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SOFTWARE USER MANUAL (SUM)

EGOS DATA DISSEMINATION SYSTEM (EDDS)

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TABLE OF CONTENTS

1 Introduction

1.1 Purpose

This document provides the EDDS Software User Manual. Not every single option from the request form is described in detail. The requests that are considered self-explanatory are not described.

1.2 Scope

This scope of this document is the usage of the software.

1.3 Document Overview

Section 1 - Introduction (this section) provides the purpose, scope and this document's overview.

Section 2 - References provides the list of reference documents.

Section 3 - Glossary provides a list of acronyms and terms used throughout this document.

Section 4 – This section presents an overview of the EDDS Software.

Section 5 – This section presents the Client Application usage instructions.

Section 6 – This section provides a more detailed overview of the user interface and how to use it.

Appendix A – The Client Application errors and recovery procedures.

Appendix B – This section contains examples on particular data types that are used in the Client Applications Forms.

Appendix C – The complete list of forms.

2 References

2.1 Applicable documents

Ref.	Document Title	Issue and Revision, Date
[AD-1]	Software Requirements Specification (SRS) for the EDDS, [EGOS-GEN-EDDS-SRS-1001]	Issue 18.0 2018-02-16
[AD-2]	EXTERNAL USER INTERFACE CONTROL DOCUMENT (EUICD) [EGOS-GEN-EDDS-ICD-1001_EUICD]	Issue 15.0 2018-02-16
[AD-3]	SOFTWARE DESIGN DOCUMENT (SDD) [EGOS-GEN-EDDS-SDD-1001]	Issue 13.0 2017-05-05

2.2 Reference documents

Ref.	Document Title	Issue and Revision, Date
[RD-1]	EDDS Configuration and Installation Guide [EGOS-GEN-EDDS-CIG-1001]	Issue 14.0, 2018-02-16
[RD-2]	SCOS-2000 TM Data Retrieval Services SRD [S2K-MCS-SRD-0004-TOS-GIC]	Issue 3.1, 2003-08-29
[RD-3]	EGOS High Level Architectural Design Document [EGOS-GEN-GEN-SAD-1001-i0r0]RID494 RID529	0.0DraftC, 2005-05-15

3 Glossary

3.1 Acronyms

Acronyms	Description
APID	Application Identifier
ASCII	American Standard Code for Information Interchange
CCSDS	Consultative Committee for Space Data Systems
CDR	Critical Design Review
CIG	Configuration and Installation Guide
CUC	CCSDS Unsegmented Code
DARC	Data Archive
DDID	Data Definition Interface Document
DVD	Digital Video Disc (Digital Versatile Disc)
EDDS	EGOS Data Dissemination System
ESA	European Space Agency
EGOS	ESA Ground Operations System
ERT	Earth Reception Time (Note: SCOS-2000 uses the SCOS-2000 reception time stamp and not the ground station reception time stamp.)
EV	Event (Mission control system event)
HTTP	Hypertext Transfer Protocol
HTTPS	HTTP over Secure socket layer
MAS	Mission Automation System
MCS	Mission Control System
MHz	Megahertz
MUST	Mission Utility & Support Tool
OBEV	On-board Event
OBQ	On-board Queue
OBSM	On-board Software Maintenance
OBT	On-board Time
OOL	Out Of Limit
PID	Process Identifier
PUS	Packet Utilisation Standard

RAM	Random Access Memory
SCOS	Spacecraft Control and Operations System
SMTP	Simple Mail Transfer Protocol
SMTPs	Simple Mail Transfer Protocol Secure
SOAP	*Originally* - Simple Object Access Protocol - *but since version 1.2 it has no official meaning*
SPID	SCOS-2000 Packet Identifier
SUM	Software Users Manual
TC	Telecommand
TM	Telemetry
WSDL	Web Services Description Language
XFDU	XML Formatted Data Unit
XML	Extensible Mark-up Language
XSL	Extensible Stylesheet Language
XSLT	XSL Transformations

3.2 Definition of Terms

SCOS-2000 Terms are defined in [RD-2]. EGOS definitions are specified in [RD-3].

Term	Description
Batch Service	An EDDS service that allows a user or client application to make a request for mission data and receive a (single) response from the EDDS that contains the complete set of data requested.
Stream Service	An EDDS service that allows a client application to receive a continuous stream of mission data rather than a finite stored data set.
SCOS-2000	SCOS-2000 is a generic configurable spacecraft control and monitoring system with multi-domain and multi-mission capabilities, which operates in a scalable distributed environment. It is intended to be taken by client missions and customised to meet their specific requirements. At the time of writing this document SCOS-2000 release 5 is expected to be the baseline.

Web Services	Web services provide a standard means of interoperating between different software applications, running on a variety of platforms and/or frameworks. Web services are characterized by their great interoperability and extensibility, as well as their machine-processable descriptions thanks to the use of XML. They can be combined in a loosely coupled way in order to achieve complex operations. Programs providing simple services can interact with each other in order to deliver sophisticated added-value services. [quoted from W3C Web services Activity Statement - http://www.w3.org/2002/ws/Activity]
SCOS-2000 Domain	The controlled or controlling entity whose packet data is stored in a dedicated SCOS-2000 multi-domain archive. For example, a spacecraft or a ground station or a controlling domain such as System Control. Each individual spacecraft will be mapped to a specific domain. Each domain will have its own instance of SCOS-2000. Taken from [RD-3].
SCOS-2000 Packet Identifier (SPID)	The identifier of the history file containing all instances of a SCOS-2000 packet. This is unique for each packet type (TM, TC and EV). In the telemetry processing, the SPID is also used as the unique identifier of the packet content for fixed packets. Taken from [RD-3].
SCOS-2000 DataStream	A logical grouping of SCOS-2000 history files used to partition the historical data and to enable the selective retrieval and processing of them. Also refers to a stream of telemetry transfer frame data received by the SCOS-2000 Packetiser. Taken from [RD-3].
SCET	Used in this document to indicate the value of the counter from the spacecraft's onboard clock (i.e. an integer value).

4 Overview

4.1 EDDS Introduction

The EDDS provides controlled access to mission data for users who do not have access to the mission control system (MCS) monitoring and control facilities. The data includes telemetry, science and non-science data, telecommand history data, and auxiliary data such as flight dynamics data and data report.

The EDDS provides services that users can access through various client applications. [AD-1] provides background information to the history of the EDDS.

4.2 EDDS Client applications

4.2.1 Standalone EDDS MMI

EDDS provides a standalone client application in order to access its services. The client application can be downloaded on the EDDS Web Page specific of the mission and can be started as a normal Eclipse application. The EDDS client is based on EUD and Eclipse RCP. It is available for Windows and SLES 11.

The functionalities of the EDDS Client Application are described in the section 6.1

4.2.1.1 EDDS Client Application Requirements

4.2.1.1.1 Minimum Hardware Requirements

- 200MB of available hard disk space;
- 2 GB RAM;
- Keyboard and compatible pointing device;
- Video adapter and monitor with Super VGA (1024 x 768) or higher resolution;
- A compatible network interface adapter.

The operating system being used may have higher requirements.

4.2.1.1.2 Software Requirements

- Microsoft® Windows® 7 (other Windows versions may work, but are not supported) or
- SLES 12 (any GNU/Linux system with Linux kernel 2.2 or higher may work, but are not supported);
- Java version 1.8.0_72 (the latest security patched version of Java is recommended);
- macOS (although not supported)

4.2.1.1.3 Firewall Requirements

The EDDS Client Application communicates to the web server on the port it is configured to listen on. Typically this is TCP/IP port 8080 for Tomcat web servers, but this can be changed on the server side. The client firewall should allow communication on this port for the application to operation correctly.

4.2.1.1.4 Proxy Servers

The EDDS Client Application needs special configuration if a proxy server is being used to connect to the EDDS Web Server. See Section 6.1.1.1.1 for details.

4.2.2 EDDS MMI Web Application

EDDS also provides a web application that implements mostly the same functionality as the standalone application. There are a few differences which will be discussed in Section 6.2

4.3 EDDS Web Page

A web page will be provided by each mission and provides the following information and data:

- A link to the EDDS Client application so that end users can download and install the application to use EDDS services;
- A link to the EDDS documentation;
- Status updates for the availability of EDDS Services and information about any planned downtimes. The status can be updated by editing the file ‘status.txt’ within the folder ‘/webapps/edds’. Any text will be output to the content area of the EDDS status page, full XHTML tags are supported.
- When EDDS web service is redeployed, the ‘status.txt’ file will be overwritten. Copy and backup the file if previous status information is required.
- A link to EDDS Client application runtime downloads along with the MD5 checksum for downloadable package verification.

The EDDS web site conforms to the ESA image identity principles.

Note that it is necessary to first accept the licence agreement before any of the download links on the site work. The acceptance of the licence agreement is saved for the current browser session. The next time the site is accessed, it will be necessary to accept the licence agreement again.

4.4 EDDS Client APIs

In order to access the EDDS Web Services an application has to implement the needed interfaces to the EDDS WSDL. The EDDS Client APIs is a Java library that implements the WSDL interfaces and provides a façade that can be used by any client application.

Some examples on the usage of the library are described in the EUICD document [AD-03]

4.5 Software Scope

As defined in the SRS [AD-01] and SDD [AD-04]

4.5.1 Involved Principles

N/A

4.5.2 Software Functionalities

The software provides the functionalities needed to perform batch request and user management request, as described in the document [AD-01] and asynchronous push notifications.

4.5.3 Requisite

N/A

5 Quick Start Guide

5.1 Setting up user access for a blank mission

This will guide through a process to set up a user access for a mission with no configured sub-objects.

All the actions can be done through the User Management View by right-clicking on appropriate subsection of the mission to create a new object or double-clicking on existing one to open it. To save an object or to update the changes, click the Save button in the upper toolbar or press Ctrl+S.

To get a more detailed description of each of the sections and their functions, read Section 6.1.3.

5.1.1 Setting up the mission

1. Create a new ***Data Access Set*** to define which data sources and requests the user is going to be able to issue. Save it.
2. Optionally, create an ***Operation Data Set*** to enable User management or Scheduled requests for the user. Save it.
3. Optionally, create a ***Quota Set*** to restrict the usage of EDDS with certain number of requests, limit the disk usage or set specific SPID, APID and/or parameter name restrictions. Save it.
4. Create a new ***Role***.
    a. Assign the Data Access Set to the role
    b. Optionally, assign the Operation Data Set to the new role
    c. Optionally, assign the Quota Set to the new role
    d. Optionally, assign a priority to the new role
    e. Save the role.

5.1.2 Assign the role to the user

There are two ways a user can be associated with a role. Either directly assign a role to a user or create a group that can combine several roles and assign it to user(s).

To assign a role directly to the user:

1. Open the user details by creating a new user or opening an existing user
2. In the ***Missions and Roles*** section check the mission checkbox and the desired role.
3. Save the user details

Alternatively, to assign a role through a group:

- Create a new group for the mission
    1. Include the role in the group role list
    2. Assign user to the group
    3. Save the group

5.2 Batch Request types

EDDS supports batch requests to 3 data archives: FARC, DARC and PARC as well as EDDS reports. PARC data can be obtained via the PARC Manager, the Data Provision Services or via SMON.

5.2.1 FARC Requests

Archive File – returns the files that match the filtering criteria

Archive Catalogue – returns the list of files with their type, creation time, release and issue, in the catalogue

Archive Subscription – allows a subscription to items in the FARC so that when the items in the FARC change, EDDS will automatically download the new version or send an e-mail notification, depending on the options chosen in the request.

5.2.2 DARC Requests

Parameter – returns parameters, their timestamps and values

Parameter Definition – returns all the available parameters with description, type, unit for the mission

Parameter Preview – returns the list of parameters with their description, number of samples and date of last update matching the request criteria.

Parameter Statistics – returns the statistics records with statistic start time, storage time, min, max, average, standard deviation, number of valid and invalid samples of the parameter samples

All DARC requests expect Parameter Definition provide option to user to select DARC data space to use. By default data space configured in EDDS server is used if request is not specifying any other.

5.2.3 PARC Requests

Packet TM – returns the raw packet data, with the headers and data as specified in the EDDS header configuration file (see the Configuration and Installation Guide (CIG) [RD-1]).

Packet TM Raw PARC data – returns the raw packet data, exactly as stored in the PARC, in an XML document with each packet in its own XML element.

Packet TM Report – returns the packets' header data (SPID, Apid, Type, Subtype, Datastream, generation and reception times etc.), packet raw data and length.

If the output format is RAWSOURCEBINARY, then the output will be a binary file of the uninterrupted flow of the content of RawBodyData.

Packet TM Gap Report – returns the gaps found in the telemetry data from the PARC. Requires SCOS 5.4.18 or later or SCOS 5.5.2 or later.

Packet TM Statistics – returns the number of packets, timestamps of the first and last packet and the data volume size of the Packet TM request with the same filtering parameters.

Packet TC – returns the raw packet data, with the headers and data as specified in the EDDS header configuration file (see the Configuration and Installation Guide (CIG) [RD-1]).

Packet TC Raw PARC data – returns the raw packet data, exactly as stored in the PARC, in an XML document with each packet in its own XML element.

Packet TC Report – returns the command packets with their data and parameters. The report can be an XML format for use with other applications, or an ASCII format, which matches the information shown in the TC History application within SCOS. An explanation of the output for this format can be found in the EDDS ICD [AD-2].

Packet TC Statistics – returns the number of packets, timestamps of the first and last packet and the data volume size of the Packet TC request with the same filtering parameters.

Packet Ev – returns the raw packet data, with the headers and data as specified in the EDDS header configuration file (see the Configuration and Installation Guide (CIG) [RD-1]).

Packet Ev Raw PARC data – returns the raw packet data, exactly as stored in the PARC, in an XML document with each packet in its own XML element.

Event Record Report – returns events with their ID, category, timestamp, severity, message etc.

Packet Ev Statistics – returns the number of packets, timestamps of the first and last packet and the data volume size of the Packet Ev request with the same filtering parameters.

Out of Limits Record Report – returns the OOL records with Timestamps, RecordTypes, Parameter States, values, limits etc. Note that only the raw values are shown, not the engineering values.

5.2.4 EDDS Reports

EDDS Usage Report – returns the information about requests made through EDDS.

5.2.5 SMON Requests

SMON Parameter – returns parameters, their timestamps and values, along with out of limit information and information about where the packet was received. Please note that only one SMON Parameter request can be active at any one time.

5.2.6 File System Requests

EDDS can be deployed with the capability of serving a local file system directory to clients (per mission). The served directory might potentially host a huge number of files, to deal with that, a number of requests are possible.

File System File Catalogue – returns the catalogue of files that exist in each of the given filter directories non-recursively.

File System Folder Catalogue – returns the catalogue of folders that exist in each of the given filter directories recursively.

File System File – returns the files that match the filtering criteria packaged in a TAR file.

File System Subscription – allows a subscription to files in the given folder so that when the files change or is updated, EDDS will automatically download the new version or send an e-mail notification, depending on the options chosen in the request

5.2.7 Data Provision Service Requests

The Data Provision Services included in SCOS (v5.4.21 and later and 5.5.4 and later) make it easier for third party applications, such as EDDS, to retrieve packet data from the PARC over CORBA. The advantage of this services for EDDS over the PARC Manager, is that the data does not need to be decoded by EDDS.

Packet TM Statistics – see above under “PARC Requests”

Packet TC Statistics – see above under “PARC Requests”

Packet Ev Statistics – see above under “PARC Requests”

Packet TM – see above under “PARC Requests”

Packet Ev (SCOS Event Log) – see above under “PARC Requests”

Packet TM Report – see above under “PARC Requests”. In addition, it is possible to obtain parameter information by setting the filter to obtain the full report.

Packet TC Report – see above under “PARC Requests”

SCOS Event Log Report – see above under “PARC Requests”

Out of Limits Report – see above under “PARC Requests”

5.3 Stream Request types

EDDS supports stream requests to 2 data archives: DARC and PARC.

5.3.1 DARC Requests

Parameter – returns a live stream of parameters, their timestamps and values. Once submitted and the request is ACTIVE, the stream can be viewed by right-clicking on the request in the Request Summary View and clicking “View the Parameter stream” (See Section 6.1.7).

5.3.2 PARC Requests

For all PARC stream requests below, the forms can be completed and saved, however support for streaming data from the PARC is not yet available, so the requests cannot be submitted.

Packet TC – returns a live stream of Telecommands and their values.

Packet TM – returns a live stream of Telemetry and their values.

SCOS Event Log – returns a live stream of SCOS event messages and their values.

Out of Limits – returns a live stream of out of limit data and their values.

6 Reference Section

6.1 EDDS Client

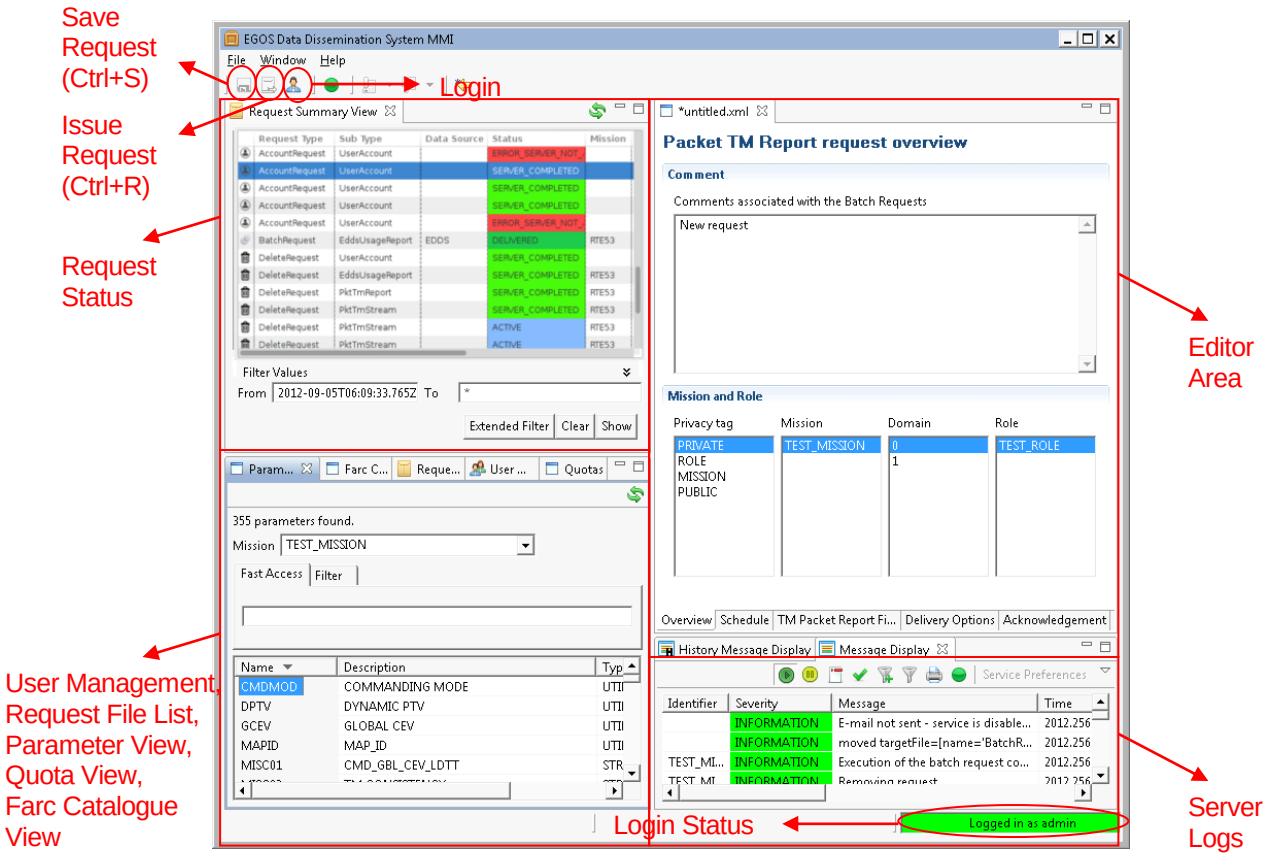


Figure 1 Overall view

6.1.1 Application Start Up

6.1.1.1 Static client

When the MMI is started for the first time, a number of settings are taken from a file called “Edds.ini” found in the client installation directory. These settings can be changed within the EDDS MMI by clicking “Window” and “Preferences” (see Section 6.1.1.3). The settings in “Edds.ini” are not used or updated after this initial first start of the application.

The client stores requests in a working directory defined in the variable named EDDS_HOME. The EDDS_HOME system property needs to be configured as described in the Configuration and Installation Guide (CIG) [RD-1]. It needs to point to a directory where the batch requests templates should be stored. Can be changed after EDDS has been started on the EDDS preferences page (see Section 6.1.1.3).

The “edds.server.endpoint.url” system property needs to be configured to point to the full web address where the web service can be found. The port should also be specified as part of the address, if required. An example might be: http://esa.egos.edds:8080/edds/EddsService?wsdl. Can be changed after EDDS has been started on the EDDS preferences page (see Section 6.1.1.3).

The “status_view_start_time_offset” system property can be optionally set to change the initial start time used in the Request Summary View. By default, the past 7 days will be used. The value must be entered in the “duration” format – i.e. “-PnYnMnDTnHnMnS”. A value of “-P7D” would be the past 7 days. Can be changed after EDDS has been started on the EDDS preferences page (see Section 6.1.1.3).

The “status_view_end_time_offset” system property can be optionally set to change the initial end time used in the Request Summary View. By default, the next 7 days will be used. If the property is omitted, then all future requests will be shown. The value must be entered in the “duration” format – i.e. “PnYnMnDTnHnMnS”. A value of “P7D” would be the next 7 days. Can be changed after EDDS has been started on the EDDS preferences page (see Section 6.1.1.3).

The “javax.net.ssl.trustStore” system property gives the location of trust store that contains the certificate for the EDDS web server. This is used for SSL connections. See Section 3.6.2 in the Configuration and Installation Guide (CIG) [RD-1] for more information.

The “javax.net.ssl.trustStorePassword” system property gives the password for the given trust store. This is used for SSL connections. See Section 3.6.2 in the Configuration and Installation Guide (CIG) [RD-1] for more information.

The “limit” system property allows you to set the number of rows to limit the Request Summary View by. For the standalone client, a value of -1 disables the feature. It is not possible to disable the limit in the web application version of the EDDS client. Default is 5000. See Section 3.6.2 in the Configuration and Installation Guide (CIG) [RD-1] for more information.

6.1.1.1.1 Using a Proxy Server

If using the EDDS Client to connect to the EDDS Web Server via a proxy server, then the following additional properties must be set in Edds.ini:

- http.proxyHost – the host name or IP address of the proxy server
- http.proxyPort – the port of the proxy server
- http.proxyUser – Optional. The username to connect to the proxy server if the proxy server needs authentication
- http.proxyPassword – Optional. The password to connect to the proxy server if the proxy server needs authentication

If using https to connect to the EDDS Web Server, then specify the https proxy details in the above properties instead. Note that using a proxy server that requires NTLM authentication is known not to work due to a bug in Jetty that has not yet been resolved. It will be possible to log-in, but no requests can be seen, no parameter definitions and no log messages. See Section 3.6.2 in the Configuration and Installation Guide (CIG) [RD-1] for more information.

6.1.1.1.2 Static client download

The client application can be downloaded from the web page. On the EDDS web (i.e. http://esa.egos.edds:8080/edds) there is a link 'EDDS MMI Runtimes' that displays a list of possible client application versions, for different platforms, and offers an option to download them. The page also includes MD5 checksums of the downloadable application packages, so that the user can verify the integrity of the downloaded packages.

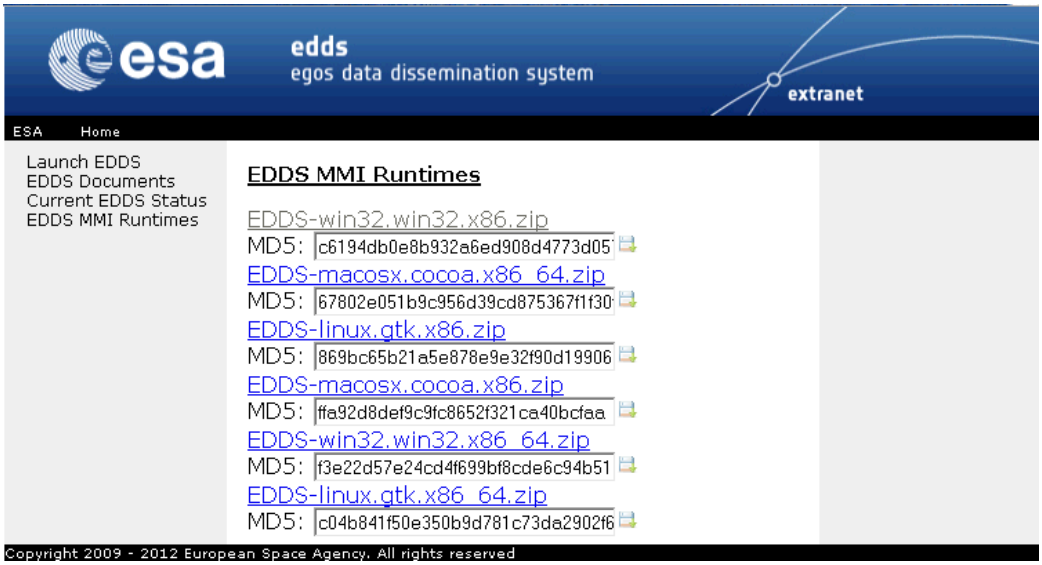


Figure 2 EDDS MMI Runtimes Download Page

Before any links to downloads, documentation or the ability to launch EDDS work, you must first accept the licence agreement:

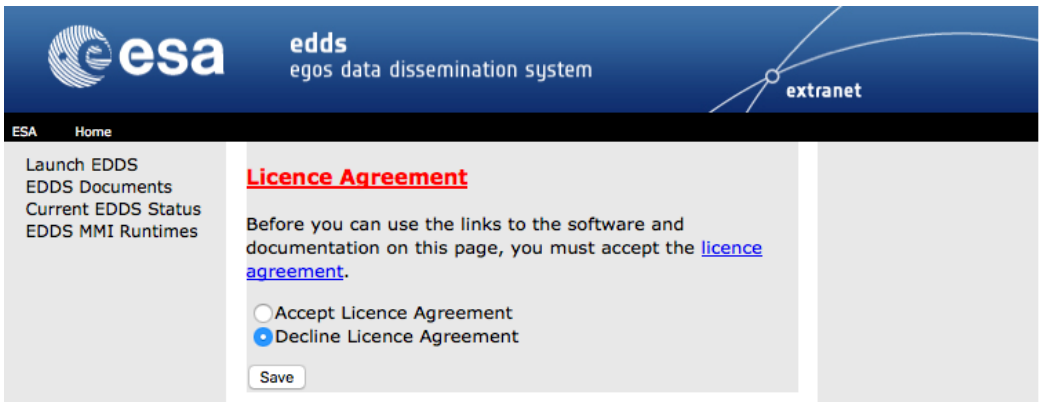


Figure 3 Licence Agreement Acceptance

Simply select "Accept Licence Agreement" then press Save. Your choice will be saved for the current session only.

