62
A0372CS	08137202100	171	446225	13	
A0372CS	08137204700	ANY	445770	0	62
A0372CS	08137212800	171	445782	13	
A0372CS	08137212800	171	445783	13	
A0372CS	08139002500	171	446599	13	

---------- END OF REPORT ----------

Query Active Schedule Upload

The Query Active Event Upload menu option is used to view parameters stored in the SNAS database that control the transmission from the server and saving of active event information on the client.

Figure 13.7. Query Active Event Upload Panel



SIC	SYSTEM ID	UPLOAD FREQUENCY	POLL INTERVAL	INCLUDE PARAMETERS	TRANSLATE PARAMETE...
0338	NCC	5	3	true	true
0372	NCC	5	2	true	true
1000	DAS	5	2	true	false
1446	NCC	8	3	false	true

The Upload Frequency defines the interval, in minutes, at which the server perform a query into SNAS database or DAS to retrieve all active event information. The information is transmitted to the client and is formatted and written to the Active Event Upload file (see Scheduling/Scheduling Tools/Active Events Summary/Automated Active Event Upload section for sample files.) The Poll Interval defines the interval, also in minutes, at which the server performs a query into SNAS database or DAS to determine if any changes to active events since last transmission have occurred. If there have been changes, the server sends the active events information to the client and the client writes to the Active Event Upload file.

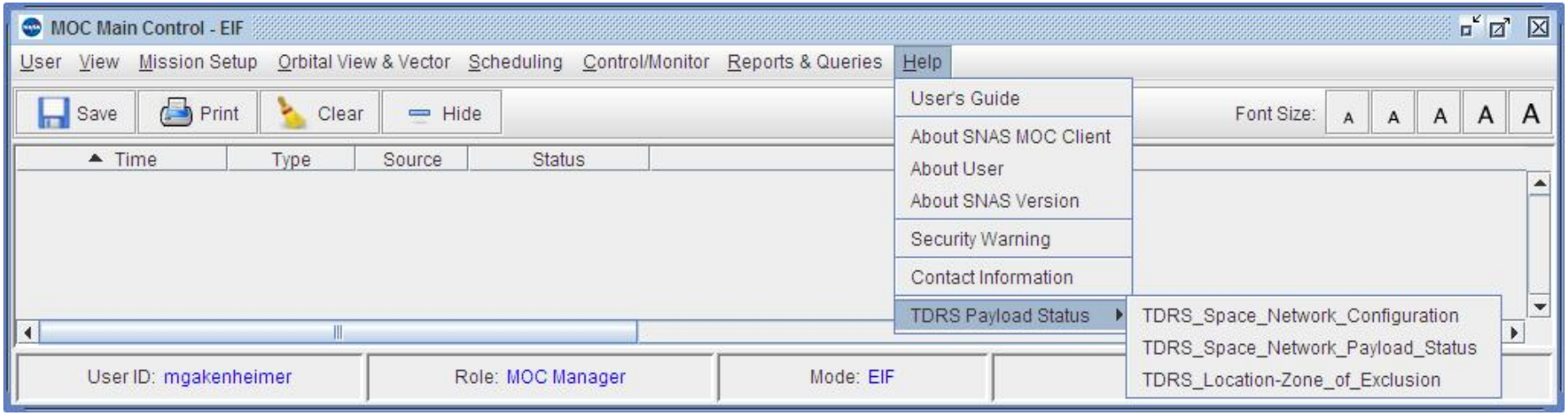
Chapter 14. Help Menu Selections and Panel Descriptions

Table of Contents

Help Menu
SNAS User's Guide
About SNAS MOC Client
About User
Security Warning
About SNAS Version
Contact Information
TDRS Payload Status