6.1.1.1.2.1 Checksum verification

There are two possible ways to verify the integrity of the downloaded package from the command line from SLES 12:

1) Comparing the checksums
    a. Download `edds.mmi.{platform}.zip`
    b. `cd` to the download folder
    c. Enter the following command: `md5sum edds.mmi.{platform}.zip`

d. Compare the result checksum to the one displayed on the web page

2) Downloading the MD5 checksum
   a. Download `edds.mmi.{platform}.zip` and `edds.mmi.{platform}.zip.MD5` from the web page
   b. `cd` to the download folder
   c. Enter the following command: `md5sum -c edds.mmi.{platform}.zip.MD5`
   d. The verification result will be displayed

For Windows, follow the advice in this Microsoft Knowledge Base article: http://support.microsoft.com/kb/841290

6.1.1.2 Web client

Application can also be started through the web page. On the EDDS web (i.e. http://esa.egos.edds:8080/edds) there is a link 'Launch EDDS' that will download the required libraries and start the client application. EDDS_HOME property is set to %User.home%/EDDS_HOME and the endpoint URL is pointing to the same web server the application was started from. Each time you start the client, it loads the latest version available on the server.

Before you launch EDDS using Java Web Start for the first time, it is necessary to trust the domain where EDDS is being provided from. To do this, perform the following steps:

1) Open Control Panel and the Java Control Panel (enter "java" in the search box)
2) Click the Security tab
3) Click Edit Site List…
4) Click Add, then enter the base address from your web browser (e.g. http://10.48.16.141:8080/)
5) Click OK and accept the warnings

When you are launching the client application from the web, two dialogs appear: to confirm that you want to launch the application (tick the box then click Run) and to not block the application (click Don't Block).

6.1.1.3 Preferences

Some of the properties can be changed in the EDDS preferences page under menu Window -> Preferences.

The EDDS home directory system property can be changed to locate another folder. The request view will be affected immediately when applied.

The EDDS server end point system property can be changed on the Requests View preference page to point a different EDDS web server. If the property is changed and applied while the user is logged in, the user will be asked for confirmation, as the user must be logged out from the old server before the user can be logged in to the new server.

The request summary view filter start and end time offset system properties can be set to change the initial start and end date for the “From”/“To” time respectively in the request summary view. It will take effect immediately and change the start/end time in the filter, but the filtering will not be performed - this must be done manually by pressing the “Show” button.

The maximum retrieval period for a batch request can be changed to allow a different length of time. Based on this property a warning will be displayed when a request is submitted and the time range for the data retrieval is longer than the value set for this property.

The streaming frequency property can be changed to a different initial delay time for showing streaming data. The value can be changed when viewing the stream, but this does not affect the default value here.

The Number of Rows displayed property can be changed to limit the number of rows displayed in the Request Summary View. A value of -1 disables the feature. The default is 5000 rows. This is useful if there are a number of records in the view, and the default time span results in slow performance in populating the view.

Some requests, such as Packet TC Statistics, must fetch all of the data from the archive and then calculate the statistics on the EDDS Server. As such, they make still take some time to complete, and so a warning message is shown when selecting these request types. The message can be supressed if it the warning is no longer needed by ticking the “Do not show this message again” in the warning dialog. To start showing the message again, select “Show warning message” in the EDDS Preferences.

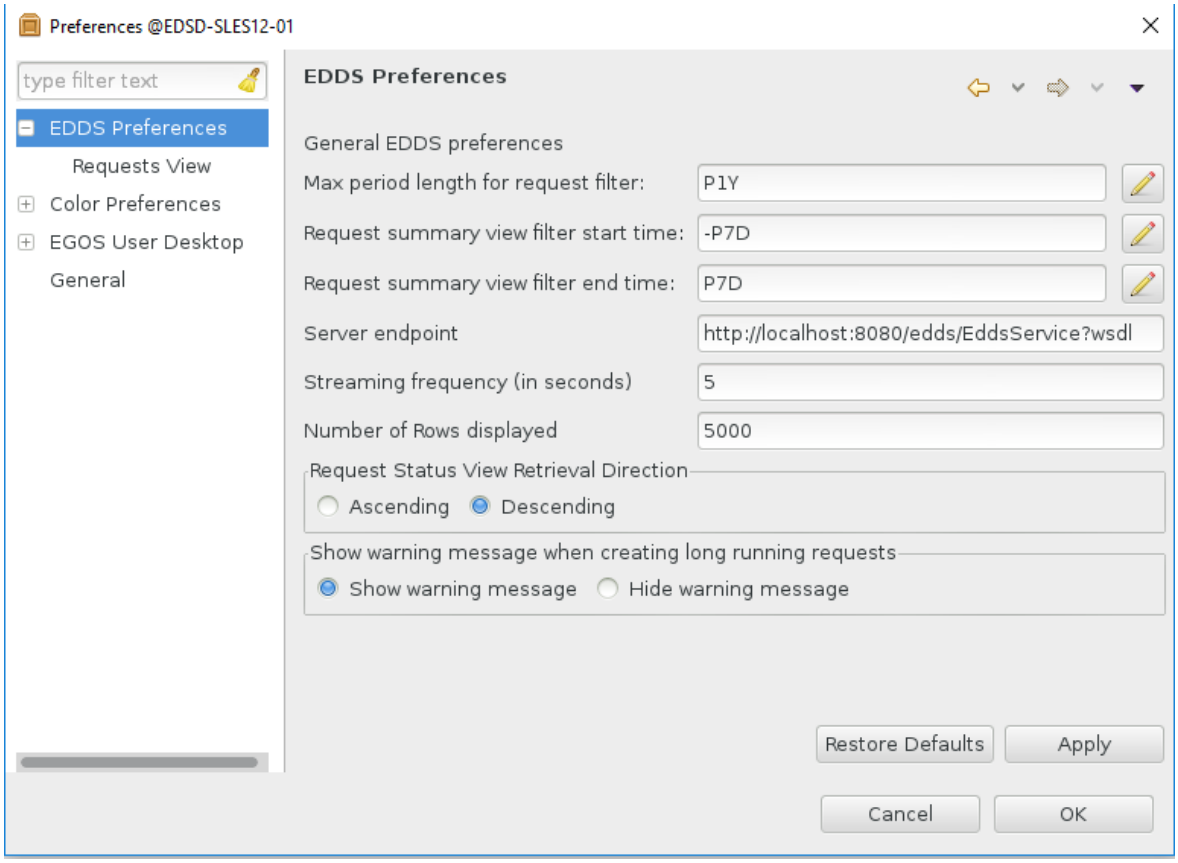


Figure 4 EDDS Preferences

On the Color Preferences page, it is possible to customize the colors that are shown in the Status column of the Request Summary View. After clicking the colour meant to change, a small window will appear where is it possible to choose the new color. Once the colors have been customized, click on Apply and then OK to close the window, then click on refresh button of Request Summary View to see the selected colors applied. Is it always possible to restore predefined colors by pressing on button Restore Defaults.

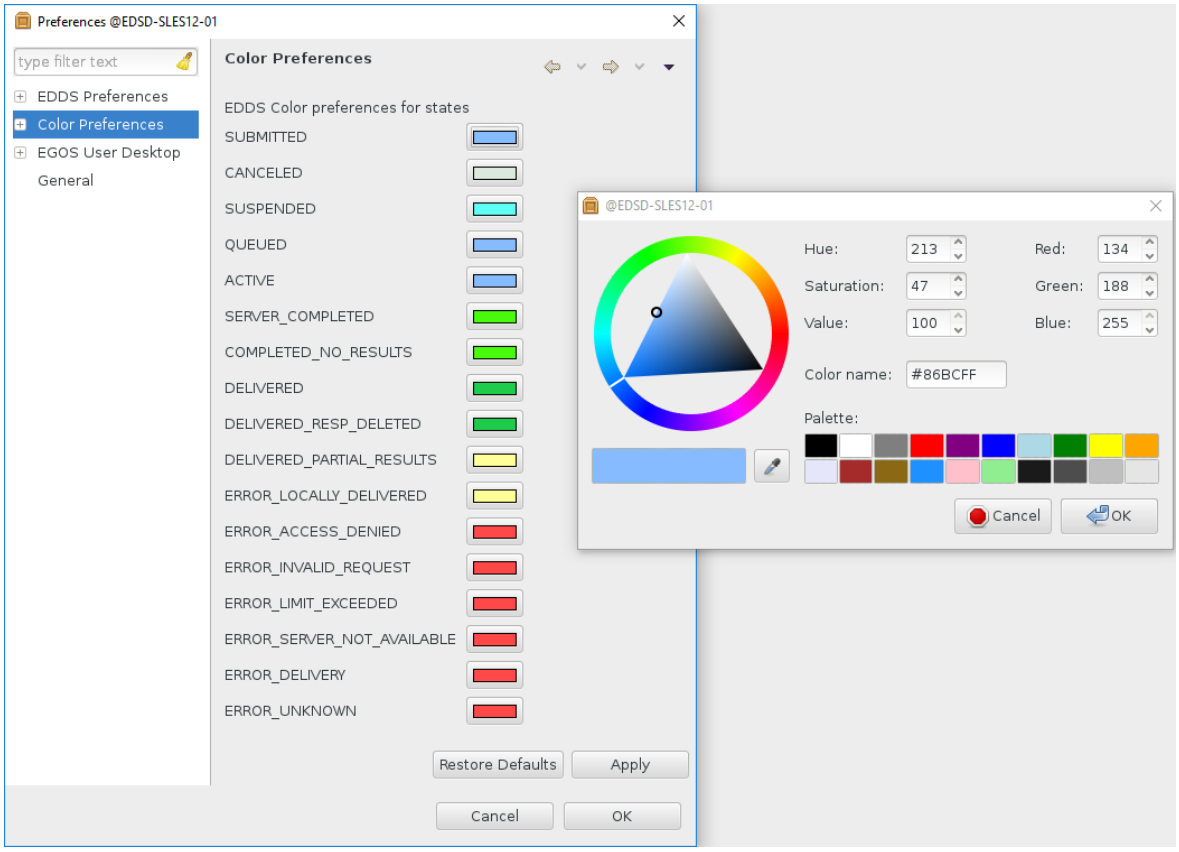


Figure 5 Color Preferences

6.1.2 Login Dialog

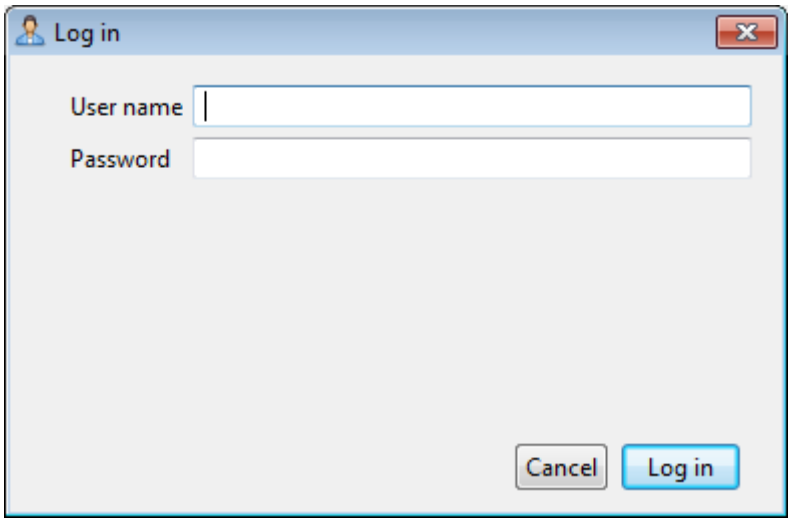


Figure 6 Log in Dialog

The Login dialog provides the ability to log in, log off and change the user password. After the first installation of EDDS, the EDDS Web Server (running under Tomcat) will check the LDAP database to see if there are any users configured. If there are no users present, it will automatically create an EDDS Administrator user called “admin” with a password of “password”. This password will need to be changed after the first log-in.

The user needs to enter a user name and corresponding password. Then the user needs to click the ***Log in*** button. If the user name and password are correct the login dialog will disappear. The *Login Status Bar* will change its colour from red to green and shows the user name. The user name will be converted to lowercase on login and will be displayed as such from then on.
For security reasons, in case the username is too obvious to associate with an admin account, a warning will be displayed. It is recommended to delete such accounts.

To change the password a new ***Change Password*** button will appear after pressing the ***Log in*** button. After pressing the ***Change Password*** button a new dialog will be visible (see Figure 7).
The user needs first to enter his current password, then the new password and last the repetition of the new password. The new password needs to meet the ESACERT requirements for strong password. This means that the new password needs to match following conditions:

- Contain a number
- Contain a upper case and lower case character
- Contain a special character e.g. `!"#$%&()*+,-./:;?[\]_{|}`
- Minimum length of 8 characters

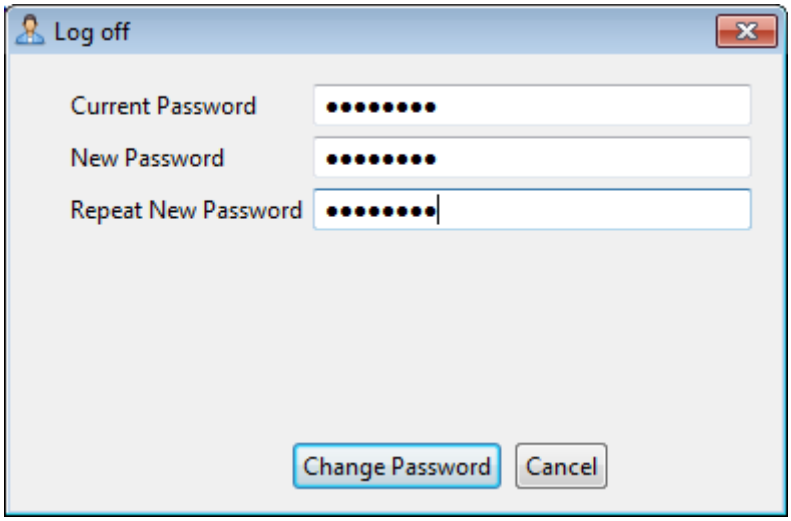


Figure 7 Changing password

User has to choose new password which is different from previously used passwords. Exact number of passwords which are checked is configured in EDDS web server. In case one of the previous passwords is chosen by the user error message explaining situation is shown.

6.1.3 User Management View

The responsibility of the User Management View is to provide an interface for all user management functionalities.

This view is only available after the user has logged in.

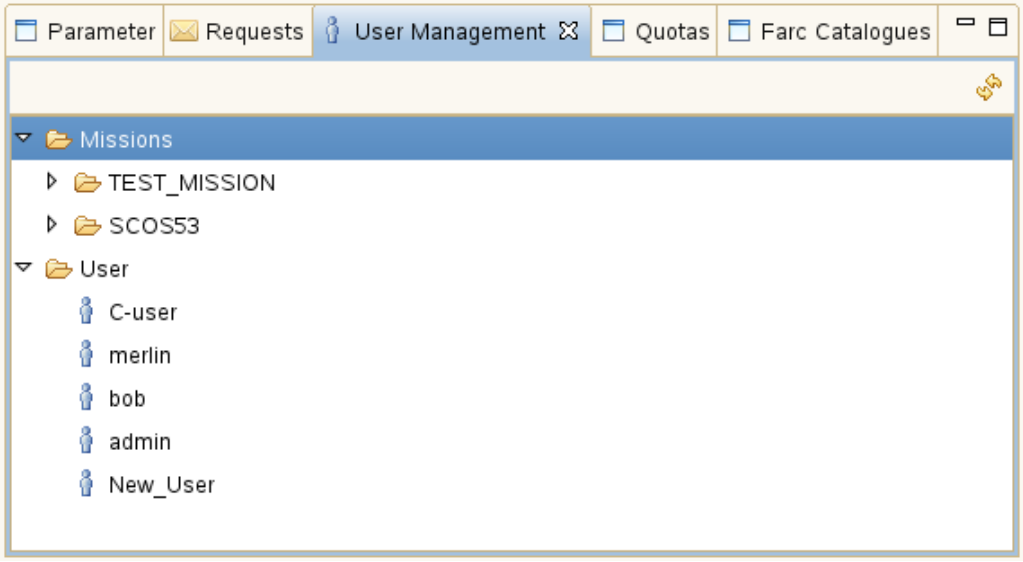


Figure 8 User Management View

The User Management View (Figure 8) is separated in two interface elements. The first element is a management tree and the second element is the details editor area.

The management tree has two root nodes. First the ***Missions*** and second the ***User*** nodes.

The sub elements of the ***User*** node represent a list of all available users.

6.1.3.1 Privileges

Only suitably privileged users can perform user management requests. A user must be an EDDS Administrator user, EDDS Mission Administrator or have permissions to make changes to users or mission information. Only the EDDS Administrator has permission to create other administrators, and a user can only give out a subset of the permissions they have to other users.

6.1.3.1.1 Mission privileges

- EDDS Administrator can see and edit all the missions, including sub data of the missions.
- EDDS Mission Administrator can see and edit missions (including sub data) they are administrating. They also can see missions they are assigned to as a regular user.
- Regular user without any administrative permissions can only see the missions he/she is assigned to. Permission to see and edit sub data depends on the operation sets of a role he/she has been given inside the mission. Role level privileges will also give permission to see the data sets, and group level privileges will give the permission to see all the sub data.

6.1.3.1.2 User privileges

- EDDS Administrator can edit and see all the users.
- EDDS Mission Administrator can edit and see all the users.
- Regular user with user management privileges can see all the users, but only edit if they have specific privilege (CREATE, UPDATE, DELETE, SUSPEND, RESUME).
- Regular user without any user management privileges can only see themself.

6.1.3.2 Creating a sub element

For example to create a new user, a popup context menu can be opened by clicking with the right mouse button on the ***User*** root node (Figure 9). This behaviour is the same as for mission sub elements and nodes.

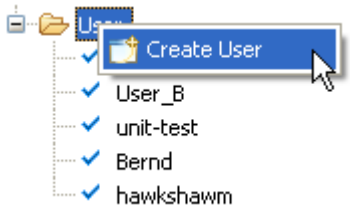


Figure 9 Create a user

A new form will appear where the user needs to edit the content. After that the user needs to click the ***Save*** button (Figure 10 marked with a red circle). If the password expiry period is left empty, the default expiry period configured on the EDDS Server will be used instead. The expiry period can be specified by using the pop-up editor. The minimum period for a password expiry is one day.

If EDDS has been configured to use a central LDAP installation for user management, it is possible to tick the box “Central LDAP User” on the new user form. Upon saving the user, EDDS will check that the user exists in the central LDAP installation. Users that are managed by central LDAP cannot change their passwords or have a password policy applied to them within EDDS. Instead, the user’s password must be managed centrally using the tools provided.

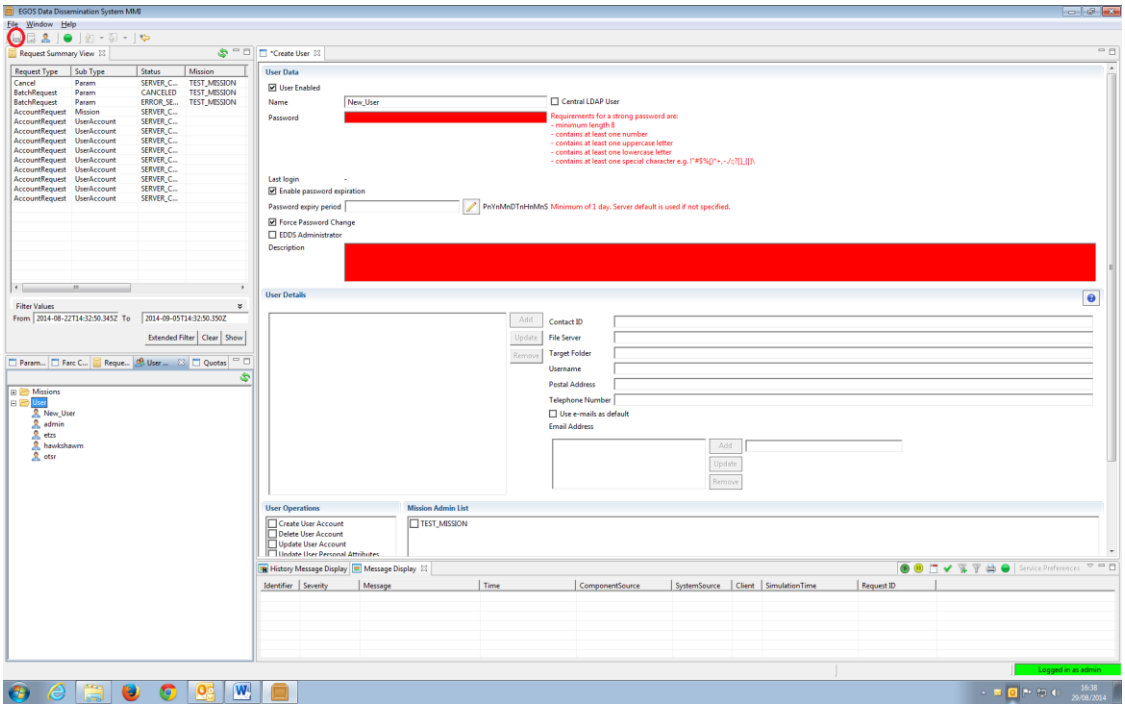


Figure 10 Form to create a new user

After pressing the ***Save*** button the form will be validated. If there are any errors on the form or on the creation of the user, the user will be informed by a dialog box and have the opportunity to correct the data entry and try again. If the save is successful, the form will be closed. Note that the EDDS Server must be running for the User Management update to be performed. If it is not running, the update will be performed when it is next started. There is no need to re-submit the request. The MMI will keep the changes you have made locally until you log-out. If the EDDS Server has not been started before the next log-in, the old information will be shown again. To avoid confusion, it is recommended to ensure an EDDS Server is always running when performing user management tasks.

For security reasons, in case the username is too obvious to be associated with an admin account, a warning will be displayed. Furthermore, the username may only contain lowercase letters. If it contains uppercase letters, an information dialog will be displayed and the username will be converted to lowercase letters.

6.1.3.3 Edit a sub element

To edit a sub element (for example a user) double click on the element in the tree and a form will be displayed where the content is shown.

By pressing the ***Save*** button the changes will be sent to the server. If any errors occur, the user will be notified by a dialog box, otherwise the asterisk (*) in the title area of the form will disappear showing that there are no unsaved changes.

6.1.3.4 Removing a sub element

For example to remove a user, a popup context menu can be opened by clicking with the right mouse button at a user sub element. Choose the ***Remove User*** item.

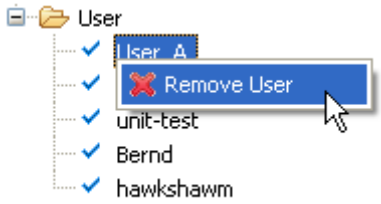


Figure 11 Remove a user

6.1.3.5 Refreshing the User Management list

You can force a refresh of the user management view by pressing the Refresh button:

Figure 12 Refresh button

This will retrieve the latest version of the user management data from the server. You will receive updates to user management automatically as they are created by other users. You will receive a notification in the status bar at the bottom of the screen informing you what has been updated:

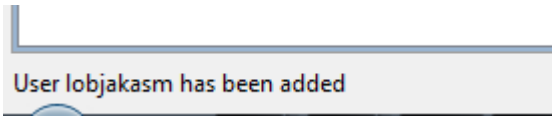


Figure 13 User change notification

6.1.3.6 Creating a new Mission

Before the EDDS Server component can be started, at least one mission must be defined in the User Management view. To create a new mission, right click on the Missions node in the User Management tree and select “Create Mission”. Enter the name of the mission in the “Mission Name” box. This is mandatory. Make a note of the Mission Name you enter – this will be needed when configuring the EDDS Server component. Next, enter the list of domains that this mission supports. Typically this is a number (e.g. ‘0’ for the General domain, ‘1’ for the 1st domain and so on). The name of the domain must match the name of the domain in the CORBA name server of the mission. A mission must have at least one domain. When finished, press the Save button to create the mission.

Once the mission is created, the EDDS Server component can be configured and started to process requests for this mission. See the Configuration and Installation Guide (CIG) [RD-1] for more information.

6.1.3.7 Creating a new Quota Set

Creating a new quota set means setting the limits that later will be applied to a role. For each role, there can be a different quota sets. If there are no quota sets applied to the role, then quota usage is not restricted. If several quota sets are associated with a role, then the smallest quota limits will be applied. Although, this is not true for SPID, APID, Parameter names, File System and FARC restrictions; for these restrictions the combined range of the quota sets will be applied. I.e. if an element passes the checks of at least one quota set, the user can access this element. Note that when a quota set is assigned to several users, they are independent of one another. That is, the quota set is like a template and the number of requests that one user makes do not affect others users with the same quota set.

The quota limit for some quota types can be left empty, so the limit is not enforced.

Max. number of requests per period – the number of requests that can be issued in defined period

Request quota period – the period for ***Max. number of requests per period*** defined using the cron expression. The cron expression defines the starting point of the quota periods.

Max. number of ongoing requests – the number of how many requests can be in process at the same time for a user. Requests that are in process are in status ***ACTIVE*** or ***QUEUED***.

Max. amount of data per period – the amount of data in megabytes that a user can request in a defined period. The amount of data used is based on the file sizes that are delivered.

Data quota period – the period for ***Max. amount of data per period*** defined using the cron expression. The cron expression defines the starting point of the quota periods.

Max. disk space – the amount of disk space in megabytes that user can use to store data in the EDDS server.

SPID restrictions - Restrict the user to be able to use only a set of specified SPIDs in requests. SPIDs can be specified individually or in ranges.

APID restrictions - Restrict the user to be able to use only a set of specified APIDs in requests. APIDs can be specified individually or in ranges. Note that when the checks are performed, the APID list is converted into a SPID list and the union with the allowed entries in the SPID list is used to determine the allowed list of SPIDs that is applied to the requests.

Parameter names restrictions - Restrict the user to be able to use only a set of specified parameter names in requests. Parameter names can be specified individually or by using wildcards.

FARC file name restrictions - Restrict the user to be able to use only a set of specified file names in FARC requests. File names can be specified individually or by using wildcards.

FARC file type restrictions - Restrict the user to be able to use only a set of specified file types in FARC requests. File types can be specified individually or by using wildcards.

File System folder restrictions – Restrict the user to be able to see and use only the given set of directories and recursively all the subfolders. This field accepts a list of comma separated file system paths. The listed directories are related to the EDDS file system root location and require a leading slash (/). Wildcards are not allowed.

Data request range restrictions – Restrict all the data requests to be able to only retrieve data using the primary time (generation time) of the data within specified time windows. If a request goes outside of the range only partially, it is still rejected. If there are multiple ranges, then the start time of the filter in the request must be no earlier than the earliest time defined in the quota and the end time of the filter in the request must be no later than the latest time defined in the list. I.e. the ranges are merged together.

Data request range duration restriction – Restricts all the data requests to be able to only retrieve data using the primary time (generation time) of the data with the maximal time filter duration.

Note that EDDS Administrators and Mission Administrators performing requests for the mission they are an administrator for are considered super users and therefore do not need any quota sets assigned to them.

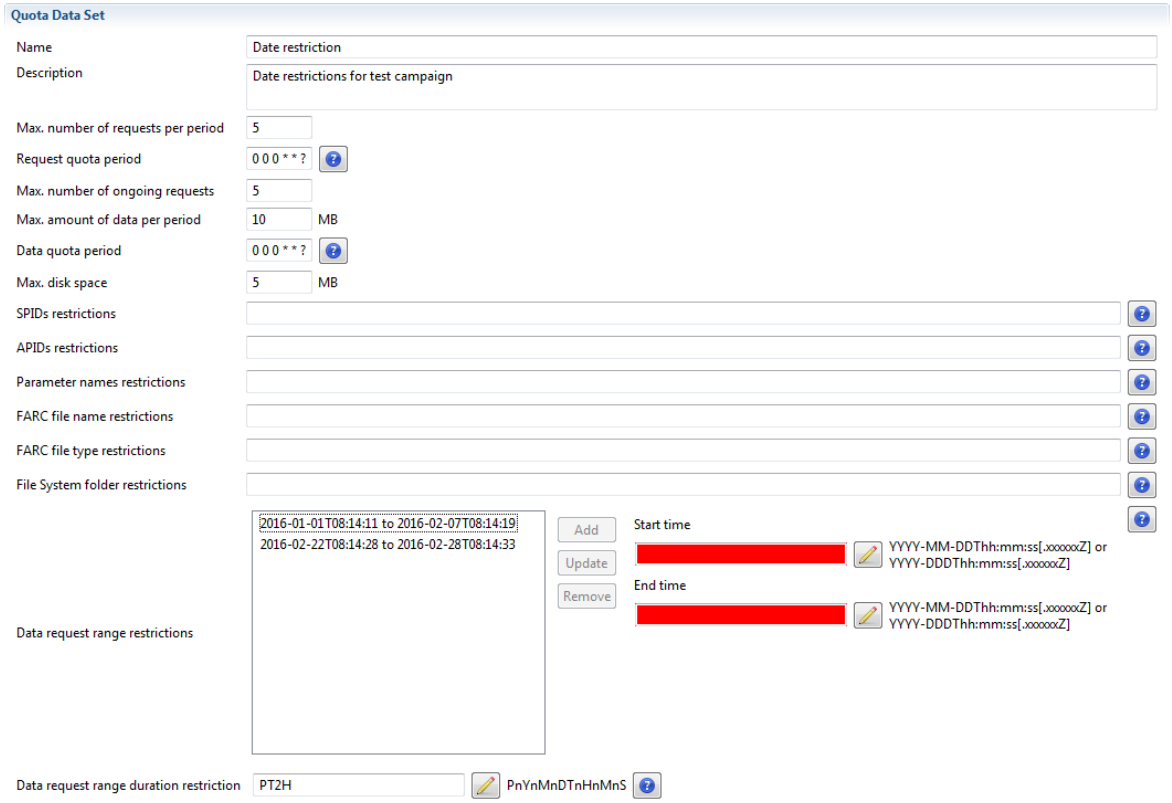


Figure 14: Quota Data Sets

6.1.3.8 Creating a new Operation Data Set

An Operation Data Set defines a list of user management operations a user can perform on a mission. This enables the mission administrator to delegate some of the user management tasks to other users, for example the ability to create (but not delete) quota sets for a mission. To create an Operation Data Set, expand the Missions node, then expand the node for the mission you want to create the Operation Data Set for, then right click on “Operation Data Sets” and select “Create Operation Data Set”. Next, give the Operation Set a name and description and select one or more permissions from the list. When finished, click the Save button.

Note that EDDS Administrators and Mission Administrators performing requests for the mission they are considered super users and therefore do not need any operation data sets assigned to them.

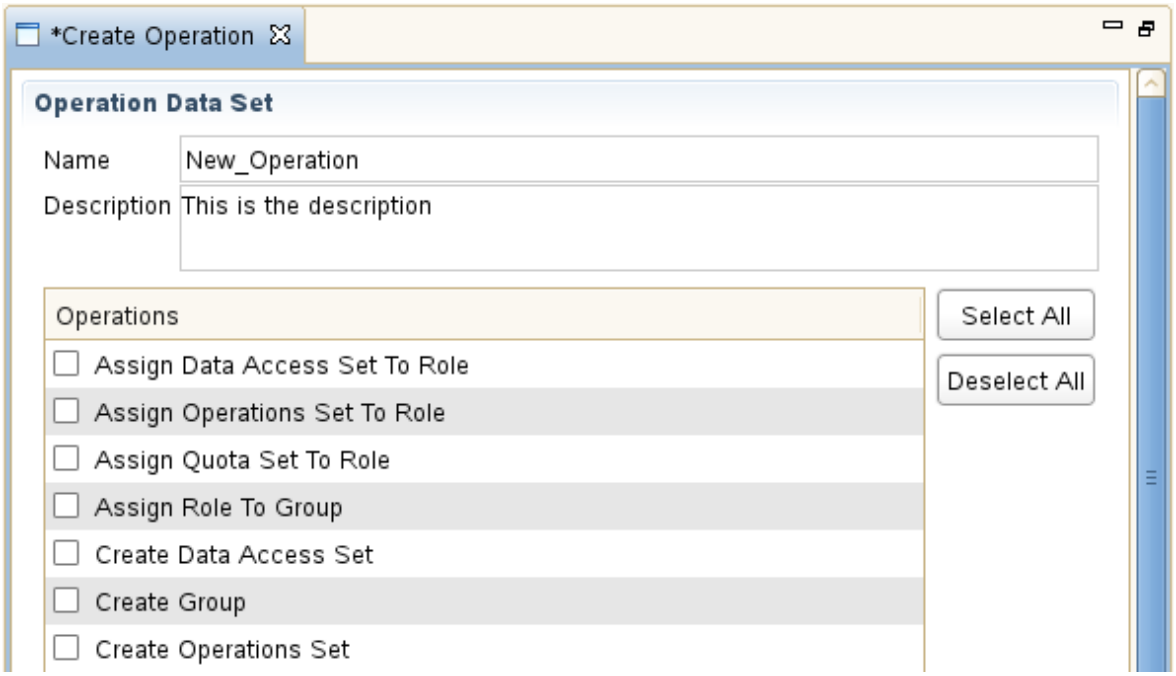


Figure 15: New Operation Data Set

6.1.3.9 Creating a new Data Access Set

Data Access Sets define the data source and the type of requests a user can issue and the requests that are shown as available in the New Request Dialog. A Data Access Set must be attached to a Role. If a Role doesn't have any Data Access Sets attached to it, the users with this role cannot issue any batch requests, unless they have another role containing at least one Data Access Set.

Note that EDDS Administrators and Mission Administrators performing requests for the mission they are considered super users and therefore do not need any data access sets assigned to them.

Typical setup could be setting up 3 Data Access Sets for PARC, DARC and FARC requests.

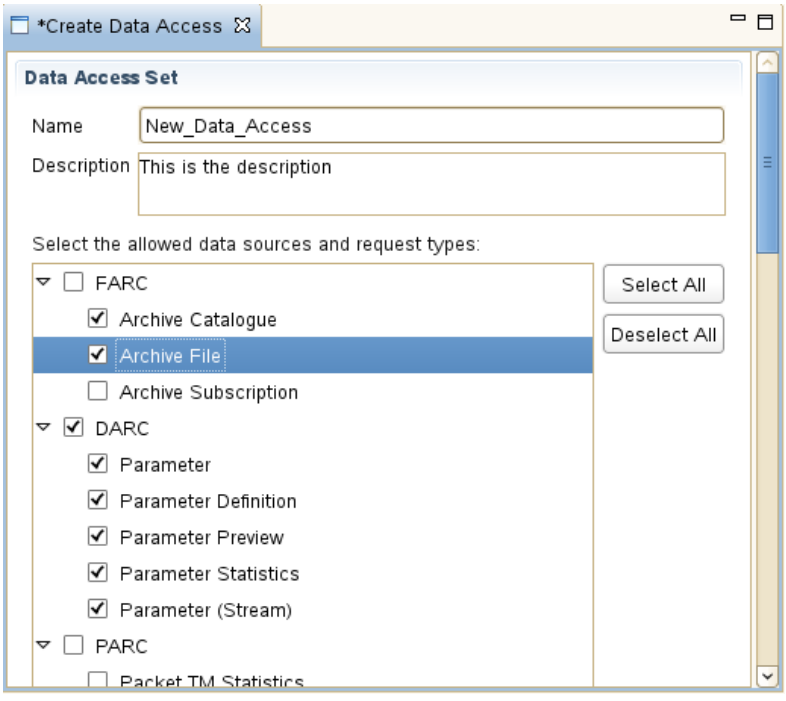


Figure 16: New Data Access Set

6.1.3.10 Creating a new User Role

Quota Sets, Operation Data Sets and Data Access Sets serve no purpose on their own. A User Role must be created before any of these objects can be assigned to a user. To create a User Role, expand the Missions node, then expand the node for the mission you want to create the User Role for, then right click on “User Roles” and select “Create Role”. Next, give the role a name and description, complete the default contact details and select one or more Data Access Sets, Quota Sets and/or Operation Data Sets from the lists to assign to the role. When finished, click the Save button. De-selecting “Role Enabled” will prevent users assigned this role from using it.

Note that EDDS Administrators and Mission Administrators performing requests for the mission they are considered super users and therefore do not need any roles assigned to them.

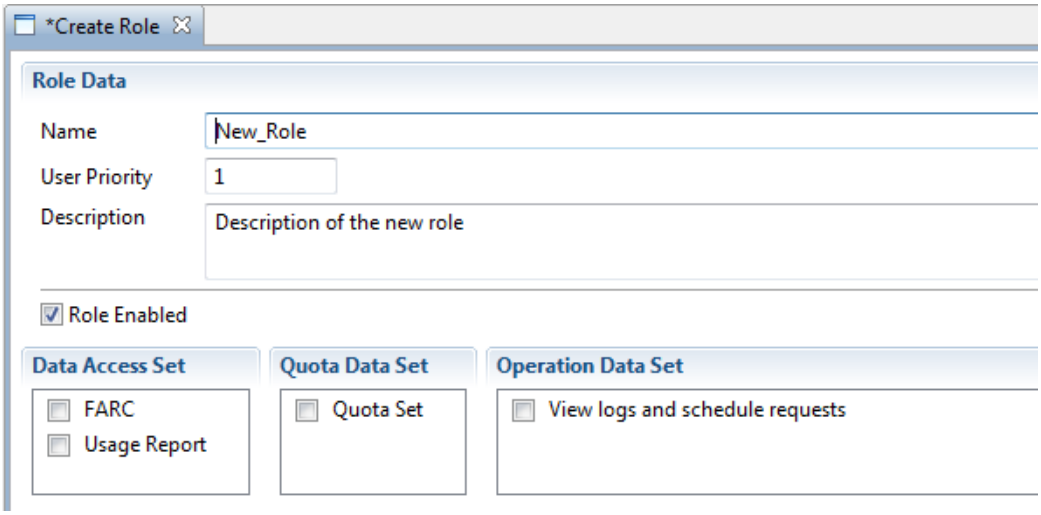


Figure 17: New User Role

6.1.3.11 Creating a new User Group

For each mission there is a possibility to set up a user group. User groups bind selected users to selected roles. Through roles the users will also have access to quota data sets, data access sets and operation sets.

User groups can be disabled or enabled at any time. In case a group is disabled, all the users in the group will no longer be able to log-in.

There is also an option to force every user in the group to change their password. This action is only executed on save and cannot be undone.

The ‘Select all roles’ and ‘Select all users’ checkboxes allow the user to enable or disable all available role and user checkboxes.

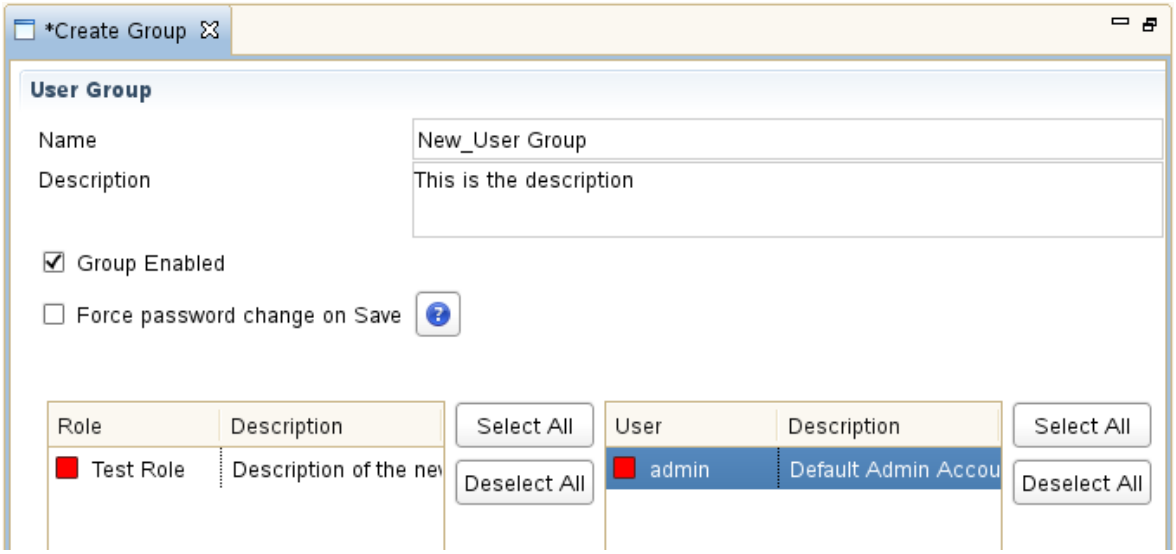


Figure 18: User Groups

6.1.4 Request Summary View

The purpose of the Request Summary View (Figure 20) is to provide the user with a list of all performed requests and their responses (jobs).

In addition to this, an EDDS administrator can view all **requests** issued by users, Mission administrators can view all requests issued for the mission they administrate.

This view is only available after the user has logged in. The EDDS Archiver must be running for this view to be populated.

6.1.4.1 Limiting the number of rows displayed

Should the number of requests in the database by very high, resulting in slow performance due to the large number of rows being displayed for the time range given, it is possible to limit the number of rows displayed. See Section 6.1.1.3 for details. Should a limit be in place (for the Web MMI, a limit is always applied), the limit is displayed to the left of the “Extended Filter” button, along with the number of rows currently being displayed. Should the number of rows displayed equal the limit, it could be that there are more rows that could be displayed should the limit be increased or disabled.

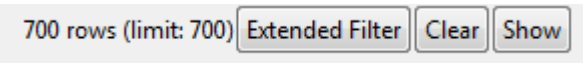


Figure 19 Limited Number of Rows Displayed

6.1.4.2 Updating the list

The list will be updated automatically as new requests are issued and statuses are updated. There are also two manual ways of updating the list. The first option it to press the ***Refresh All*** icon in the upper right corner of the view. This will refresh the complete list. The second way of updating the list is to select one more jobs in the list an open a popup context menu by right clicking on a selected item and choose the first menu item ***Refresh status of selected jobs***. This will only refreshes the selected jobs.

6.1.4.3 Cancelling a job

If the logged-in user needs to cancel one of their pending jobs, then right click on the job to be cancelled and select ***Cancel***. This will cancel the selected job. Multiple jobs can be cancelled by selecting the first job, holding down the Shift key and selecting the last job, then selecting Cancel from the pop-up context menu.

EDDS administrators are allowed to cancel any requests scheduled or in process for all users.

Mission administrators are allowed to cancel any requests scheduled or in process for the mission they administrate.

6.1.4.4 Suspending a job

If the logged-in user needs to suspend one of their active jobs so that it can be resumed later, then right click on the job to be suspended and select ***Suspend***. This will suspend the selected job. Multiple jobs can be suspended by selecting the first job, holding down the Shift key and selecting the last job, then selecting Suspend from the pop-up context menu.

EDDS administrators are allowed to suspend any requests in process for all users.

Mission administrators are allowed to suspend any requests in process for the mission they administrate.

Note that the request is suspended from the **last delivered file**. If the split files feature has been disabled, then suspending a job is equivalent to cancelling it. A smaller response split file size will result in less work that needs to be performed when resuming the request. To resume a suspended request, right click the request and select ***Resume.*** Not all requests can be suspended. See Table 2 for more information. Request types that cannot be split cannot be suspended. When suspending a request, the incomplete files are deleted and a new file is created when resuming.

6.1.4.5 Deleting a Response

To delete any response files stored on the EDDS server before the scheduled file retention period and free up some used disk space (e.g. if the user´s quota is full) right click the request and choose ***Delete Response Data***. Only requests in status DELIVERED or ERROR_LOCALLY_DELIVERED can have their response data deleted.

6.1.4.6 Deleting a Request

To delete any request and their response files, right click the request and choose ***Delete Request***. The request will be deleted from the database along with its response data, if there was any. Only the administrator can issue a Delete Request command.

6.1.4.7 Downloading a Request

To download a submitted request the user needs to open a popup context menu by right clicking on a job and selecting the menu item ***Download Request***. The user needs to then specify the location and file name of the request.

6.1.4.8 Opening a Request

To open a submitted request, to use it as a template for a new request, the user needs to open a popup context menu by right clicking on a job and selecting the menu item ***Open Request***. This will open the request in an appropriate request view and is then ready to be changed, submitted and/or saved as a new request.

6.1.4.9 Re-submitting a Request

To re-submit an already submitted request (e.g. in case problem occurred when processing the request and that is now resolved), right-click the original request and select **Re-submit Request** from the context menu. This will create and submit a new request equivalent to the original. If the original request was part of a schedule with multiple requests, then only the selected request will be re-submitted, not the whole schedule.

6.1.4.10 Downloading a Response

To download response data retrieved by the EDDS Server for a request, the response data needs to be available for the EDDS system and the user needs to open a popup context menu by right clicking on a job and selecting the menu item ***Download Response File(s)***. The user needs to then specify the location and file name of the response. In case the response contains several files, a directory is asked.
There is an option to download a response for several jobs in a row, by selecting more than one job and then clicking popup menu item ***Download Response File(s).*** For each of those, a directory and a file name will be asked.
It is also possible to download individual response files for the case where the response file has been split into parts. See Section 6.1.4.13.

6.1.4.11 Opening a Response

To open the response data retrieved by the EDDS Server for a request, the user needs to open a popup context menu by right clicking on a job and selecting the menu item Open Response Files(s). There is an option to download a response file for several jobs in a row by selecting more than one job and then clicking popup menu item Open Response Files(s). All the files will be downloaded to a temporary location and opened in the editor. The user can optionally save the file to another location by selecting “File” and “Save As...”

It is also possible to open individual response files for the case where the response file has been split into parts. See Section 6.1.4.13.

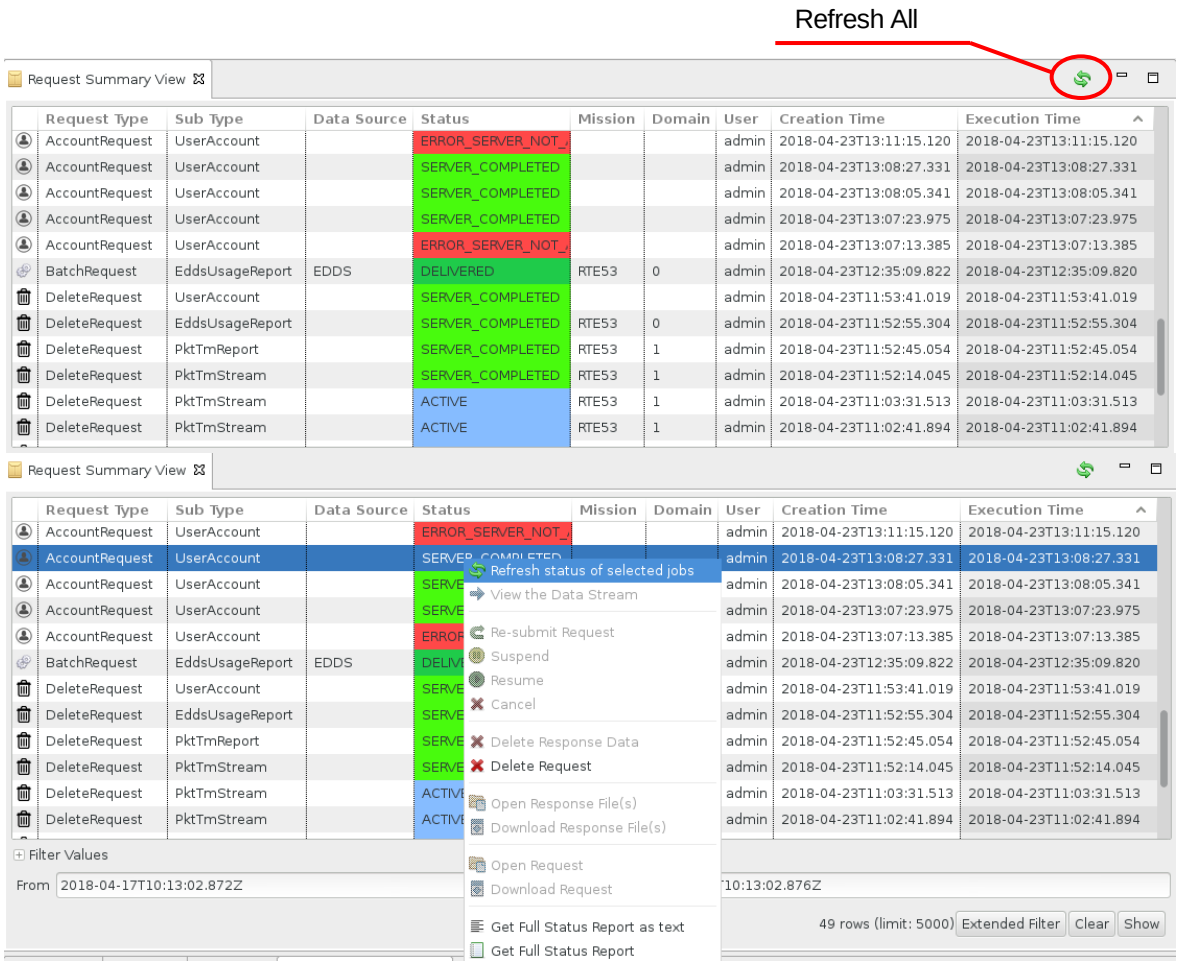


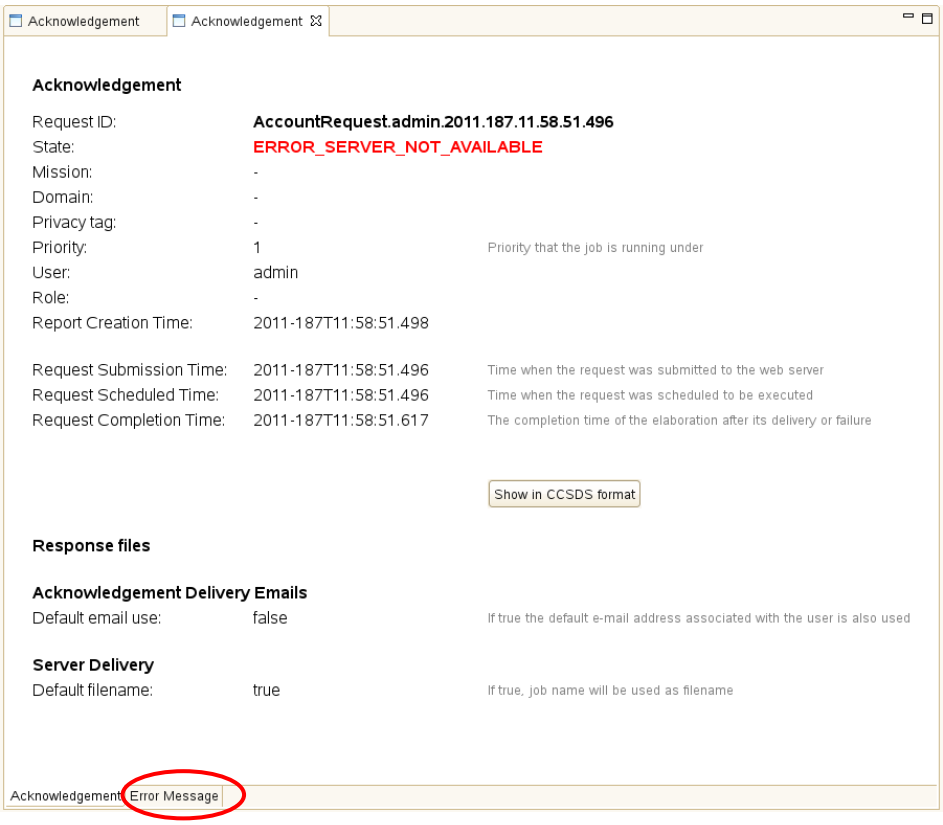
Figure 20 Request Summary View

6.1.4.12 Get Full Status Report as text

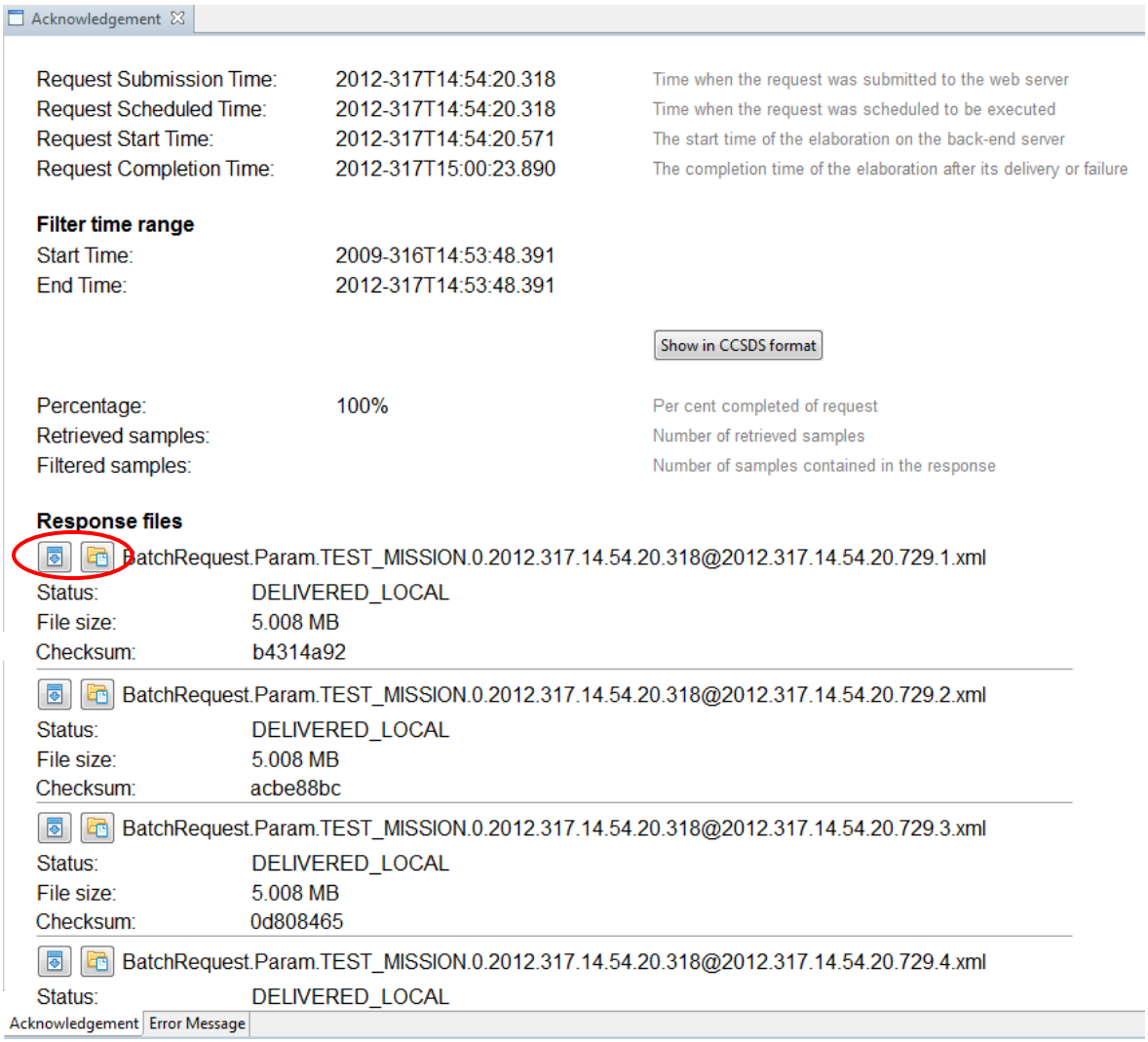
To get the full status report in the native XML format for a request, the user needs to open a popup context menu by right clicking on a job and selecting the menu item ***Get Full Status Report as text.***

6.1.4.13 Get Full Status Report

To view the full status report for a request, the user needs to open a popup context menu by right clicking on a job and selecting the menu item ***Get Full Status Report.*** In case there were any errors during the process, the full error message can be seen on the report "***Error Message***" page.