Help Menu

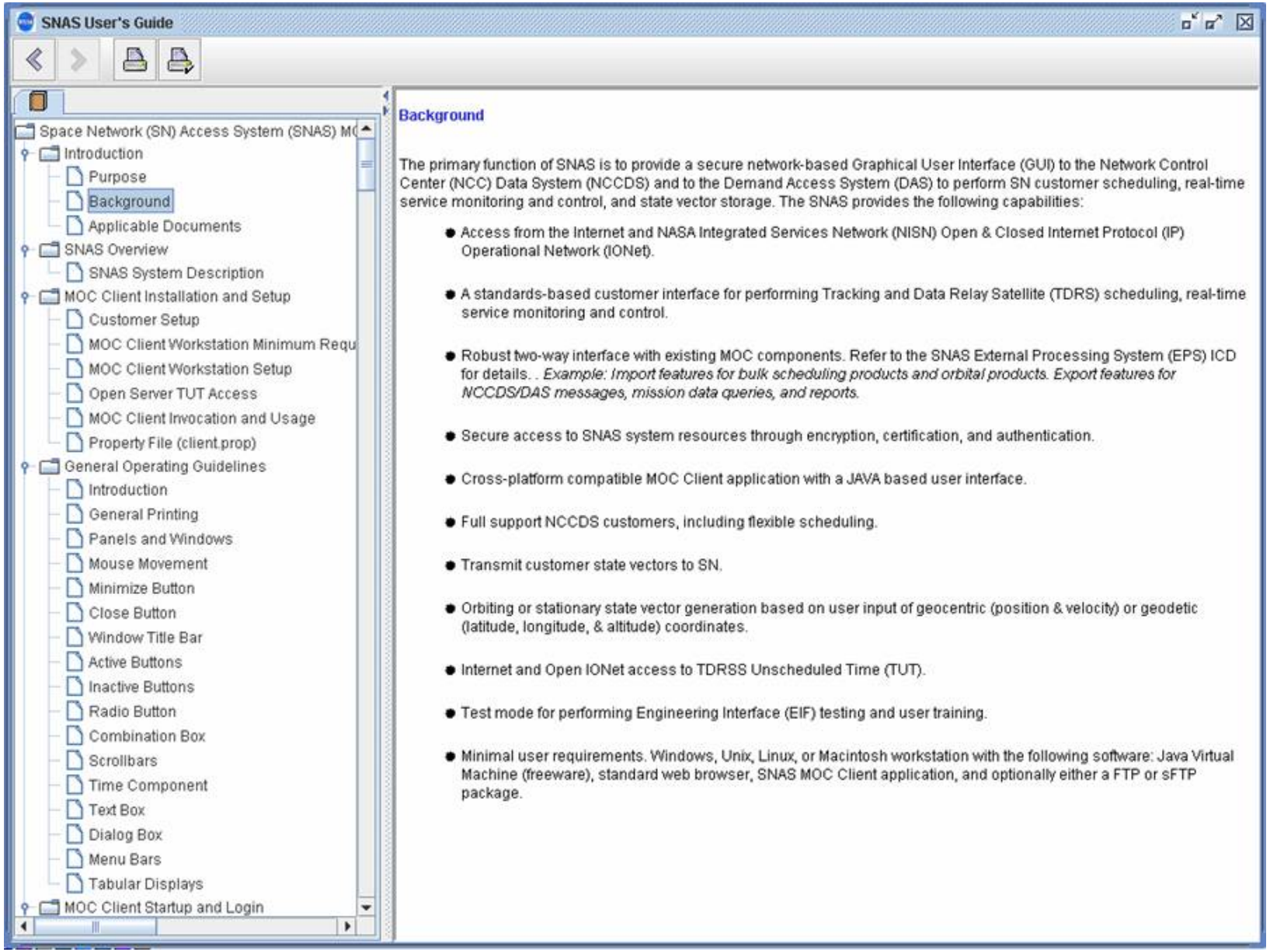
Figure 14.1. Help Menu



SNAS User's Guide

This Space Network Access System (SNAS) MOC Client Software User's Guide provides instructions for operating the SNAS MOC Client software in support of SN customer mission operations. This panel can be generated with each build as opposed to actively maintaining the data in SNAS. This item is an indexed HTML document.

Figure 14.2. SNAS Users' Guide



About SNAS MOC Client

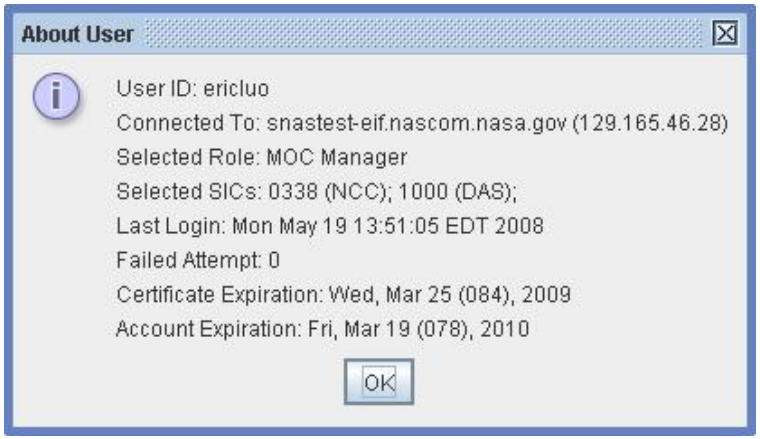
The About SNAS MOC Client option provides top level over view of SNAS capabilities. Checking "OK" closes the dialog box.

Figure 14.3. About MOC Client Panel

About User

The About User menu option provides information about the user's current login session, including User ID, SNAS Server name and IP address, mode, and SIC selections. Clicking OK closes the About User dialog box.

Figure 14.4. User Panel



Security Warning

The Security Warning menu option displays the Security Warning Banner, the same banner a user sees during the Login.

Figure 14.5. Security Warning

About SNAS Version

The SNAS Client Version menu option displays the SNAS Client version, shown in the following figure. Clicking OK closes the panel and allows the user to continue.

Figure 14.6. SNAS Client Version Panel

Contact Information

The Contact Information menu option displays the SNAS contact phone numbers and emails for various functions, shown in the following figure.

Figure 14.7. Contact Information Panel

TDRS Payload Status

SNAS has attached the three commonly used reports on TDRS payload status: TDRS Space Network Configruation; TDRS Space Network Payload Status; and TDRS Location Zone of Exclusion. By clicking on anyone of the three names, a jpg file will be dropped in the user's SNAS folder. By double clicking on the file name, it will be opened by the user's default program handling jpg files.