The acknowledgement page is automatically updated whenever a file for the response data has its status updated (for example, created or delivered). Once a response file has been delivered, two additional icons will appear enabling you to either download the response file or open it. Hover over the buttons for a tooltip to see which button has which function.



For requests with File Server Delivery, it is possible to see which file servers the response file should be/have been sent to, along with the delivery state of the file:

Response files

BatchRequest.ParamDefinition.TEST_MISSION.0.2013.016.10.44.21.349@2013.016.10.44.22.215.1.xml

Status: DELIVERED_LOCAL
File size: 71.614 kB
Checksum: 252be75f
Socket error with RemoteHost [michael@10.48.18.152] - Connection refused

Total amount of data:	71.614 kB

Acknowledgement Delivery Emails

	michael.hawkshaw@logica.com
	michael.hawkshaw@cgi.com
Default email use:	true

File Server Delivery

Target server:	10.48.18.86
Username:	edds
Password:	
Target folder:	eddstest
Target server:	10.67.66.225
Username:	logica
Password:	
Target folder:	eddstest
Target server:	10.48.18.152
Username:	michael
Password:	
Target folder:	eddstest
Default filename:	true
Keep file after delivery:	false

If the option to keep the file after delivery on the local EDDS server has been selected, so that it can be downloaded from the MMI for example, then the file will be delivered to all the remote FTP servers and kept on the local server. In which case, if delivery to ALL targets was successful, the status of the file will be DELIVERED_LOCAL_REMOTE. If the option to keep the file on the EDDS server after delivery is not selected, and delivery to ALL targets was successful, the status of the file will be DELIVERED_REMOTE.

If delivery to one or more of the targets was successful, but some failed to be delivered, then the targets that could not be delivered to along with the error message will be shown underneath the file information. If delivery to a target failed, then the status of the file will change to ERROR and the overall status of the request will be ERROR_LOCALLY_DELIVERED and the file will be saved on the EDDS server regardless of whether the “Keep file after delivery” box was selected or not.

When a file fails to be delivered locally as well, or some other error occurs, the file status will be set to ERROR and request state will go to ERROR_DELIVERY. The file will then be moved to a failed directory, the location of which is configured in the Delivery Manager. The file can be manually moved into the Delivery Managers inbox to re-attempt delivery.

Please note that if a request results in a large number of response files (around 200), it is not recommended to open the full status report, as it would reduce performance of the MMI. Instead, use the text based report.

The “Checksum” field can be used to verify that a file from EDDS was downloaded correctly. It uses the CRC32 checksum algorithm. Tools exist for verifying checksums. EDDS also provides a method in the `edds-common-2.3.0-tests.jar` Jar file. This can be run with the command `java -jar edds-common-2.3.0-tests.jar <responsefile> <expected crc32>` The edds-common-2.3.0-tests.jar file is created during the build process from the source code in the edds-common directory with the command `mvn install`. The Jar file is created in the target directory.

6.1.4.14 Sorting the Request Status View

Sorting can be made by any column and both ways. To do so, user needs to click on the header of a column. Clicked once, sorting will be done in one direction. Clicked twice, sorting will be done in the opposite direction.

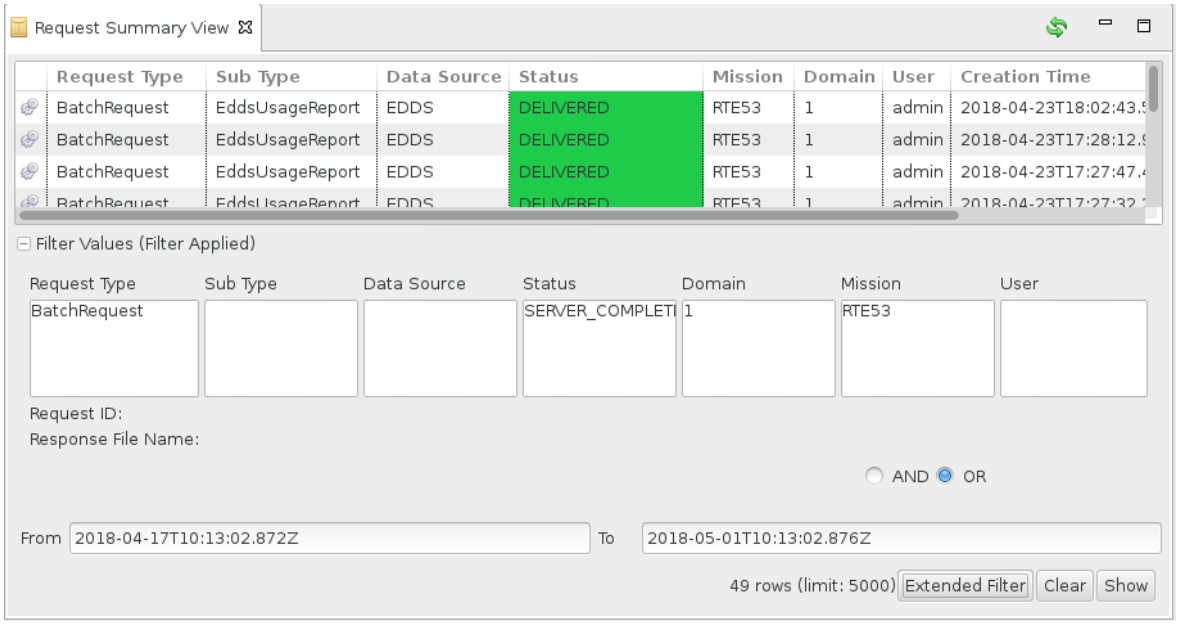
6.1.4.15 Filtering the Request Status View

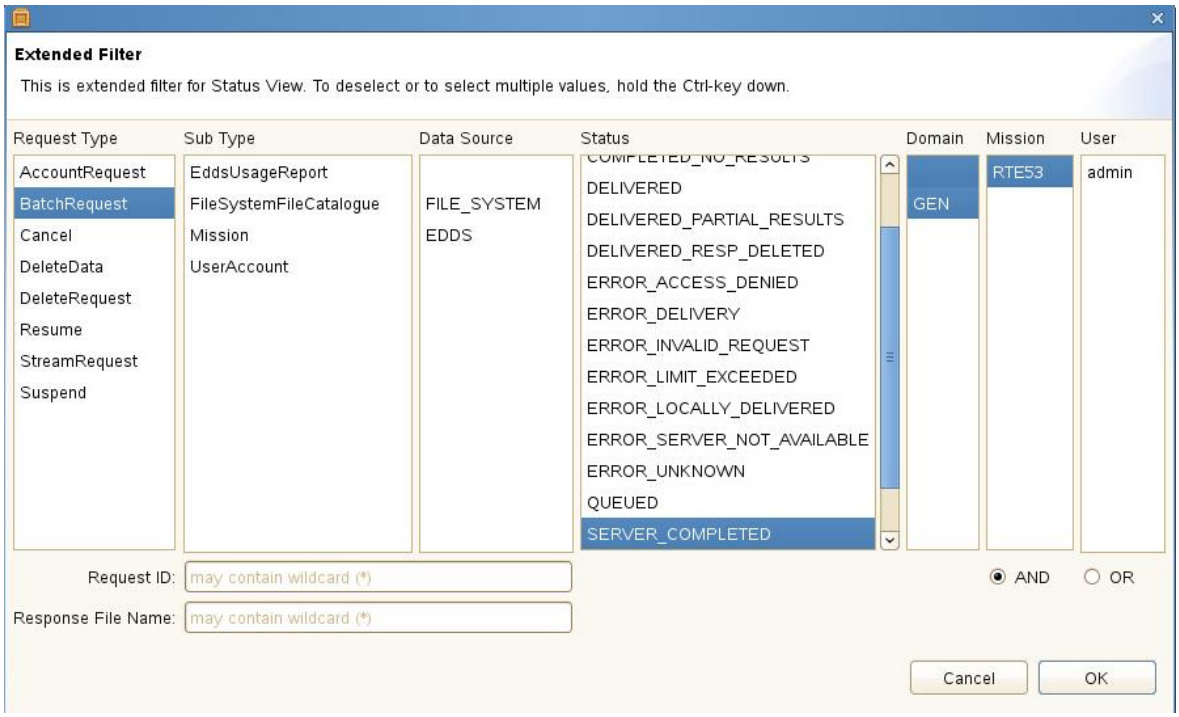
The Request Status View list can be filtered by time only or by extended filter values. The extended filter opens when ***Extended Filter*** is clicked. Several items can be selected for the same field with Ctrl-key held down. Deselecting can be done similar way. The user has the option to use either the AND operand or the OR operand for the filter. User has an option to quick view the selected filter values, by clicking on ***Filter Values.*** All the fields in that view are non editable and if too many items have been selected not all of them will be shown. To view all the values the user must open the extended filter dialog. The only editable field is option to select the AND or OR operand to be applied between filtering fields.

When OK is pressed from the Extended Filter dialog, the filter is applied locally only to the already cached results in the view. If the Show or Refresh button is pressed on the view, the filter is sent to the back end and the filtered results are retrieved from the database.

When changing the date range, click ***Show*** to apply the filter. The MMI will automatically update the details of requests as it receives updates from the server, and perform the filtering on the updated information automatically. You can force an update of the filtered data with the latest statuses, either by clicking the Refresh All button or right-clicking on selected jobs and clicking “Refresh status of selected jobs” to refresh the status of just those jobs. Clicking Refresh All does not reset the filter, instead the filter is re-applied to the latest data retrieved from the server. When a filter is applied, the text “(Filter Applied)” appears after the Filter Values label.

Note: The "Request ID” and "Response File Name" fields are particular fields as to free insertion, for this reason they accept wildcard character. So, for example, to look for a Request ID that in the middle of the name contains the word "GEN" we have to write: *GEN* (match anything before and after GEN). If we write *GEN is not enough because it would find only the fields that end with GEN.





6.1.5 Data Requests

6.1.5.1 Create new Request

To create a new request for data, the user needs to open the ***File*** on menu bar and choose the item ***New Request…***.

A new request dialog will appear (Figure 21). The user needs to select a Mission and a Batch or Stream Request type. Batch and Stream request type are displayed based on the selected mission and user permissions. The text shown for these requests may vary from mission to mission as they are configurable in the EDDS server that serves the mission. Each type of request is grouped by data source, so all requests that obtain data from the DARC are grouped together for example. It is possible to quickly filter the list to show the request you are looking for by typing the filter in the filter box. Only request types that you have permission to submit to the EDDS Server are displayed. After clicking the ***Finish*** button the new request form will be created. At this point the file is not yet saved and will be 'untitled'.

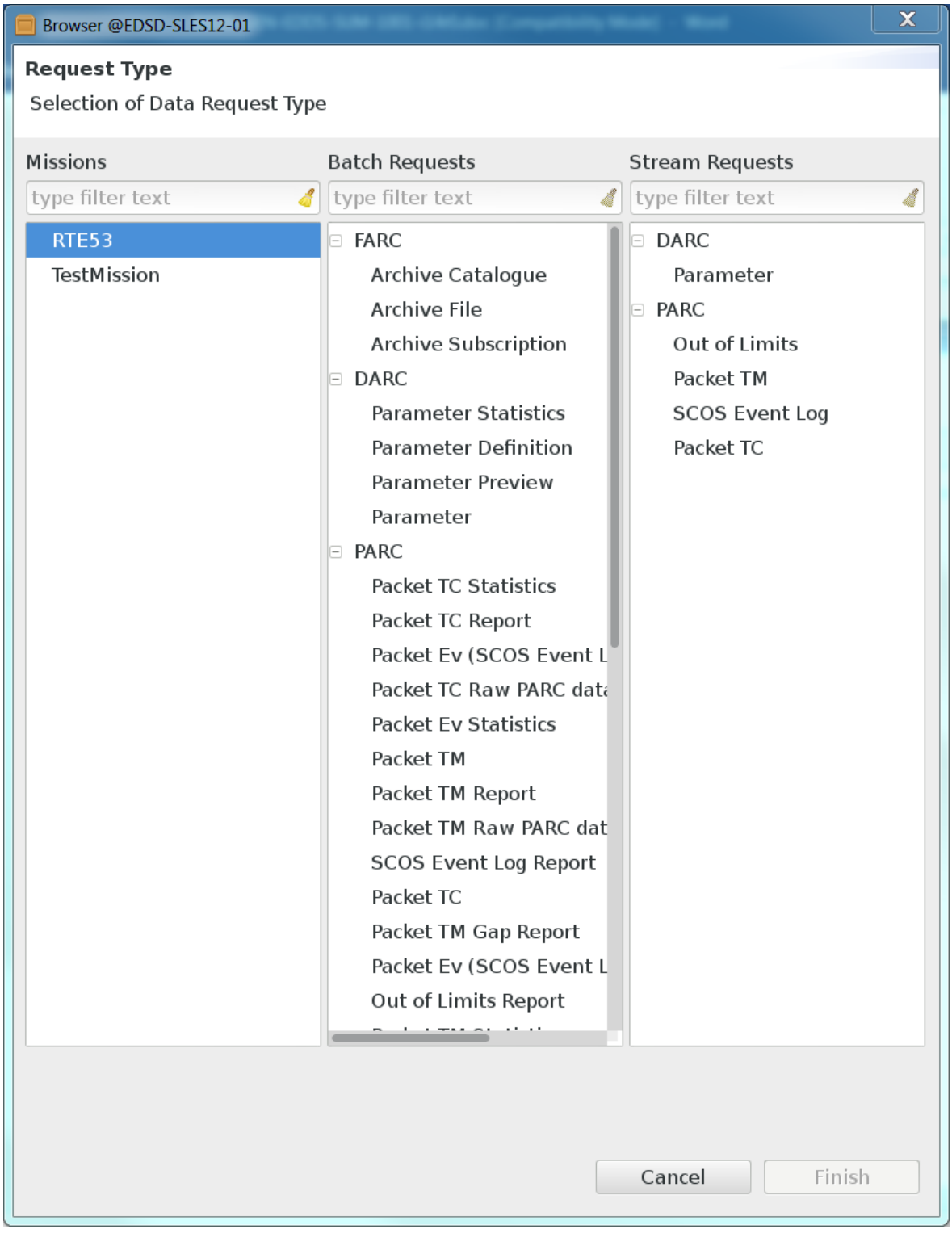


Figure 21 New Request Wizard

6.1.5.2 Open a Request in Text Editor

To open a previously saved request in a text editor the user needs to open the ***File*** on menu bar and choose the item ***Open File...***. A file dialog will appear. The user needs to open a XML request file. The file will then be opened in the *Editor Area* in a Text Editor.

6.1.5.3 Open a Request in a Form Editor

To open a request in the editor area the user needs to double click on an XML file in the *Request View*. A form editor will be opened in the *Editor Area*.

Another option is to open a request from a ***File*** menu bar and choosing the ***Open Request...***. The request will be opened in the *Editor Area*.

6.1.5.4 Deleting Request files on disk

To delete a previously created request file stored locally on disk, right click on the request file and select "Delete the selected request(s) on disk". Multiple files can be selected by selecting the first item, holding down the shift key and selecting the last item then right-clicking on the selection. You will receive a confirmation message for each file you wish to delete. Note that it is not possible to delete directories. If the selection includes a directory, the pop-up menu will not be displayed.

6.1.5.5 Issuing a Request

To issue a request, the request will need to be opened in the *Editor Area* either in a text editor or the form editor. If a request is open an icon will be enabled (Figure 22 marked with a red circle). If the user presses this icon, the request will be sent to the web server for processing. The shortcut key for issuing requests is Ctrl+R.

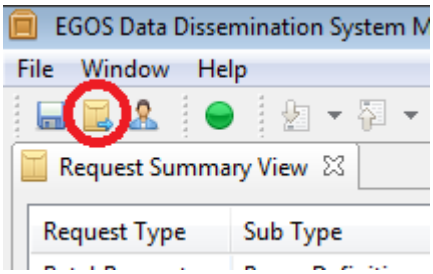


Figure 22 Issue Request icon

6.1.5.5.1 Saving a Request

If a request has been changed, then an asterisk (*) will appear in the editor window title. The save icon will be enabled (Figure 23 marked with a red circle). If the user presses this button (or using ***Save*** under File menu or shortcut ***Ctrl+S***) the request will be saved and the * disappears. In case the request is a new one, a dialog box will be opened to ask for a file name to save it under.

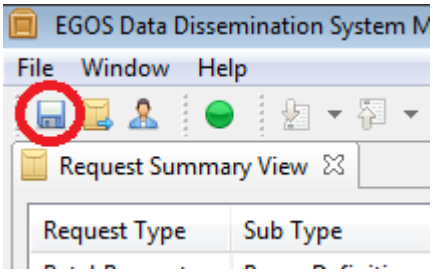


Figure 23 Save a Batch Request

6.1.5.5.2 Saving a Request under different name or location

A request can be saved under different name and/or location while using the ***Save as*** option from **File** menu. User needs to specify the name and location for the Request.

6.1.5.6 Batch Request Form Editor

The form editor contains multiple pages. The pages can be accessed by clicking on the tab on the bottom of the editor. If the request was changed, then a * will appear in the window title. This means that the request needs to be saved.

6.1.5.6.1 Overview Tab

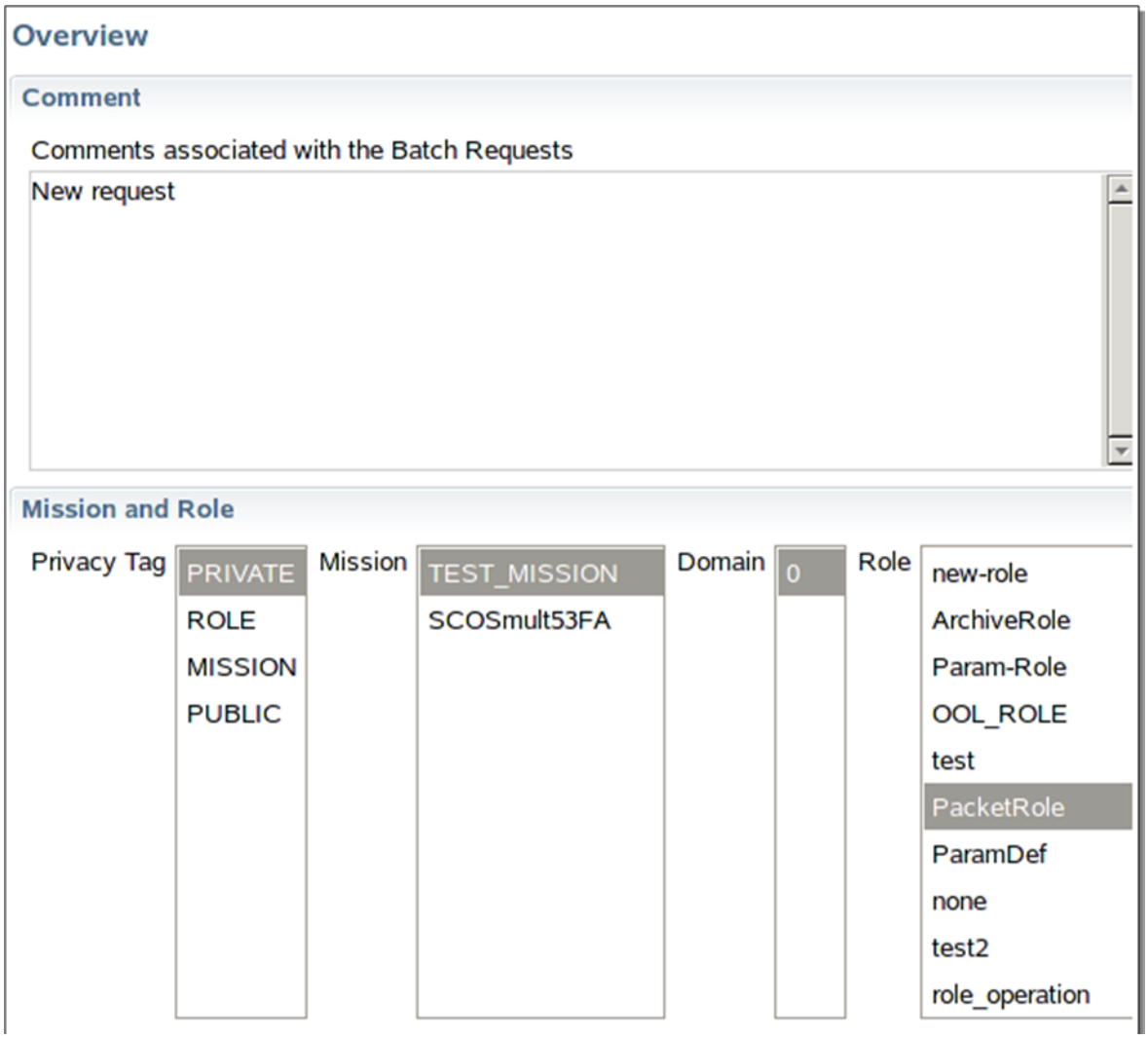


Table 1 - Overview tab

The ***Overview*** tab provides:

- A section where the user can add a general comment to the batch request (***Comment***);
- A section where the privacy tag and role can be selected (***Mission and Role***);

6.1.5.6.2 Schedule Tab

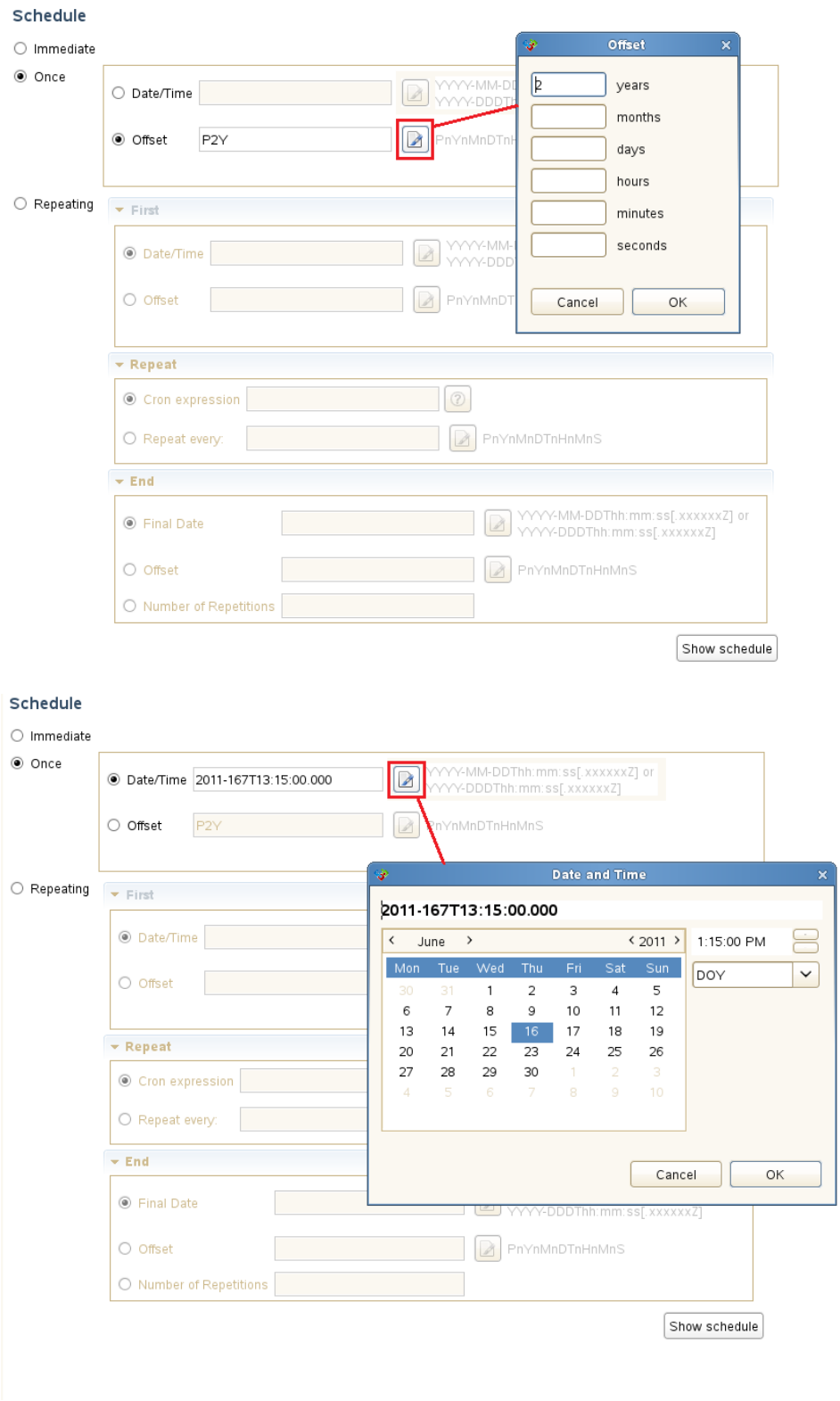


Figure 24 Schedule Tab

The ***Schedule*** tab displays the schedule of the request. The user can choose between ***Immediate***, ***Once*** and ***Repeating*** schedule (see Figure 24).

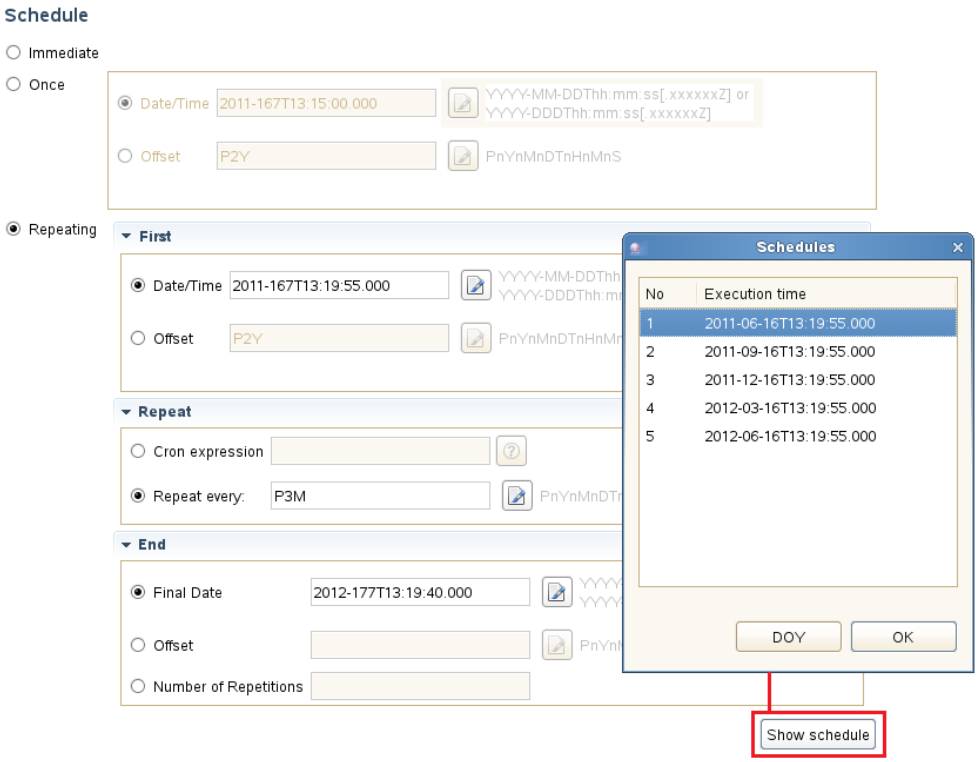
An **immediate** request is immediately schedule by the system for execution;

A **once** request is scheduled once at a specified time in the future (absolute time or relative time).

A **repeating** request is a request performed multiple times: in this case the MMI gives the possibility to indicate a time window and a repetition expression. The section “First” indicates the first occurrence of the sequence (absolute or relative time). The “Repeat” section contains the repetition expression (as *CRON expression*). The “End” section indicated when the sequence has to stop (absolute time, relative time or number of repetitions). Note that when creating a repeating scheduled request, the data retrieval window specified on the filter page must be a *relative* time. The retrieval period is calculated relative to the actual execution time of the particular scheduled request. This is to avoid the case where a request is scheduled on a regular basis and always retrieves the same data from the same point in time. To help understand when your scheduled request will be executed, and what data will be retrieved, see the “Show Schedule” button described in the Section 6.1.5.6.4.1.1.

Lexical representation of the duration fields and date for absolute time fields can be created by the help of a pop-up dialog.

To see the outcome of scheduling “Show schedule” can be pressed. It will open a pop up dialog with the scheduled execution times. The format of the times shown can be switched between DOY and CCSDS.



6.1.5.6.3 Subscription Schedule Tab

The Archive and File System Subscription schedule page looks slightly different to the above options, as shown in Figure 25:

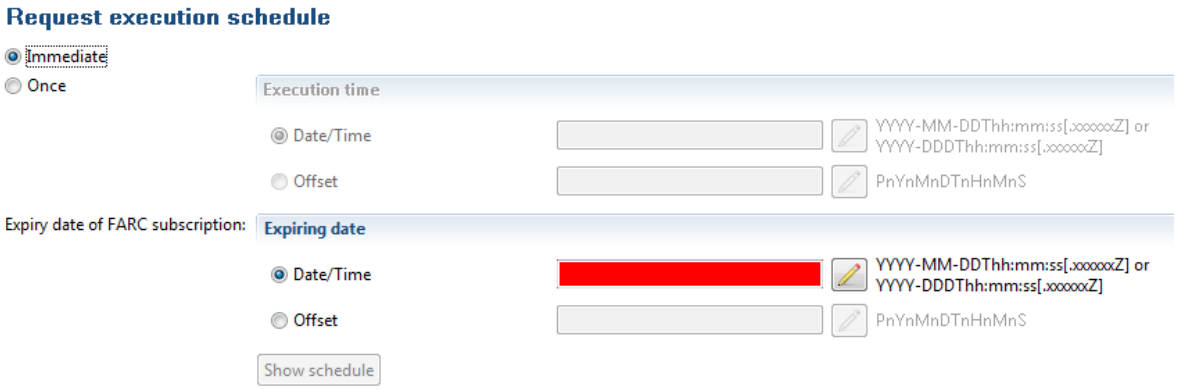


Figure 25 Archive Subscription Schedule Tab

A Subscription request can either be processed immediately, or at some later point in the future. If the request is set to be processed immediately, then any changes in the FARC (or designated folder for File System requests) that match this subscription will result in a request to obtain the specified file(s) from the back-end. If the request is set to be processed at a later date, then the request will stay as "SUBMITTED" and no updates will be received until the time for processing arrives.

All Subscription requests must have an expiry date. The expiry date can either be a specific date and time in the future (in either DOY or D-M-Y format) or specified as an offset from the execution date. A Subscription request will remain active until it either expires or the user manually cancels the request.

6.1.5.6.4 Filter Tab

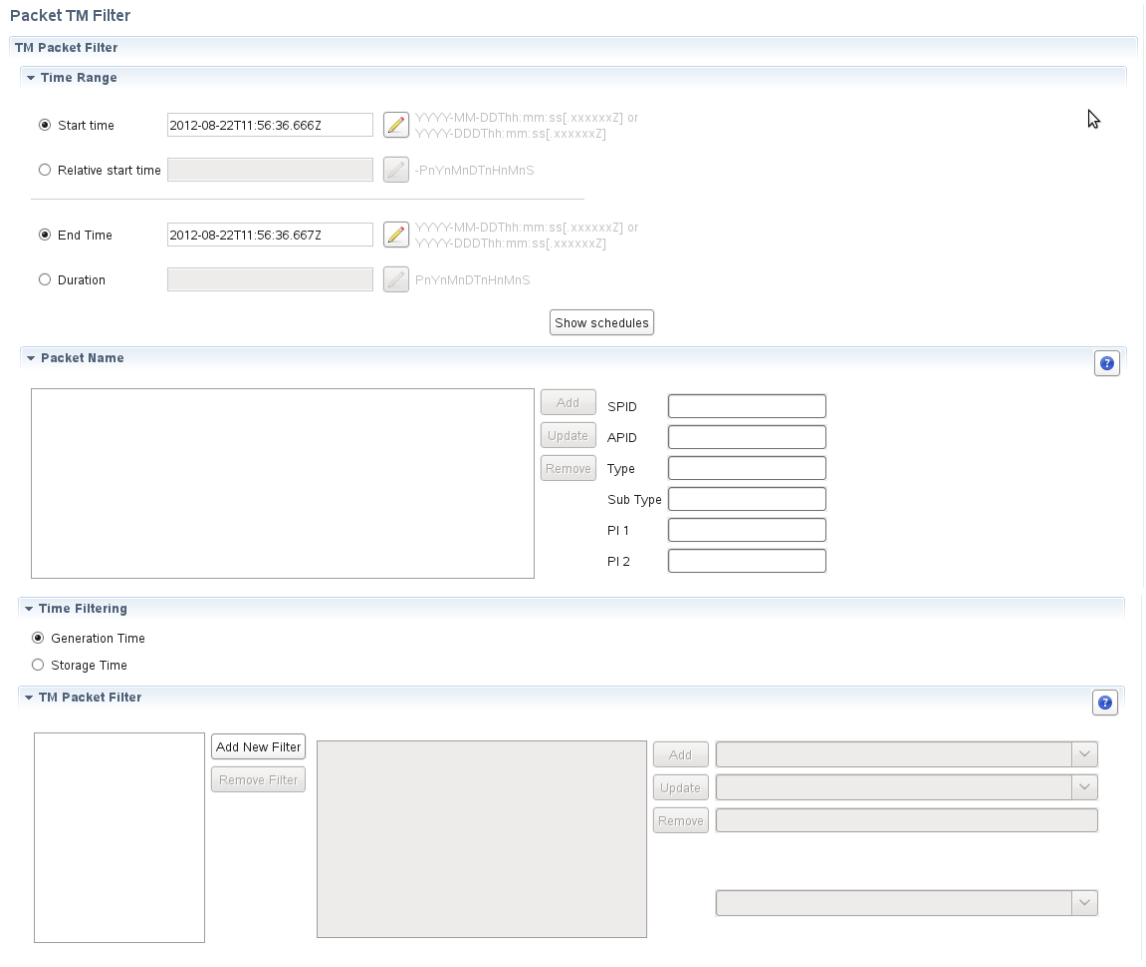


Figure 26 TM Filter Tab

The ***Filter*** tab shows the request filtering. The tab is named for each request type different. For example the tab is named ***TM Packet Filter*** for the TM packet request type. The sub sections of this tab can be different for each request type (see Figure 26). The Appendix B provides images for all the forms currently supported.

6.1.5.6.4.1 Entering Filters

6.1.5.6.4.1.1 Time Range

Time ranges consist of a start and end time, which can be entered using either absolute time or relative time (for end time called duration). Absolute time takes both the Day of Year (DOY) and CCSDS time formats. If the start time is entered as a relative start time, then the actual start time of the data retrieval is calculated as an offset from the actual execution time. The end time can then be entered as a duration, and is calculated as an offset from the start time. For example, if a scheduled request is scheduled to run every Sunday, and a relative start time is entered as "-P6D" (i.e. 6 days in the past), the data will be retrieved from the past six days from when the scheduled request is executed.

The schedule can be verified by clicking the "Show schedule" button. It will open a pop up dialog showing the execution times with filtering start and end times.

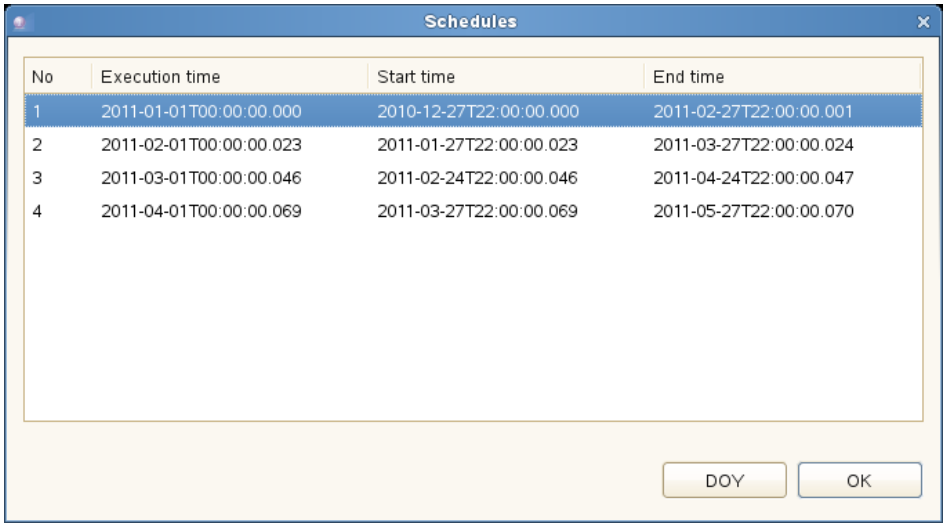


Figure 27 Schedule Information

Parameter, parameter preview and parameter statistics also enables to use the DARC last consolidation time as the end time on the filter. This will then be fetched on execution, which is especially valuable for scheduled requests.

6.1.5.6.4.1.2 Filtering SPID, APID, Type, Sub Type, PI1, PI2

For Packet TM and Packet TM Report requests, it is possible to specify the SPIDs of the packets you would like to retrieve. This can be entered in the filter under "Packet Name". A combination of SPID, APID, Type, Sub Type, PI1 and PI2 can be entered into the boxes then added to the list by clicking Add. A filter entered in this way performs an "AND" operation, i.e. a packet will only be retrieved if it matches *all* of the values entered. Adding another combination to the list is equivalent to an "OR" operation, i.e. a packet will only be retrieved if it matches at least *one* of the combinations in the list; it does not need to match *all* combinations. Negative filtering can be achieved by prefixing each value with an exclamation mark (!), and multiple values can be entered in each box by separating the values with a comma (,). Value ranges can also be used by specifying a start value (must be an integer) a dash (-) and an end value (also an integer). These ranges can be used together with the single values and are separated in the same way.

As an example, if you would like to filter for Type 0, every Sub Type between and including 1 and 10 and filter out SPIDs 10, 40, 50, then you would enter the following: SPID: "!10,!40,!50", Type: "0", Sub Type: "1-10" and click Add.

6.1.5.6.4.1.3 General Filtering

For Archive Catalogue request, you can optionally add a filter to just show catalogue entries for files of a particular type or created in a particular date range. Filtering by version number: version number is a combination of issue and release number, separated by a dot. For example issue 2, release 3 would be version “2.3”. Multiple filters can be added and these perform an “OR” operation – the entry will be added if it matches one or more of the filter options. For Archive File requests, you must specify at least one of the filter options, for example File Name, as shown in the catalogue request response.

All other requests have a general filtering option found at the bottom of each page. To add a filter, click “Add New Filter”. This will enable the filter box to the right of it. You can then select a filter option from the first dropdown box, then select match criteria from the second dropdown box, and finally either enter the filter value or select the filter value from the list, depending on the filter option selected. When finished, click Add to add the filter criteria to the filter list. You can add multiple filter entries for this filter by repeating this procedure. The result data will only include data that matches *all* of the filter entries in this box. You can perform an “OR” operation by clicking “Add New Filter” and repeating this procedure. The result data will only be included if it matches *one or* more of the filters listed in the first list (called “Element_1”, “Element_2” etc.).

In the case of the Packet TC Report, the filter element “Passed” refers to the overall verification stage.

6.1.5.6.4.2 Parameter list

For the parameter related requests (Parameter, SMON parameter, parameter statistics, parameter preview, parameter report) filtering is performed by defining the required parameters in the ‘Parameter names’ section. The user enters parameter names into the text box and adds or updates the Parameter filter. The user can also enter a wildcard regular expression; any parameters fulfilling the criteria will be included in the filter. Note that the entry is case sensitive, to “CMDMOD” doesn’t match “cmdmod”.

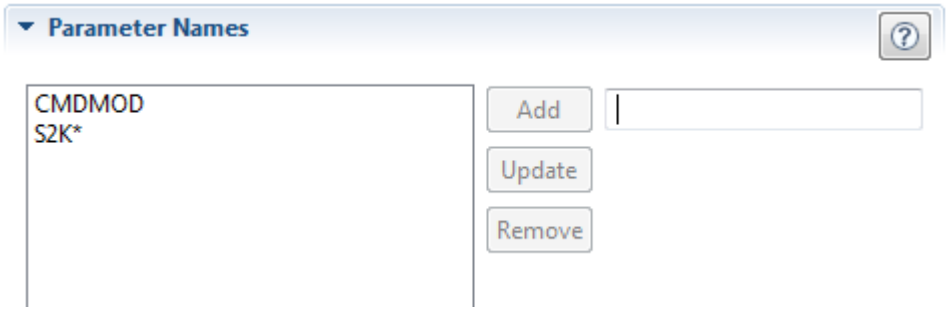


Figure 28 Parameter List

Parameters can also be added from the **Parameter View** by dragging the selected items and dropping them into the **Parameter Names** list. The description of a given parameter is displayed as a tool tip when the item is selected in the list.

One or multiple parameters may be removed from the Parameter list by highlighting the parameter(s) and selecting ‘Remove’. Multiple parameter names can be selected for removal by holding down Shift or Ctrl.

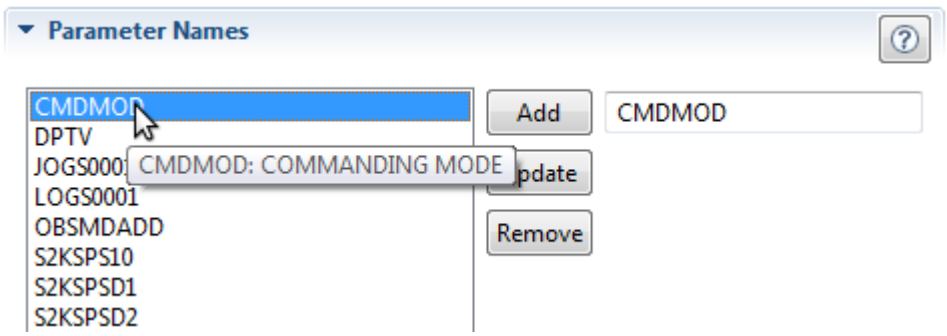


Figure 29 Parameter Tooltip

It is possible to enter a free text parameter of any value into the Parameter Name field. Should the parameter entered not exist in the DARC or SMON, EDDS will attempt to retrieve the data for the parameters that do exist. The final status of the request will be “DELIVERED_PARTIAL_RESULTS”. The unknown parameters can be viewed by right-clicking on the request and downloading the full status report. If none of the parameters exist, the request status will be “COMPLETED_NO_RESULTS”

6.1.5.6.4.3 Dataspace option

For DARC parameter and PARC requests, it is possible to select the dataspace to retrieve the data from for the request. The first option is always “EDDS Default” or “Current data space” if, for example for the PARC request, the dataspaces are disabled (perhaps if the old PARC API is used). “EDDS default” is the default dataspace to be used as defined in the EDDS Server properties file; separately for DARC and PARC. The next option is the currently active dataspace in the DARC or the current one in PARC. The following dataspaces (if any) are sorted alphabetically. Additionally the last consolidation time from the DARC database will also be shown according to the currently selected DARC dataspace.

6.1.5.6.4.4 Delivery Range

By default all the parameter samples will be included in the response. With delivery range filter, the data can be re-sampled so that only every n-th sample will be stored or only maximum one sample per a set time period will be delivered (e.g. maximum 1 sample every 3 minutes). The resampling is done based on generation time of the samples.

Warning: this filter will be ignored when all of the following conditions apply:

1) all the parameters are requested (param filter = *),
2) there are no applicable quota restrictions for allowed parameters
3) storage time time filtering is used.

The delivery range option allows for further filtering of the results retrieved. These are:

- Sample Number – only every nth sample will be included, where “n” is the value entered in the box.
- Sample Time – the parameter will only be included if it falls within the frequency specified in the box. The data is entered as a duration object.
- None – no extra filtering is performed, all the results are returned

6.1.5.6.4.5 Representation Selection

Applies to the TDRS format only. Selecting "Engineered representations" will result in the TDRS report using the engineering values obtained from the DARC. Selecting "Raw representations" will result in the TDRS report using the raw values. Note that if EDDS is connecting to DARC v2.2.2 or earlier, where the raw values are not provided, the TDRS report will ignore this selection and display ENG instead. The value shown in these versions of the DARC will be the engineering value where given, or the raw value if no engineering value is available.

6.1.5.6.4.6 DARC v2.3.0 and later

When connecting to DARC v2.3.0 or later, additional information is available in the response files:

- Times will be shown to microsecond level precision
- The raw value will be provided, along with its type
- The ID of where the parameter came from, parent ID will be provided. For SCOS, this would be the TM Packet SPID
- The generation time of the parent packet, parent generation time. For SCOS, this would be the generation time of the TM packet

When connecting to DARC v2.2.2 or earlier, this additional information will not be available.

6.1.5.6.5 Delivery Options

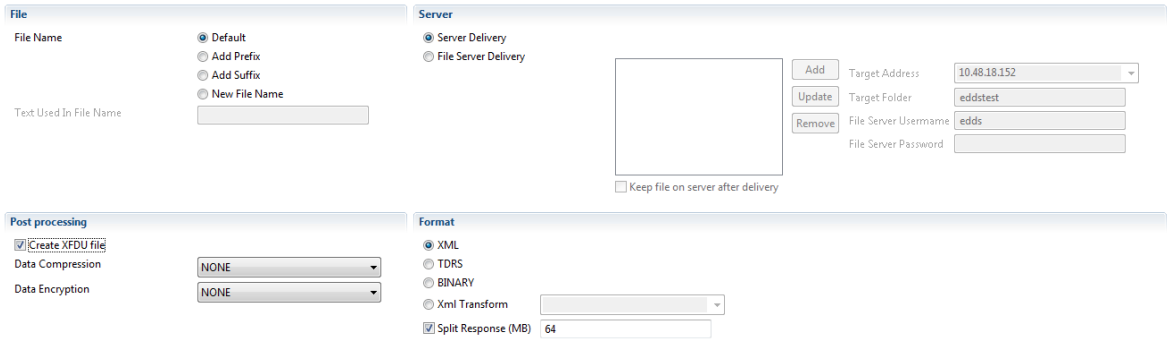


Figure 30 Delivery Options

The Delivery Options tab enables a user to fine tune request response details. Like file format, name, delivery mechanism and post processing options. Only file format option depends on the request type. All other options are general and the same for every request type.

6.1.5.6.5.1 Post processing

Optionally, an XFDU file can be produced along with the response files for the request. The XFDU file is an XML file containing additional metadata about a file, such as its name, checksum and size. If encryption is enabled, the XFDU file will also be encrypted and will include the checksums of the original unencrypted files. If compression is enabled, the XFDU file will be contained within the compressed file.

6.1.5.6.5.2 Response Format

Each request has a number of predefined formats you can get your response in. All the requests, that have XML as one of the formats, also have XML Transform as an option. For additional XML Transformation stylesheets to be available on EDDS Servers, they must be added by the EDDS administrator.

The TDRS spreadsheet format output is provided by default. The “Param/TDRS.xsl” file is used to transform the XML response of TM Parameter request into the TDRS spreadsheet format. For larger response files, it is recommended to use the TDRS format option directly rather than the stylesheet. Some of the formats (see Table 2) also support splitting large response files into smaller chunks. The separate parts can be identified as they have a dot and a number that is incremented for each part appended to the end of the response filename (before the extension part). This feature can be enabled by the EDDS Administrator in the EDDS Server configuration and overridden in individual requests by ticking the “Split Response (MB)” checkbox and entering the split size in megabytes. Splitting can be disabled for an individual request by entering “-1” in the box. If the box is left unticked, then the default split size specified in the EDDS Server properties is used.

Format / ***Request Type***		*EDDS Binary*	*Binary*	*XFDU*	*XML (XML Transform)*	*ASCII*	*Others*
Packet	*TM*	✓*		✓			GDDS_BINARY*, SFDU
	TM (PARC Raw)		✓*		✓*		
	TM Report		✓*		✓*	✓*	
	TM Statistics				✓		
	TC	✓*		✓			GDDS_BINARY*, SFDU
	TC (PARC Raw)		✓*		✓*		
	TC Report		✓*		✓*	✓*	
	TC Statistics				✓		
	EV	✓*		✓			
	EV (PARC Raw)		✓*		✓*		
	Event Record Report		✓*		✓*	✓*	
	EV Statistics				✓		
	OOL Record		✓*		✓*	✓*	
Parameter	*TM*		✓*	✓	✓*		TDRS
	TM from SMON		✓*	✓	✓*		TDRS
	Statistics				✓*	✓*	
	Preview				✓*	✓*	
	Definition		✓*		✓*		
Report	*EddsUsage*				✓		
Archived Files	*File (and File Subscription)*		✓	✓			
	Catalogue				✓	✓	
File System	*File Catalogue*				✓	✓	
	Folder Catalogue				✓	✓	
	File (and Subscription)		✓				

The formats marked with * support splitting the response files into smaller chunks (and also support suspend and resume).

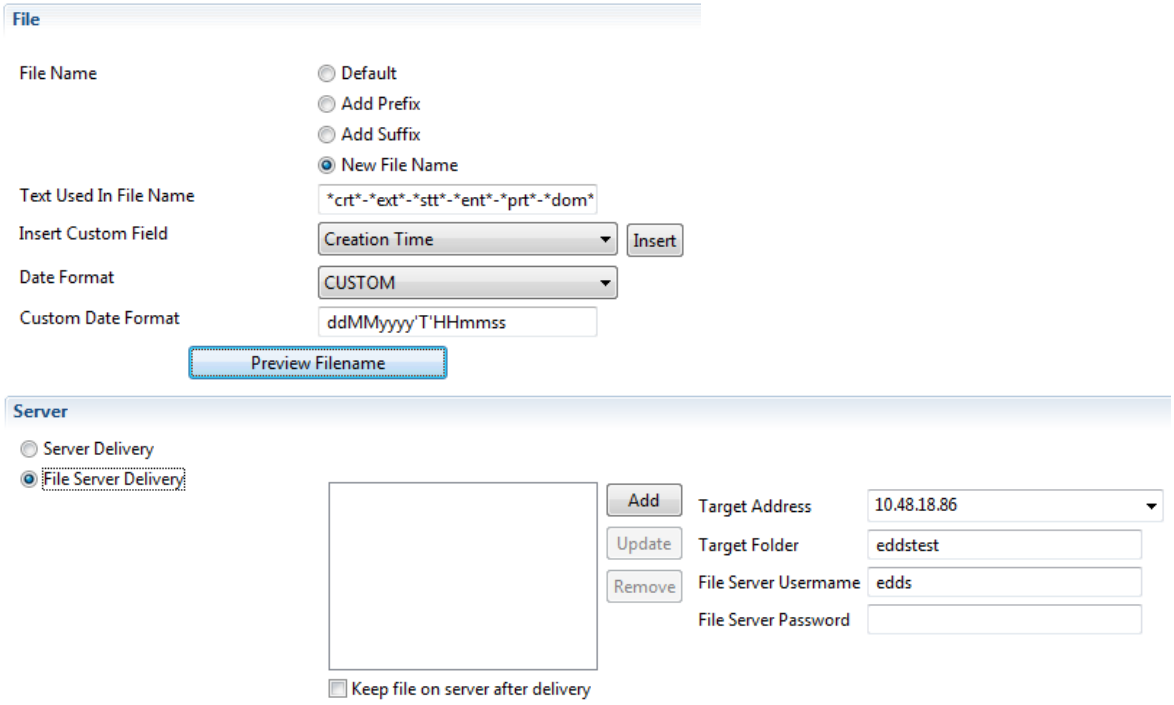
Table 2 Possible Format Types for each Request Type

6.1.5.6.5.3 Server Selection

File server delivery or Server delivery are the two options that users may select to define how the response file of the request will be delivered. The 'File Name' section of delivery, allows the user to define the filename of the response file to be delivered for both delivery options.

File server delivery – files can be delivered to one or more remote file servers. The user can either enter the target address of the file server or select a default address from a combo box. The combo box is populated with the default file server addresses from the user's contact details. If the target address and/or the user name were filled in for the default target server then these fields will also be populated from the user details. Multiple entries can be added by entering the details of the target, then pressing the "Add" button. Existing entries can be removed by selecting them in the list then pressing "Remove". To make a correction to an existing entry, select it; make the necessary changes in the text fields, then press "Update". The list must contain a unique combination of target address, folder, username and password. The user can edit the existing location folder copied from the user profile on the server where to deliver the file. Tick the box "Keep file on server after delivery" to leave the delivered file on the EDDS server, so that it can later be downloaded from the MMI if required, otherwise the file will be removed from the EDDS server after it has been successfully copied to all the remote target destination/server.

Server delivery – depending on the 'Privacy tag' selected the response files will be delivered to a location on the server where the delivery manager is running. The user can then use the 'Download Response' option from the request summery view or their FTP account to access the file.
File Name – this section allows the user to define the filename of the response file to be delivered.
If the user selects '***Default'*** an EDDS server generated name will be used. The default name is composed of the request type and subtype, request id, submission time and completion time (See EDDS ICD [AD-2] Section 6.7, "Request ID Format").
A suffix and/or prefix can be added to this default name by selecting the '***Suffix'*** or '***Prefix'*** radio button and defining the text in the field '***Text Used in Filename'***.
The ***'New File Name'*** option will completely replace the default response filename with the text entered in the text field.



The ***'New File Name'*** can also contain special tags that are replaced by EDDS with data from the request. For example, entering "*crt*" will mean that when the request is executed, the tag will be replaced with the time the request was created. For convenience, there is a dropdown list called ***'Insert Custom Field'*** containing all of the possible tags. Simply select an entry, then press ***'Insert'*** and the tag will be added at the current cursor point in the new file name box. Normal text can also be added, and this will become part of the filename. Only special characters that are not allowed in filenames are not allowed, for example: ':', '/', '\', '*', '?'. Entering these symbols will result in the filename box turning red.

The complete list of special file name tags is as follows:

- Creation Time (*crt*)
- Execution Time (*ext*)

- Start Time (*stt*)
- End Time (*ent*)
- File Split (*prt*)
- Domain (*dom*)
- Mission (*msn*)
- Request Type (*rqt*)
- Request Sub Type (*rst*)
- Checksum (*chk*)

For time fields, the format of the date can either be “CCSDS” (i.e. dd-MM-yyyyTHHmmss.SSSSSS), “DOY” (i.e. ddd-yyyyTHHmmss.SSSSSS) or “CUSTOM”. Selecting “CUSTOM” will enable the ***‘Custom Time Format’*** box. Enter the custom format in the box. Note that colon characters will be removed from the final filename, as they are not allowed in filenames. The following list shows the special characters that can be used. You can also include arbitrary letters in the format that won’t be parsed, by including the character in single quotes, e.g. ‘T’.

- yyyy - For year, e.g. 2014
- MM - For month, e.g. 12
- dd - For day, e.g. 31
- hh - For hour (12), e.g. 11
- HH - For hour (24), e.g. 23
- mm - For minute, e.g. 59
- ss - For second, e.g. 59
- SSSSSS - For microsecond, e.g. 123456

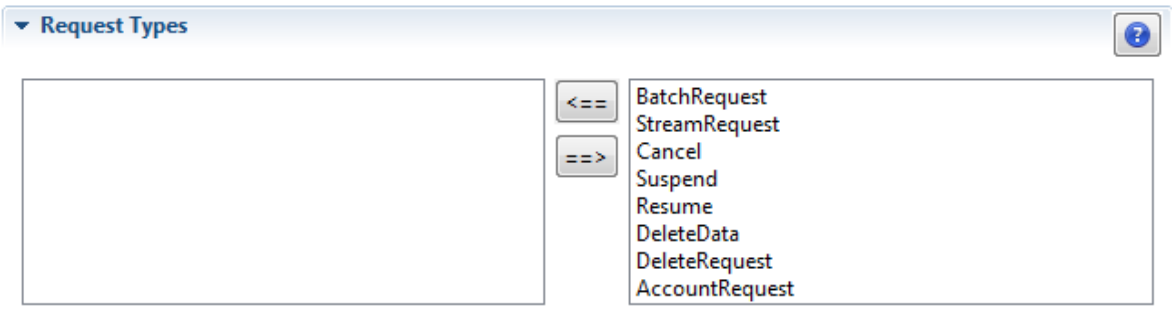
It is recommended to always include the File Split number in the filename where possible to ensure the filenames are unique for multiple response files. Should a custom filename result in non-unique filenames for multiple response files, the generated filename will be used for the second and subsequent files.

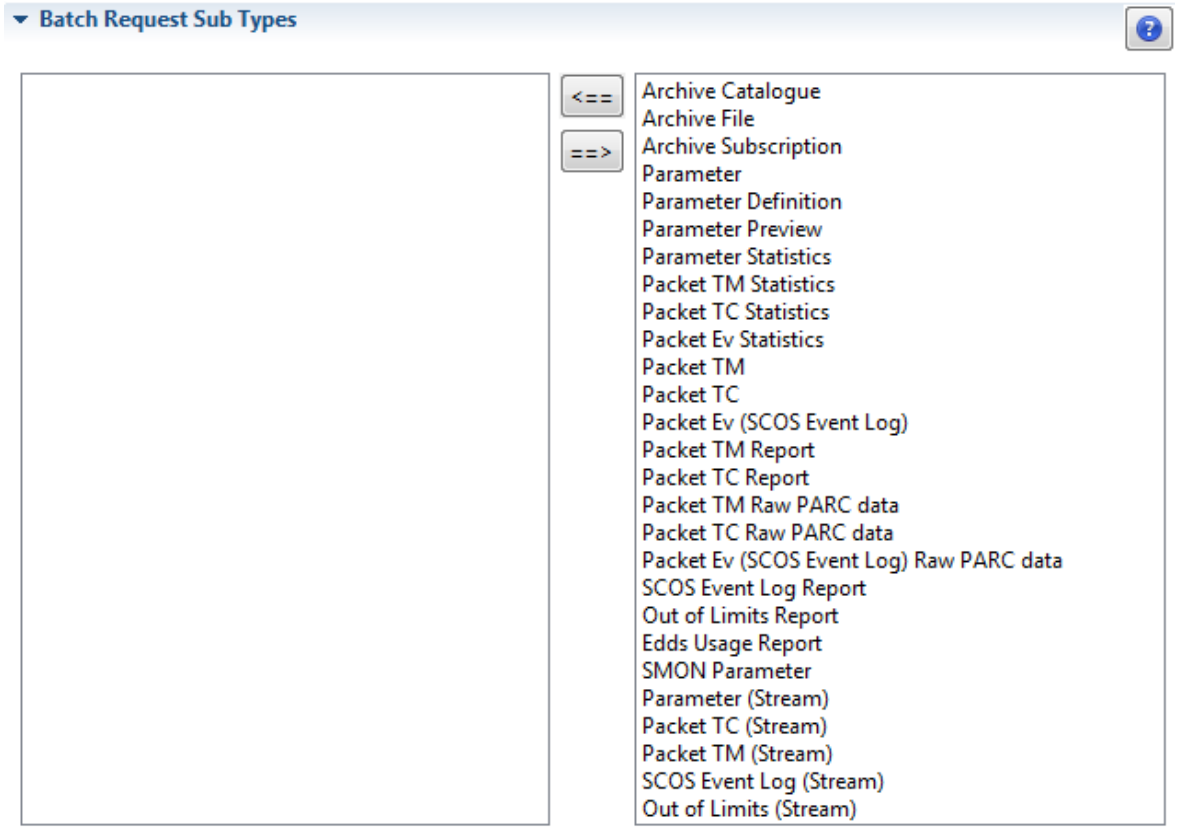
6.1.5.6.5.4 Filtering the EDDS Usage Report

The EDDS usage report displays statistics and summary information of a user’s requests that fulfil the filtering criteria, for a specific mission.

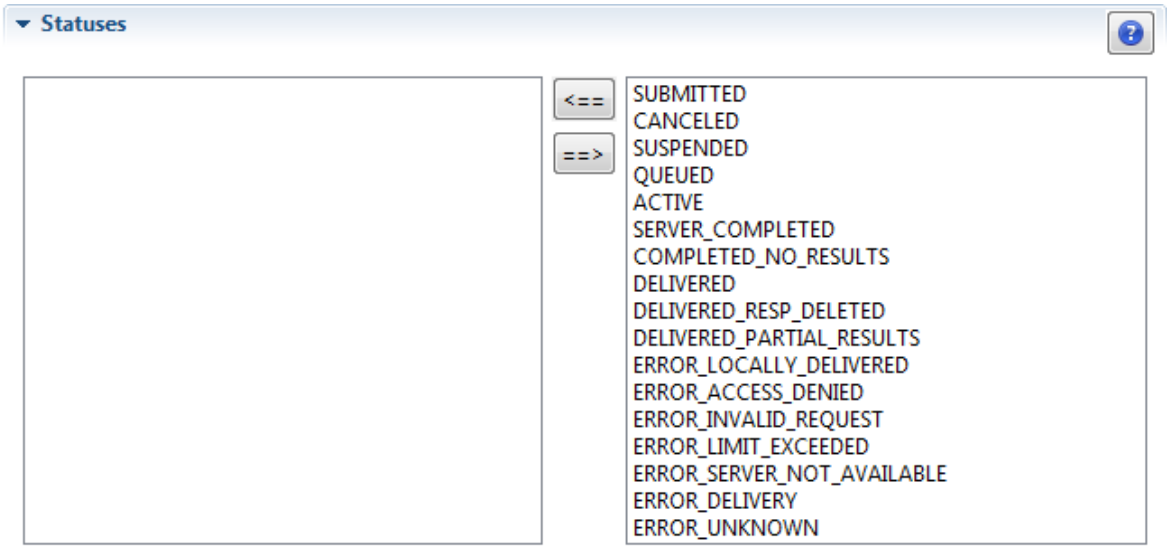
The first definable filter is the ‘Time Range’. Only the requests that are scheduled for execution between the ‘start time’ and ‘end time’ will be considered.

The Request Type filter can be used to include requests of a particular type. Leaving the selected list blank will include all request types. It is also possible to filter on specific sub types of request – for example just parameter requests. Again, leaving the filter empty has the same effect as selecting all entries. It is not possible to select invalid combinations in the filter. To prevent the creation of a request which would return no results, the batch request sub-types will be emptied and disabled until a batch request type is selected. To add request (sub-)types for filtering, select one or multiple (sub)-request types from the box on the right and click the ‘<==’ button. The (sub)-types will be moved to the left box. They can be removed by selecting the (sub-)types on the left and clicking the ‘==>’ arrow.

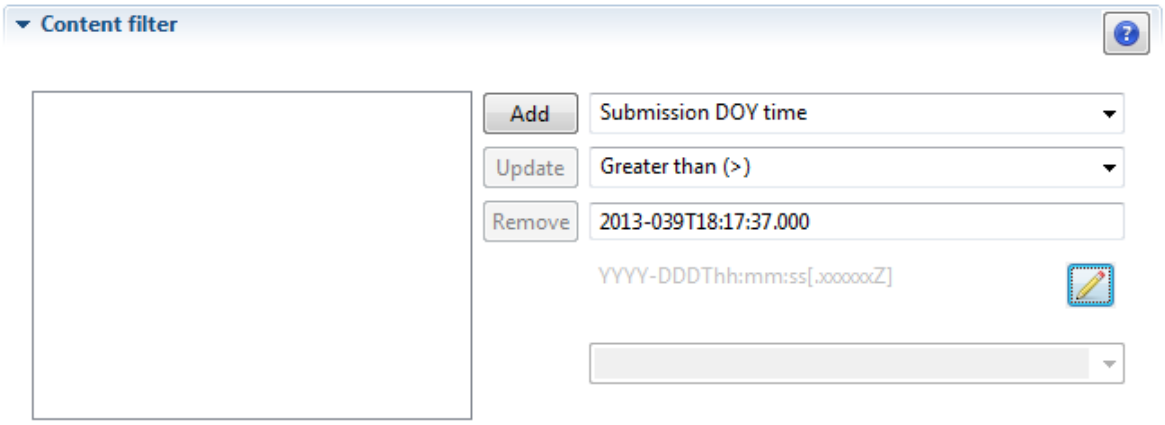




Next, the 'Status selection' boxes can be used to include requests which are in a specific state. To add states for filtering, select one or multiple statuses from the box on the right and click the '<==' button. The selected statuses will be moved to the left box. To remove statuses to be filtered, highlight them within the left box and click '==>', the status will be returned to the right box.

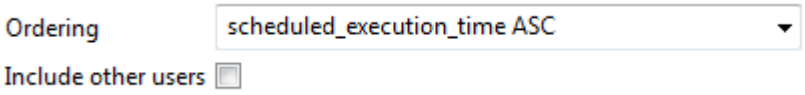


The content filter can be used to further define the requests to be retrieved for the usage report. Filtering can be applied on several fields of a request.



Finally, non admin users will only receive information on the request they have submitted. Admin users are able to enable the 'Include all users' check box to access requests of all the users.

The order in which the requests are displayed can be defined in the ordering combo box.



6.1.5.6.5.5 EDDS Usage Report Output

Note that in the output of the Usage Report, the processed requests count counts all the requests that have the following state: DELIVERED, DELIVERED_RESP_DELETED, ERROR_LOCALLY_DELIVERED, DELIVERED_PARTIAL_RESULTS and COMPLETED_NO_RESULTS

The number of deleted requests count only includes requests that have been deleted via the EDDS MMI. Those manually deleted in the database or through the scheduled removal of old requests feature in EDDS are not included.

6.1.5.6.6 Acknowledgement Tab

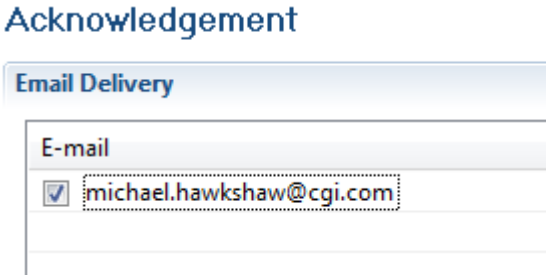


Figure 31 Acknowledgement Tab

The ***Acknowledgement*** Tab displays the acknowledgement data of the request. The user can add their email address to receive acknowledgements by updating their user account details (see Figure 31). The mission admin can configure the acknowledgements to be transformed, so instead of receiving them as XML they can be formatted first.

6.1.5.6.7 Validation

If a text box contains invalid data (e.g. a date text box) then the background colour of the text box will become red. If any of the fields on the form are invalid, it is not possible to perform the request.

6.1.6 Stream Request Form Editor

The stream form editor is very similar in functionality to the batch request form editor shown in the previous section. The main differences are:

- **Overview Page**: No option is present for choosing the privacy option, as no data is saved on the server.
- **Schedule Page**: Same as the Archive Subscription Schedule Tab (see Section 6.1.5.6.3). The expiry date is used to set the time at which the stream request will end. When it ends, the status changes to “SERVER_COMPLETED”.
- **Filter Page**: Same as the batch filter pages, except no delivery, post processing or formatting options are present, as no data is saved.
- **Acknowledgement Page**: Not present for stream requests

6.1.7 Live Stream Viewer

6.1.7.1 Opening the Stream Feed Viewer

Once a stream request has been submitted and the EDDS Server has started the stream (the status of the request is shown as ACTIVE in the Request Summary View) it is possible to view the stream by right clicking on the request in the Request Summary View and selecting “View the Data Stream”

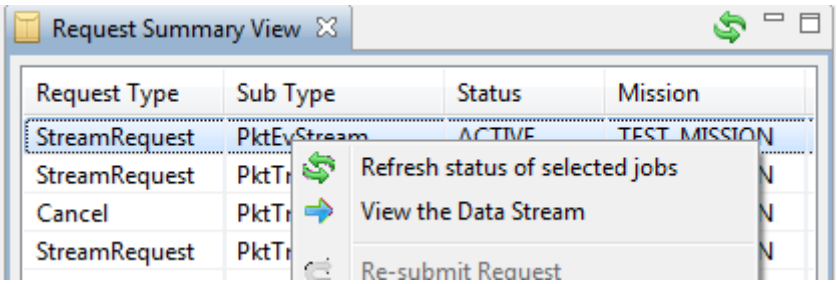


Figure 32 How to view the stream feed

The relevant Stream Viewer will be displayed (see example in Figure 33):

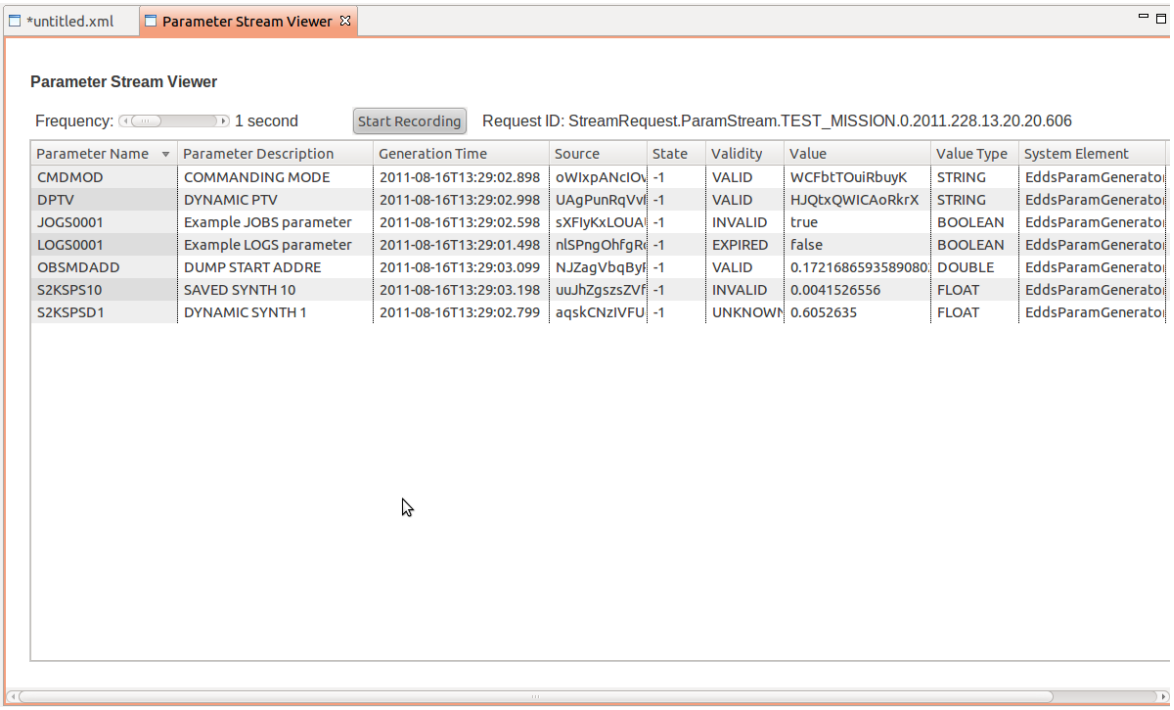


Figure 33 Parameter stream feed view

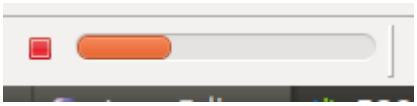
6.1.7.2 Changing the Refresh Frequency

The EDDS MMI receives a constant stream of parameters from the server. The parameters received are sent very frequently, as many as 3000 parameter samples per second. It is therefore not possible to view every single parameter sample received in this view, so an update frequency must be selected so that only the very most recent parameters every x seconds are shown. The initial update frequency is taken from the EDDS Preferences view, which can be changed by selecting Window and Preferences. A whole number between 1 (most frequent update) and 60 seconds can be entered. The frequency can be changed for the current request by dragging the frequency slider shown in Figure 33 to the left (more frequent update) and right (less frequent update).

6.1.7.3 Recording the streamed data

For parameter streams, it is possible to record the stream of data being received to disk, for later analysis. Every parameter received is saved, unlike the table view, which can only display the most recent parameters received at most every second. For performance reasons, the stream is saved to disk in a temporary file in a binary format (using Google Protocol Buffers) which is deleted automatically when it is no longer needed. When the stream is saved, the binary file is converted to a human readable XML format as per the Parameter batch request response XML format. To save the stream, perform the following steps:

1. Press the “Start Recording” button on the Parameter Stream Viewer. The page will shown with an asterisk (*) in the title to show it has unsaved changes, and the button will change to “Stop Recording”.
2. When you want to save the stream to XML, press the “Stop Recording” button and then press the Save button. You can also just press the save button straight away; the application will stop the recording for you automatically.
3. Enter a filename for the data to save and press OK
4. The previously recorded data will be saved to disk in an XML format. This process may take a while, depending on how long the recording had been made for. A progress bar shows how long the process will take. The saving process can be cancelled at any time by pressing the red stop button on the status bar:



5. Once the recording has been saved, the temporary recorded data is deleted and it is not possible to perform another save operation for the same recorded data. If the stream view is closed and the user chooses not to save the data, the temporary recording will also be removed.

If you start a new recording before saving the previous one, the application will ask you if you want to save the previous recording first.

6.1.8 Request View

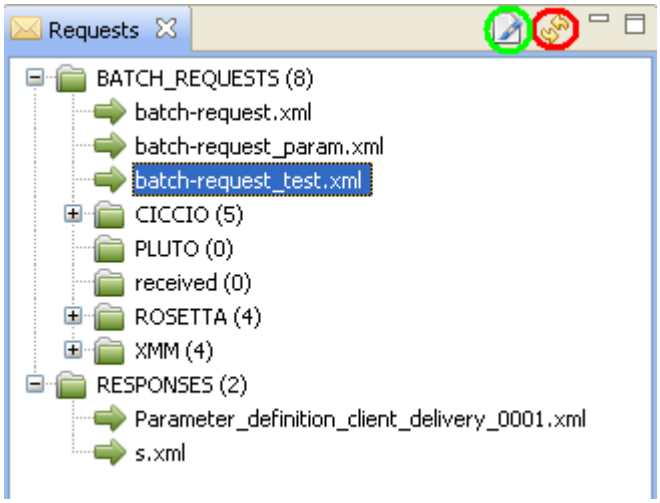


Figure 34 Request View

The ***Request View*** displays all files and folder of ***EDDS_HOME***. This variable needs to be configured on start-up configurations or in application Preferences.

To refresh the file tree shown in this view the user can click on the ***Refresh*** icon (Figure 34 marked with a red circle). This is necessary if something has changed on the file system.

To open a Batch Request in the form editor, the user can double click on a file. Another option to open a request is to press the ***Edit*** icon (Figure 34 marked with a green circle).

6.1.9 Parameter View

The ***Parameter View*** displays parameter definitions handled by the DARC (known as Data Definitions within the DARC). The display will show all the parameters for the first mission retrieved when the application is started. Selecting another mission from the dropdown list will initiate the retrieval of parameter definitions for the selected mission. The parameters shown are all active and non-active parameters. To change the data shown (e.g. dataspace or which DARC database to connect to), the configuration of the EDDS Server for the selected mission must be changed. Refer to the Configuration and Installation Guide (CIG) [RD-1] for more information. The user can filter this parameter list. There are two options to filter. The first one is the ***Fast Access***. When the user types in a string, a filter will be applied to the name and description of each parameter. Parameters which contain the string in either the

name or description will be displayed in a parameter list. The list will be dynamically updated when the user types the string.

The second way of filtering is the ***Filter tab***. The user can specify a name, description and whether a parameter is active or not to be separately filtered. Additionally the relation can be defined for the name, description and active status. The filter will be applied when the user press the ***Apply*** button.

6.1.9.1 Drag and Drop to Parameter Request Filter

Items from the **Parameter View** can be used to populate the parameter filter options of a request. Simply drag and drop the desired parameters from the **Parameter View** table (Figure 35), to the **Parameter Names** filter box (Appendix B.3), within the request window. Multiple items can be selected at once by either selecting the first parameter, holding down the shift key and selecting the last parameter to include in the selection block, or by holding down the Control key while selecting items to select non-adjacent parameters.

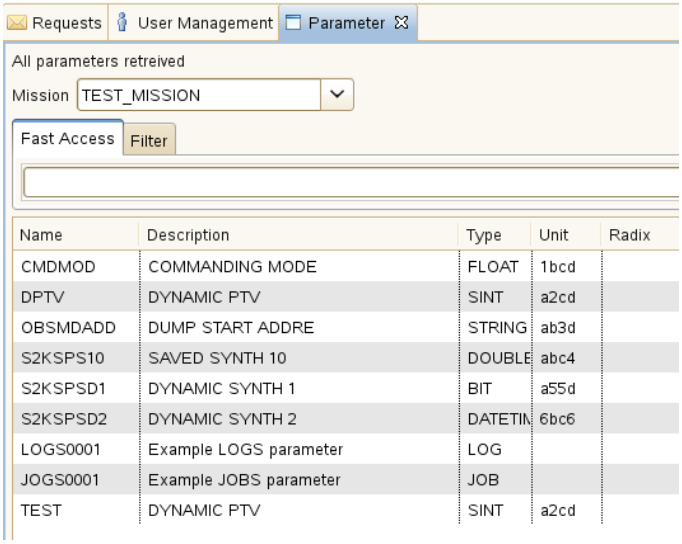


Figure 35 - Parameter view

6.1.10 Quotas View

The ***Quotas View*** visualises the user quotas according to current data and set limits. The user can select a mission for which the quotas will be showed. Quotas will be displayed for each role that has been assigned for this user inside selected mission. The quota information will be automatically updated, but can be manually refreshed by pressing the “Refresh” button. The EDDS Archiver must be running for the quota information to be displayed.

EDDS Administrators can view the quotas of all users in the system, and EDDS Mission Administrators can view the quotas for all users assigned to their mission. The user can be selected from the “User” dropdown list, or the name can be entered into the box. The EDDS MMI will autocomplete the entry as it is being entered. To accept the entry, press enter. To ignore the suggested completion, simply continue typing and the search will be refined.

There are 4 types of quotas that can be applied (i.e. number of requests in a period, number of ongoing requests, amount of data in a period, disk space used per period), but only the ones that have been specified in the quota set are shown for each role. Note that any SPID and APID restrictions are not shown here as they do not change with time or depend on the number of requests submitted.

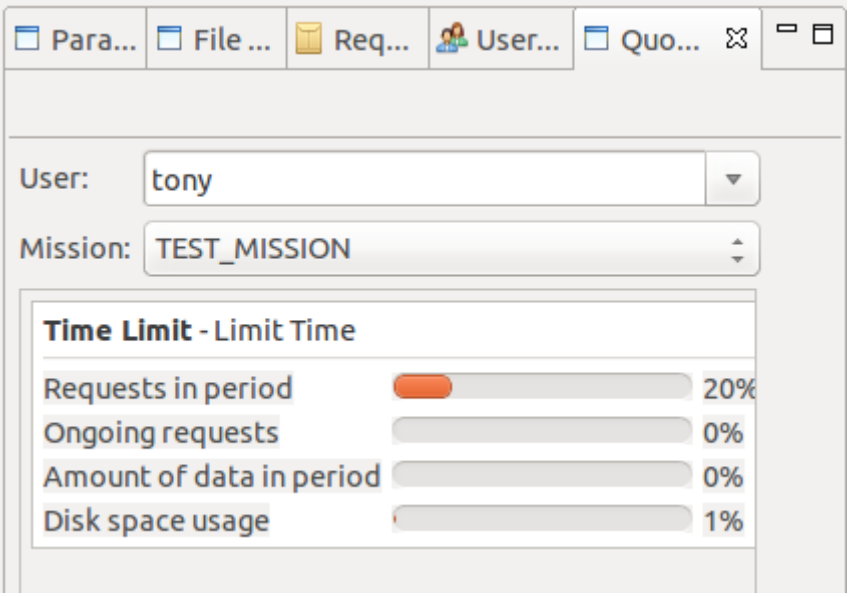


Figure 36 – Quota View

6.1.11 File View

File View is a container for two similar views – FARC Catalogue View and File System View. These views are split into separate tabs and can be navigated similarly.

Both views display the catalogue in a tree where the folders can be expanded and collapsed to show the contents. Users can select the mission (and domain for FARC) to select the catalogue to be displayed. The currently open view can be refreshed with data from the back-end by pressing the “Refresh” button (or F5 when the view is active).

The whole catalogue tree is not populated all at once, because it may contain a lot of entries, instead each folder is only populated when the user explores its contents by expanding a folder.

6.1.11.1 FARC Catalogue View

From the tree view a user can drag and drop selected items to an Archive File request filter, Archive Catalogue request filter or to an Archive Subscription filter, so that they do not have to add these items manually. A tree can be fully expanded or collapsed by right clicking on the tree and selecting “Expand selection” or “Collapse selection” respectively. Each column is also easily sortable by a click on the name of the column.

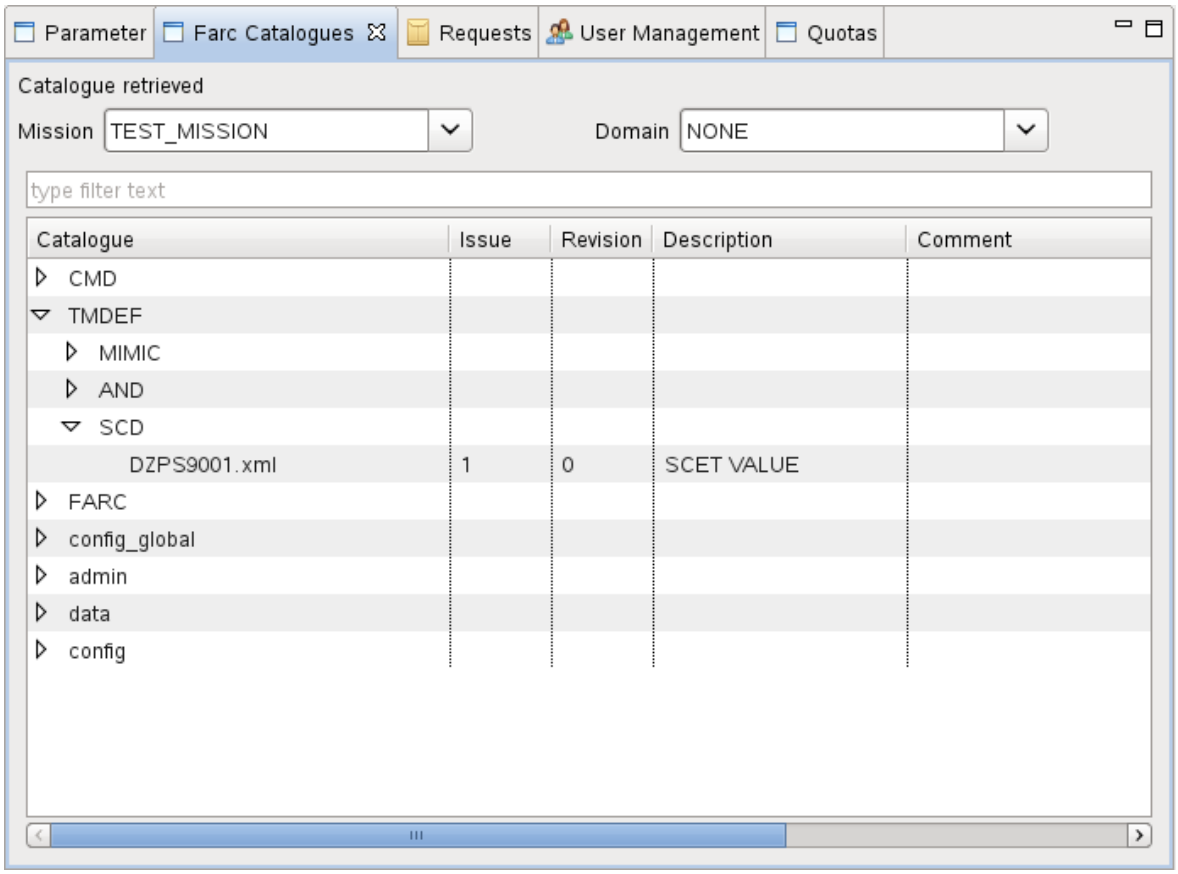


Figure 37– FARC Catalogue View

6.1.11.2 File System View

This shows the catalogue tree of a designated remote folder on the file system of the EDDS Server.

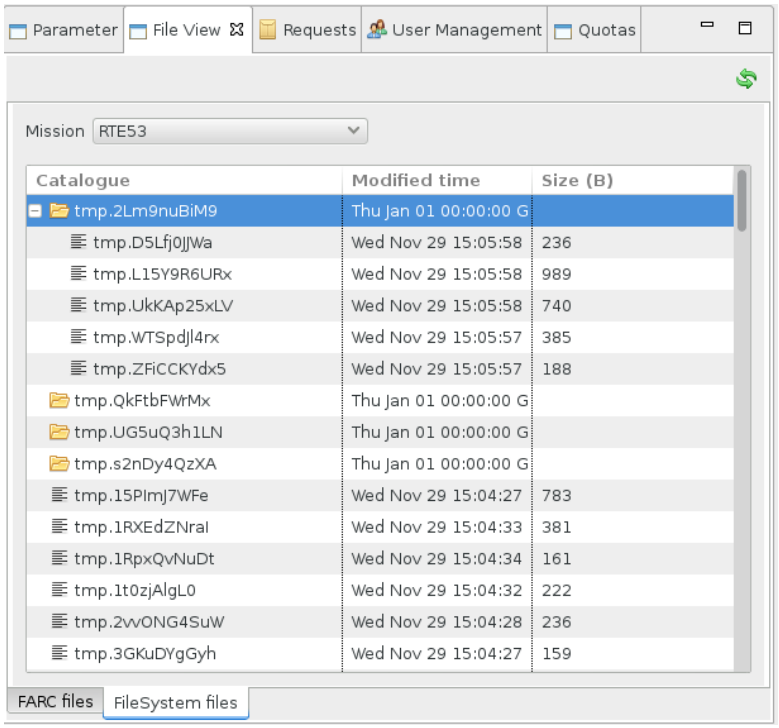


Figure 38 - File System files View

The items can be dragged from this view to populate the File System Request filters. By clicking on the “Catalogue”, “Modified time” or “Size” columns the items in this view are sorted by their file and folder name or by their file modification time or size respectively. Thereby, folders are always displayed on top of files in the respective hierarchy level. Clicking multiple times on a column switches between ascending and descending sorting.

6.1.12 Historical Message Display

The historical message display shows the logging information from the EDDS server, Delivery Manager and web server for a defined period. To retrieve the logs, from within the ‘History Message Display’ panel enter a time range and click ‘OK’. Only users with the VIEW_LOGS permission or admin users can view the server logs. Filters can be applied by pressing the “Define Filter” icon. You can filter on the columns and also toggle which severity of messages are shown. The filter can be removed by pressing the “Enable or Disable Message Filter” button.

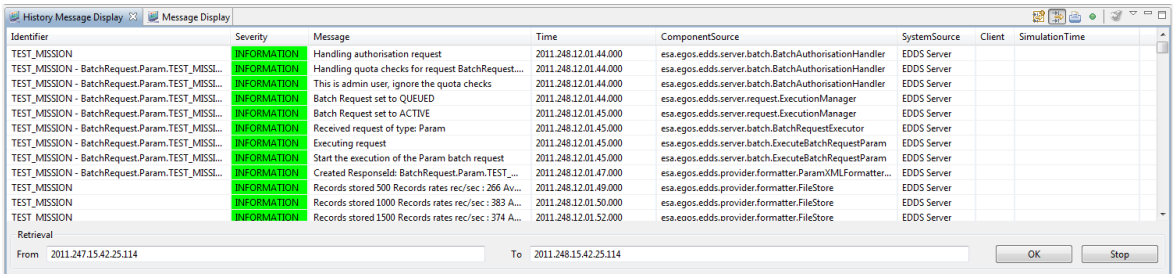


Figure 39– Historical Message Display

6.1.13 Message Display

Live log messages can be viewed through the ‘Message Display’ panel. Live log messages are displayed as soon as a user with the VIEW_LOGS permission or an admin user logs in. You can pause the display of log messages by pressing the Pause button, and resume by pressing the Play button. When an error log message is received, the alarm button flashes red. Click the “Open Acknowledgement Display” button and select “Acknowledge All” to reset the button. Filters can be applied by pressing the “Define Filter” icon. You can filter on the columns and also toggle which severity of messages are shown. The filter can be removed by pressing the “Enable or Disable Message Filter” button.

6.1.14 Other Menu Options

As the EDDS MMI is based on EGOS User Desktop, a number of extra menu options are present. Note that some of these menu options may change depending on the operating system being used.

6.1.14.1 File

6.1.14.1.1 New EUD Displays

This option allows the user to display the History Message Display window, if it is not already visible.

6.1.14.1.2 Print

Not used by EDDS.

6.1.14.1.3 New Request

Starts the New Request wizard for creating a new request form.

6.1.14.1.4 Open Request

Allows the user to open a previously saved request. A quicker way to open an existing request is to use the Requests view.

6.1.14.1.5 Exit

Quits the application.

6.1.14.1.6 Convert Line Limiters To

Allows the user to change the end of line limiters to a different format (Unix, Windows or Mac OS 9). The default is Unix. For Mac OS X, select Unix. This option is only available when a text file is open.

6.1.14.1.7 Open File

Allows the user to open any file on disk. Typically this would be used to open a downloaded response file.

6.1.14.2 Workspace

6.1.14.2.1 Show Workspace View

Shows the History Message Display view.

6.1.14.2.2 Load Workspace

Loads a previously saved workspace layout.

6.1.14.2.3 Save Workspace as

Enables the current workspace layout to be saved.

6.1.14.3 Window

6.1.14.3.1 Lock the Toolbars

Prevents the toolbars from being changed.

6.1.14.3.2 Open in New Window

Opens a new EUD window.

6.1.14.3.3 Show View

Allows the user to re-open any closed views (e.g. the Request Summary View) in case it has been closed. The EDDS views can be found under “Other” in the “Show View” dialog.

6.1.14.3.4 Preferences

Shows the EUD and EDDS preferences window

6.1.14.4 Help

6.1.14.4.1 Help Contents

Shows the EUD Help file.

6.1.14.4.2 Search

Searches the EUD Help for a particular text string.

6.1.14.4.3 Dynamic Help

Shows the Dynamic Help window.

6.1.14.4.4 Key Assist

Shows common keyboard shortcuts

6.1.14.4.5 About EGOS User Desktop

Shows the EUD About window

6.2 EDDS MMI Web Application

EDDS also provides a web-based MMI application which offers mostly the same features as the standalone installation. There are a few differences though mostly because browsers and web pages do not have the same privileges to access your local file system. These differences are discussed here. All of the information in previous section still applies if it is not mentioned in this subsection.

6.2.1 Application Start Up

The EDDS MMI Web Application can be started by pointing your browser to the URL provided by the installation team. Usually it looks like:

http://hostname:8080/eddsweb/eddsMmi

EDDS Web MMI is based on RAP platform. The default RAP Web client supports these browsers:

- Internet Explorer 9+
- Google Chrome 29+
- Firefox 23+
- Safari 6+
- Opera 15+
- iOS 6+
- Android 4 (Limited)

No browser plug-ins are required by the client, only JavaScript needs to be enabled.

When the MMI is started, a number of default settings are loaded from the environment. Most notable of these are:

EDDS_HOME: The users can store requests in a shared location on the web server machine. The EDDS_HOME system property needs to be configured during deployment as described in the Configuration and Installation Guide (CIG) [RD-1]. It needs to point to a directory where the batch requests templates should be stored.

edds.server.endpoint.url : The “edds.server.endpoint.url” system property can be set to point to the default EDDS Web Server to be used by end users. It should be the full address where the web service can be found. The port should also be specified as part of the address, if required. An example might be: http://esa.egos.edds:8080/edds/EddsService?wsdl. This address can be overridden by every user for their session in the opened application on the EDDS preferences page (see Section 6.1.1.3).

6.2.2 Downloading files

In the EDDS MMI Web Application, there are several actions available, where files can be downloaded to your local machine. For the downloads to work properly it might be necessary to disable the pop-up blocker or whitelist the EDDS web application to enable it to initiate downloads. In most of the browsers, the first time you try to download a file, a popup appears asking you to verify, that this is a trusted location. You can „always allow“ pop-ups from this server, so it doesn’t ask for confirmation anymore.

6.2.3 Request Summary View

6.2.3.1 Downloading a Request

To download a submitted request the user needs to open a popup context menu by right clicking on a job and selecting the menu item ***Download Request***. The download is handled by standard browser download functionality.

6.2.3.2 Downloading a Response

To download response data retrieved by the EDDS Server for a request, the response data needs to be available for the EDDS system and the user needs to open a popup context menu by right clicking on a job and selecting the menu item ***Download Response File(s)***. In case the response contains several files, all the files are downloaded separately.

It is possible to download a responses for several jobs, by selecting more than one job and then clicking popup menu item ***Download Response File(s).***

It is also possible to download individual response files for the case where the response file has been split into parts. See Section 6.1.4.13.

6.2.4 Data Requests

It is possible to download a currently open request from the editor through a toolbar button.

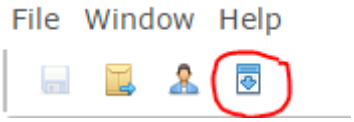


Figure 40 Download Editor Request

6.2.5 Request View

The ***Request View*** displays all XML files and folders in the shared location ***EDDS_HOME***. Users can save requests there, open and edit existing requests and delete the files. Normally this could be used to store and share templates of requests that are shared among all users across all missions. Note that all users have the permission to delete files from this view.

6.2.5.1 Saving Requests

The difference between saving requests on a standalone application (see 6.1.5.5.1) and on the web application is that instead of storing files locally, the requests are saved to a shared location on the server. The location is determined during the deployment of the EDDS MMI Web Application with the EDDS_HOME variable and it cannot be changed by the users. Currently there is no security, so everyone can see all the requests and delete them.

6.2.5.2 Opening existing requests

You can double click on an existing request to open it in the editor.

6.2.5.3 File Context Menu

Right-clicking on a file brings up a context menu to delete the file or to download it.

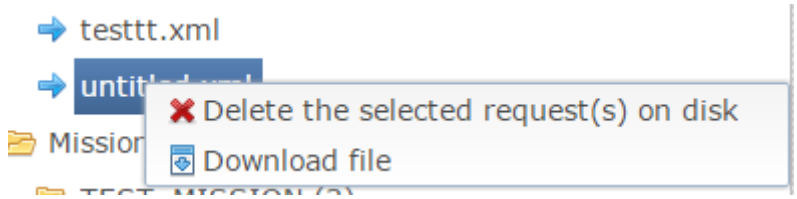


Figure 41 File context menu

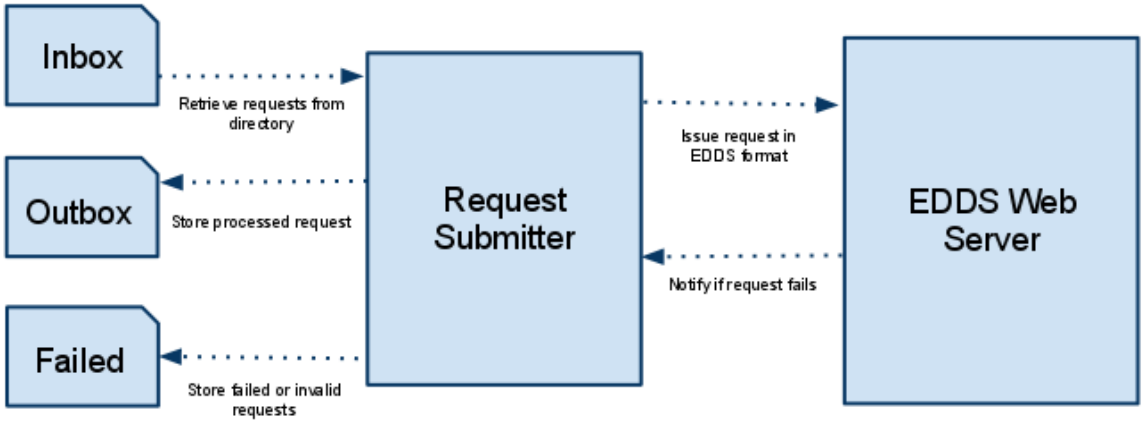
6.3 Request Submitter

The EDDS Request Submitter is a lightweight standalone application that polls a configurable directory for request files. Any valid request files either in EDDS or GDDS format placed in the directory will be processed and submitted to the EDDS Web Server. Responses are returned as defined in the request.

The processed request file will be moved to an 'Outbox' directory. Any failed requests will be moved to a 'Failed Request' directory.

The diagram below shows how the Request Submitter interacts with the Inbox, Outbox and Failed directories.

For information about the EDDS and GDDS request formats see [AD-2].



6.4 Performance Processor

The Performance Processor is a standalone application that calculates the length of time the EDDS server takes to perform the following actions for an individual request:

Retrieval from archive - the time taken to retrieve the data from either the FARC, DARC or PARC.

Perform filtering - the time taken for filtering to be performed upon the retrieved data.

Formatting time - the time taken for the filtered data to be formatted into the requested type.

Encryption time – the time taken for the data to be encrypted.

Compression time – the time taken for the response file to be compressed into either ZIP, TAGRZ, TAR.

Number of Packets/Parameters- the total number of packets/parameters retrieved from the archive.

For instructions on how to configure and install the performance processor you can consult the CIG sections 3.3.1.1 and 3.4.6.

How to evaluate request performance:

- Start the performance processor

- Issue one or multiple requests to be processed.
- Wait for the requests to complete processing.
- Stop the performance processor.
- Navigate to the performance processor's deploy directory and open the 'logs' folder.
- The 'performance-processor.log' file will contain the statistics of all requests that were processed whilst the performance processor was active.

Appendix A Data Types

A.1 DateTime Data Type

The **dateTime** is used to define a specify date and a time in a form.

The **dateTime** is specified in the following form "**YYYY-MM-DDThh:mm:ss[.xxxxxxZ]**" where:

- **YYYY** indicates the year
- **MM** indicates the month
- **DD** indicates the day
- **T** indicates the start of the required time section
- **hh** indicates the hour
- **mm** indicates the minute
- **ss** indicates the second
- **xxxxxx** indicates the microseconds. Milliseconds can also be entered (i.e. 3 numbers after the decimal point)
- **Z** indicate the time zone

Note: All components (except the nanosecond) are required!

Examples:

- **2002-05-30T09:00:00 (9:00 on 30th May 2002 GMT)**
- **2010-05-10T13:00:00.123456Z (13:00 and 123456 microseconds on 10th May 2010)**

A.2 DOY DateTime Data Type

The **DOY dateTime** format is used to define a specific date and a time in a specific format.

The **dateTime** is specified in the following form "**YYYY-DDDThh:mm:ss[.xxxxxxZ]**" where:

- **YYYY** indicates the year
- **DDD** indicates the day
- **T** indicates the start of the required time section
- **hh** indicates the hour
- **mm** indicates the minute
- **ss** indicates the second
- **xxxxxx** indicates the nanoseconds
- **Z** indicate the GMT time zone

Note: All components except the nanoseconds and Z are required!

Examples:

- **2002-306T09:00:00**
- **2010-102T09:30:10.123**

A.3 Duration Data Type

The **duration** data type is used to specify a time interval.

The time interval is specified in the following form "**PnYnMnDTnHnMnS**" where:

- **P** indicates the period (required)
- **nY** indicates the number of years
- **nM** indicates the number of months

- **nD** indicates the number of days
- **T** indicates the start of a time section (required if you are going to specify hours, minutes, or seconds)
- **nH** indicates the number of hours
- **nM** indicates the number of minutes
- **nS** indicates the number of seconds

Examples:

- A period of five years : **P5Y**
- A period of five years, two months, and 10 days: **P5Y2M10D**
- A period of five years, two months, 10 days, and 15 hours: **P5Y2M10DT15H**
- A period of 15 hours: **PT15H**
- A period of minus 10 days: **-P10D**

A.4 CRON Expression Data Type

CRON Expressions are used to configure repeating schedules. *CRON Expressions* are strings that are actually made up of seven sub-expressions that describe individual details of the schedule. These sub-expressions are separated with white-space, and represent:

- Seconds
- Minutes
- Hours
- Day-of-Month
- Month
- Day-of-Week

- Year (optional field)

An example of a complete CRON expression is the string "**0 0 12 ? * WED**" - which means "**every Wednesday at 12:00 pm**".

Individual sub-expressions can contain ranges and/or lists. For example: the day of week field in the previous (which reads "WED") example could be replaces with "**MON-FRI**", "**MON, WED, FRI**", or even "**MON-WED,SAT**".

Wild-cards (the '*****' character) can be used to say "every" possible value of this field. Therefore the '*****' character in the "Month" field of the previous example simply means "every month". A '*****' in the Day-Of-Week field would obviously mean "every day of the week".

All of the fields have a set of valid values that can be specified. These values should be fairly obvious - such as the numbers 0 to 59 for seconds and minutes, and the values 0 to 23 for hours. Day-of-Month can be any value 0-31, but you need to be careful about how many days are in a given month! Months can be specified as values between 0 and 11, or by using the strings JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV and DEC. Days-of-Week can be specified as values between 1 and 7 (1 = Sunday) or by using the strings SUN, MON, TUE, WED, THU, FRI and SAT.

The '/' character can be used to specify increments to values. For example, if you put '0/15' in the Minutes field, it means 'every 15 minutes, starting at minute zero'. If you used '3/20' in the Minutes field, it would mean 'every 20 minutes during the hour, starting at minute three' - or in other words it is the same as specifying '3,23,43' in the Minutes field.

The '?' character is allowed for the day-of-month and day-of-week fields. It is used to specify "no specific value". This is useful when you need to specify something in one of the two fields, but not the other. See the examples below for clarification.

The 'L' character is allowed for the day-of-month and day-of-week fields. This character is short-hand for "last", but it has different meaning in each of the two fields. For example, the value "L" in the day-of-month field means "the last day of the month" - day 31 for January, day 28 for February on non-leap years. If used in the day-of-week field by itself, it simply means "7" or "SAT". But if used in the day-of-week field after another value, it means "the last xxx day of the month" - for example "6L" or "FRIL" both mean "the last Friday of the month". When using the 'L' option, it is important not to specify lists, or ranges of values, as you'll get confusing results.

The 'W' is used to specify the weekday (Monday-Friday) nearest the given day. As an example, if you were to specify "15W" as the value for the day-of-month field, the meaning is: "the nearest weekday to the 15th of the month".

The '#' is used to specify "the nth" XXX weekday of the month. For example, the value of "6#3" or "FRI#3" in the day-of-week field means "the third Friday of the month".

Here are a few more examples of expressions and their meanings - you can find even more in the JavaDoc for CronTrigger

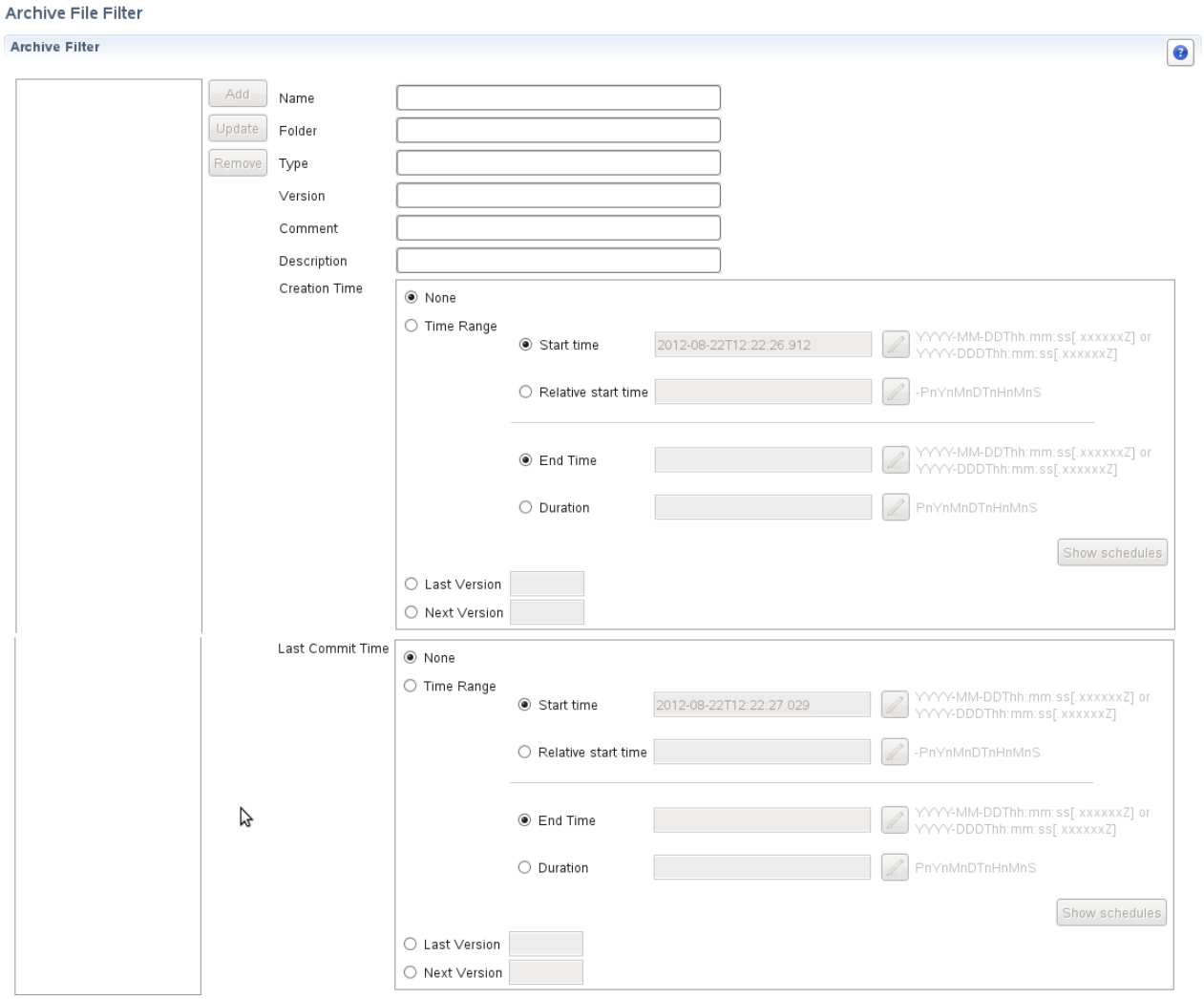
An expression to create a trigger that simply fires every 5 minutes	0 0/5 * * * ?
An expression to create a trigger that fires every 5 minutes, at 10 seconds after the minute (i.e. 10:00:10 am, 10:05:10 am, etc.).	10 0/5 * * * ?
An expression to create a trigger that fires at 10:30, 11:30, 12:30, and 13:30, on every Wednesday and Friday.	0 30 10-13 ? * WED,FRI
An expression to create a trigger that fires every half hour between the hours of 8 am and 10 am on the 5th and 20th of every month. Note that the trigger will NOT fire at 10:00 am, just at 8:00, 8:30, 9:00 and 9:30	0 0/30 8-9 5,20 * ?

Table 3 - CRON Expression examples

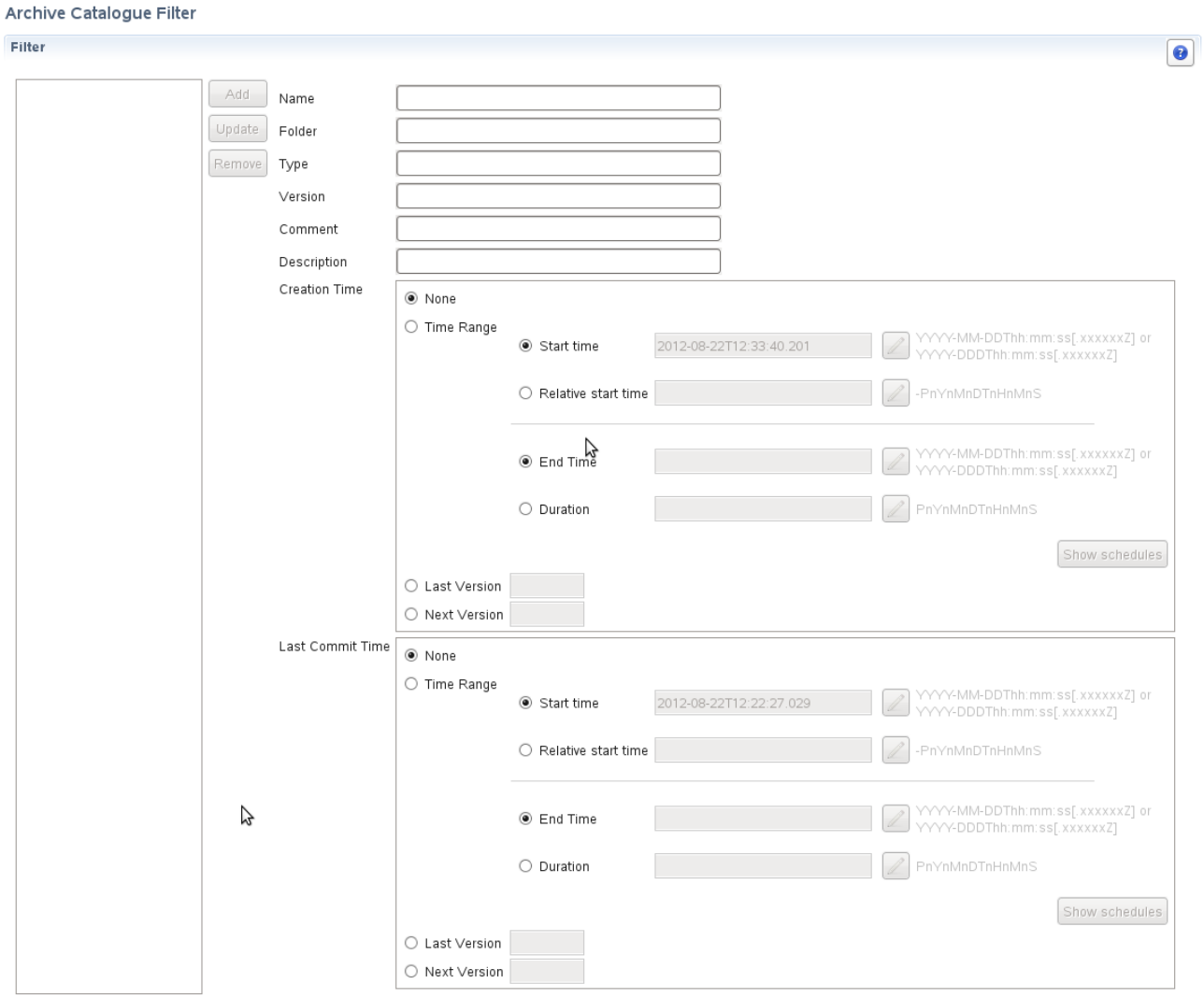
Appendix B Batch Request Forms

This section provides an overview of all the Batch Request Forms available in the application.

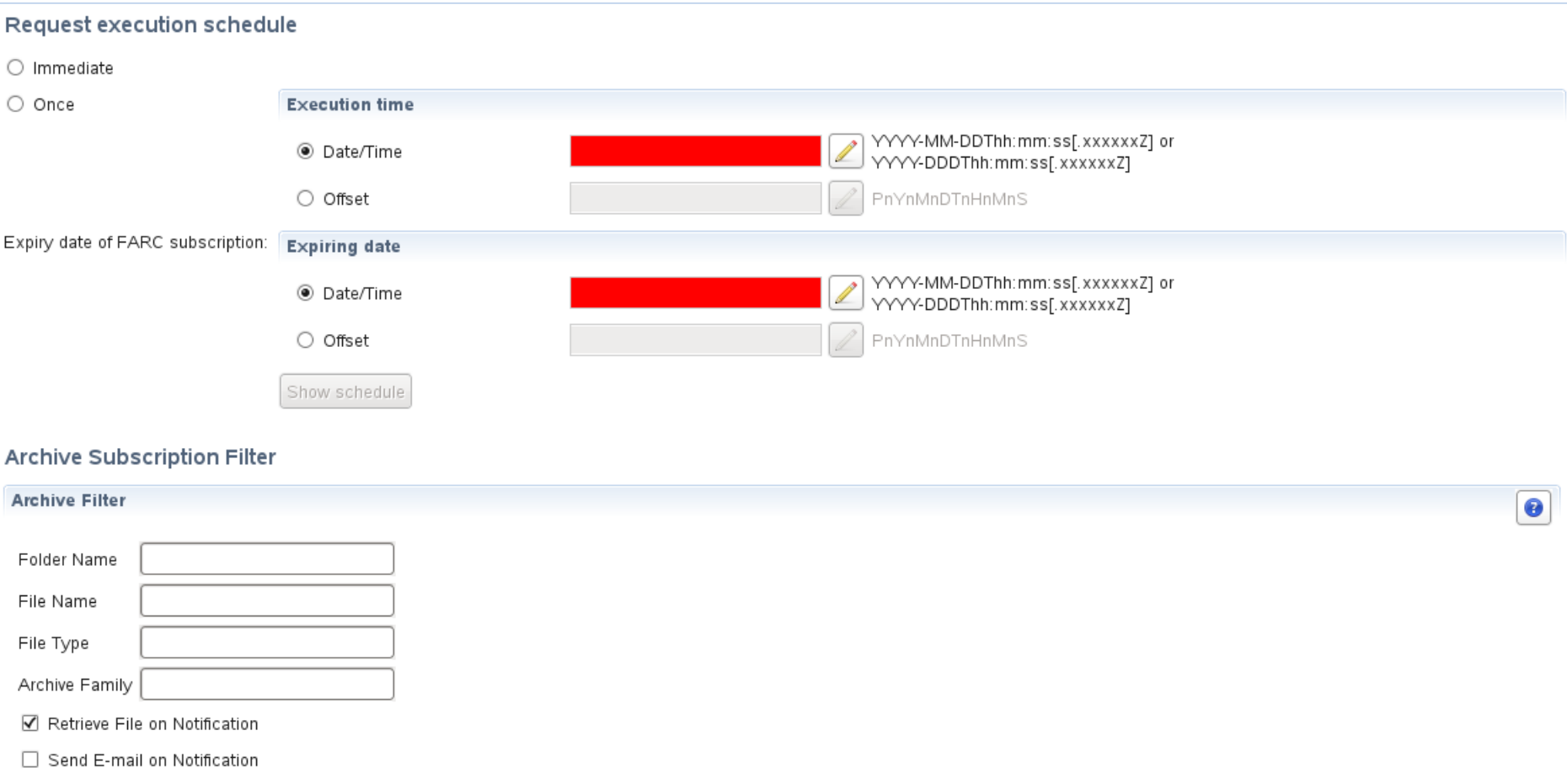
B.1 Archive File



B.2 Archive Catalogue

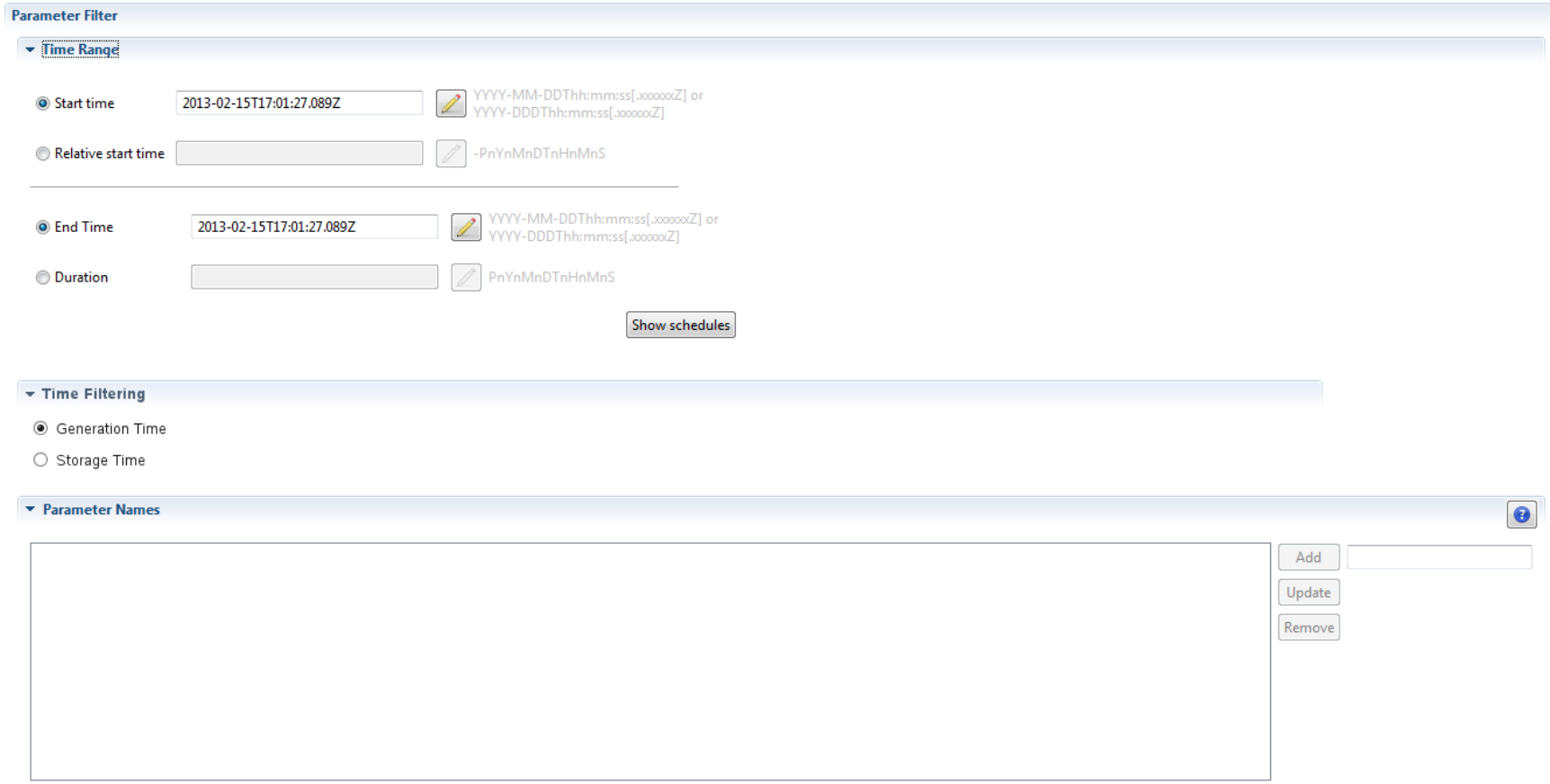


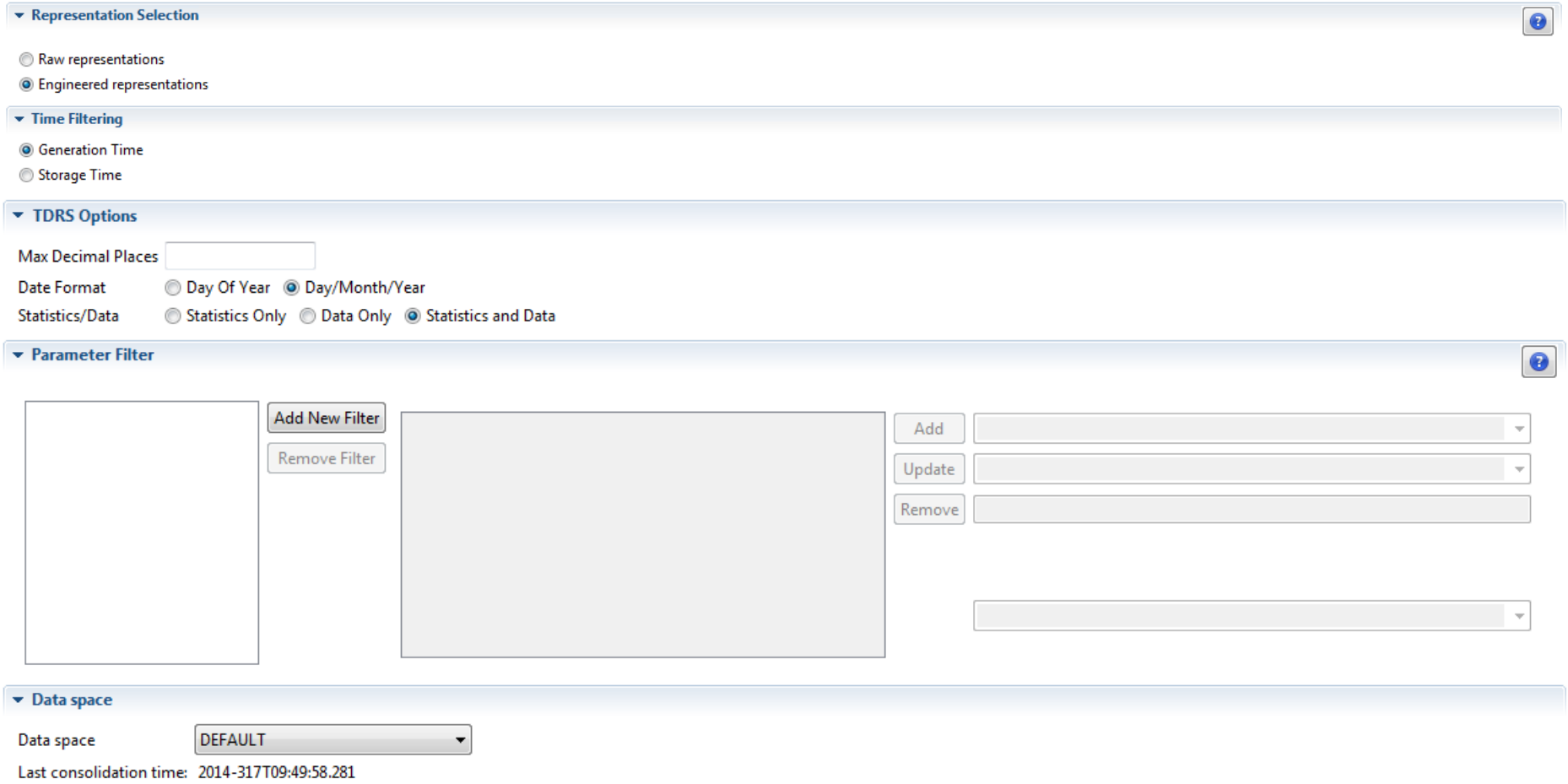
B.3 Archive Subscription



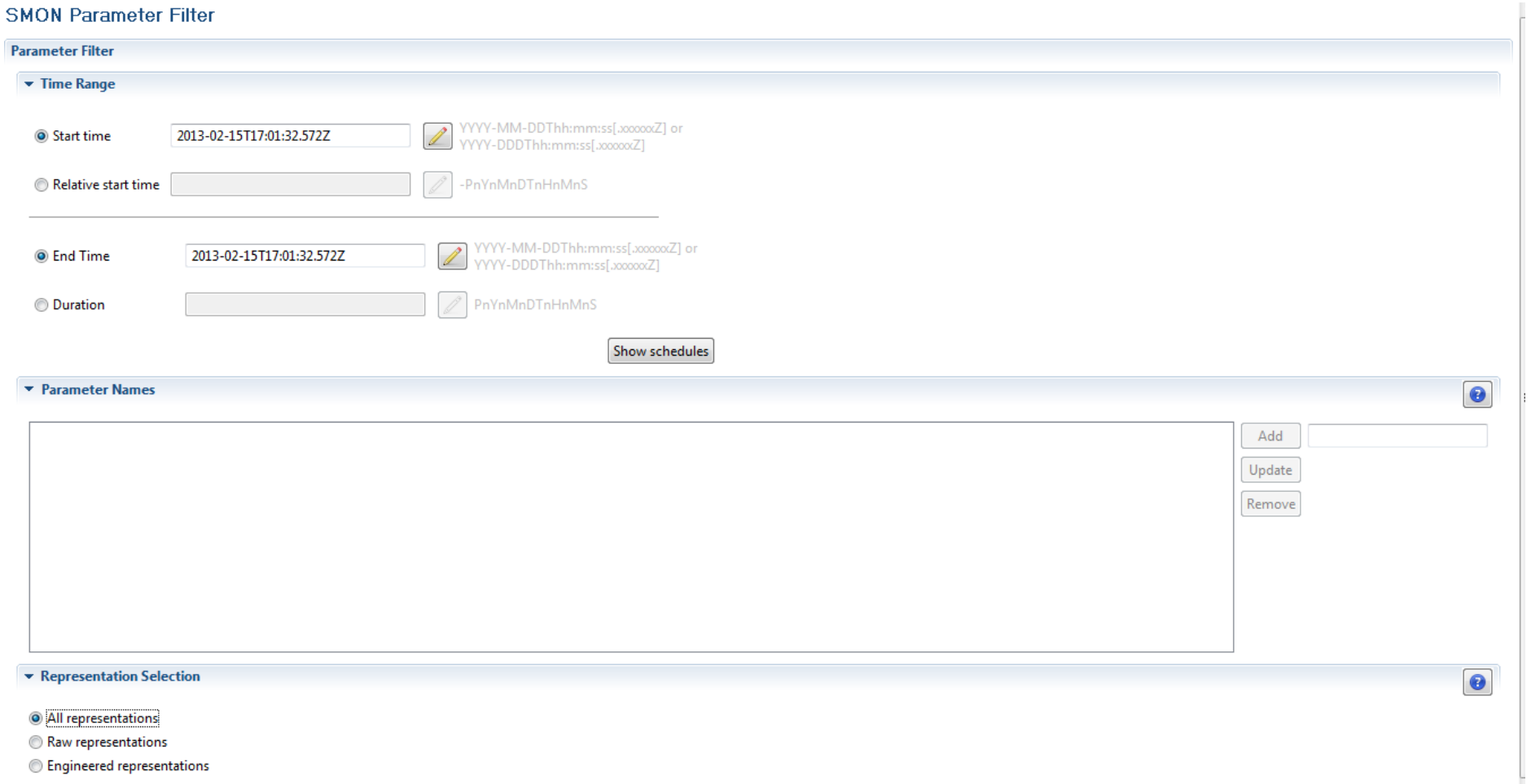
B.4 Parameter

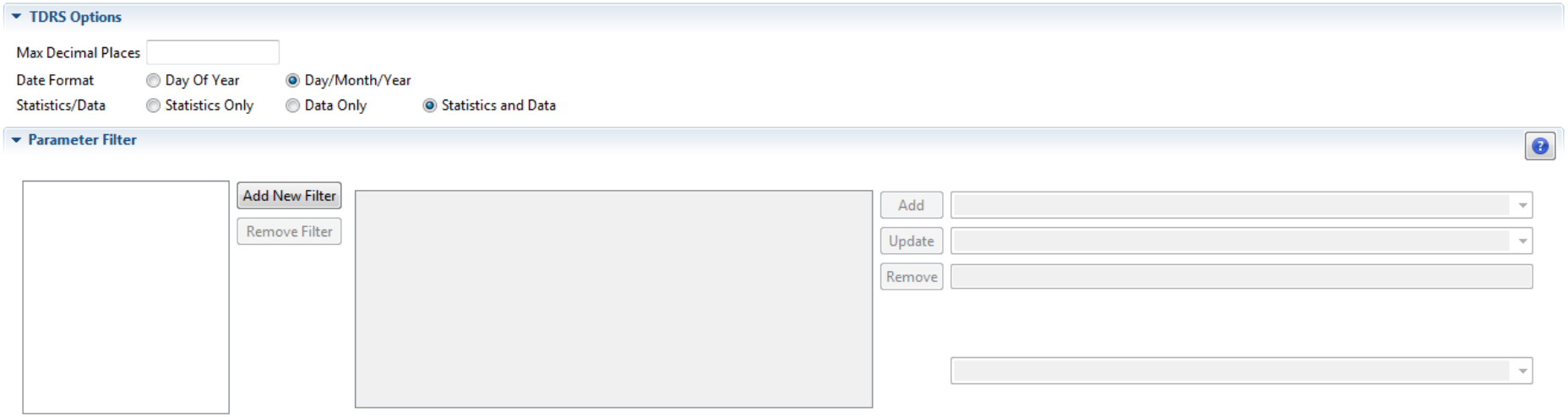
Parameter Filter



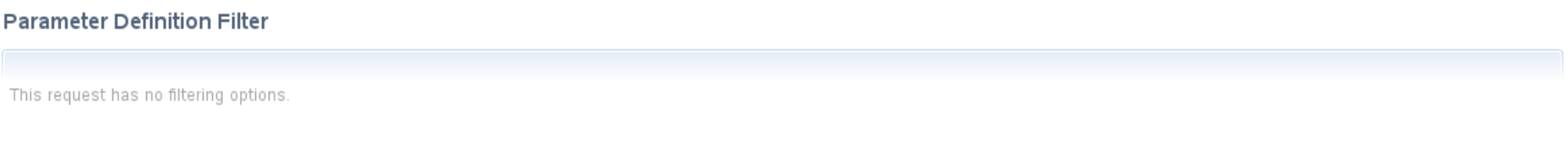


B.5 SMON Parameter

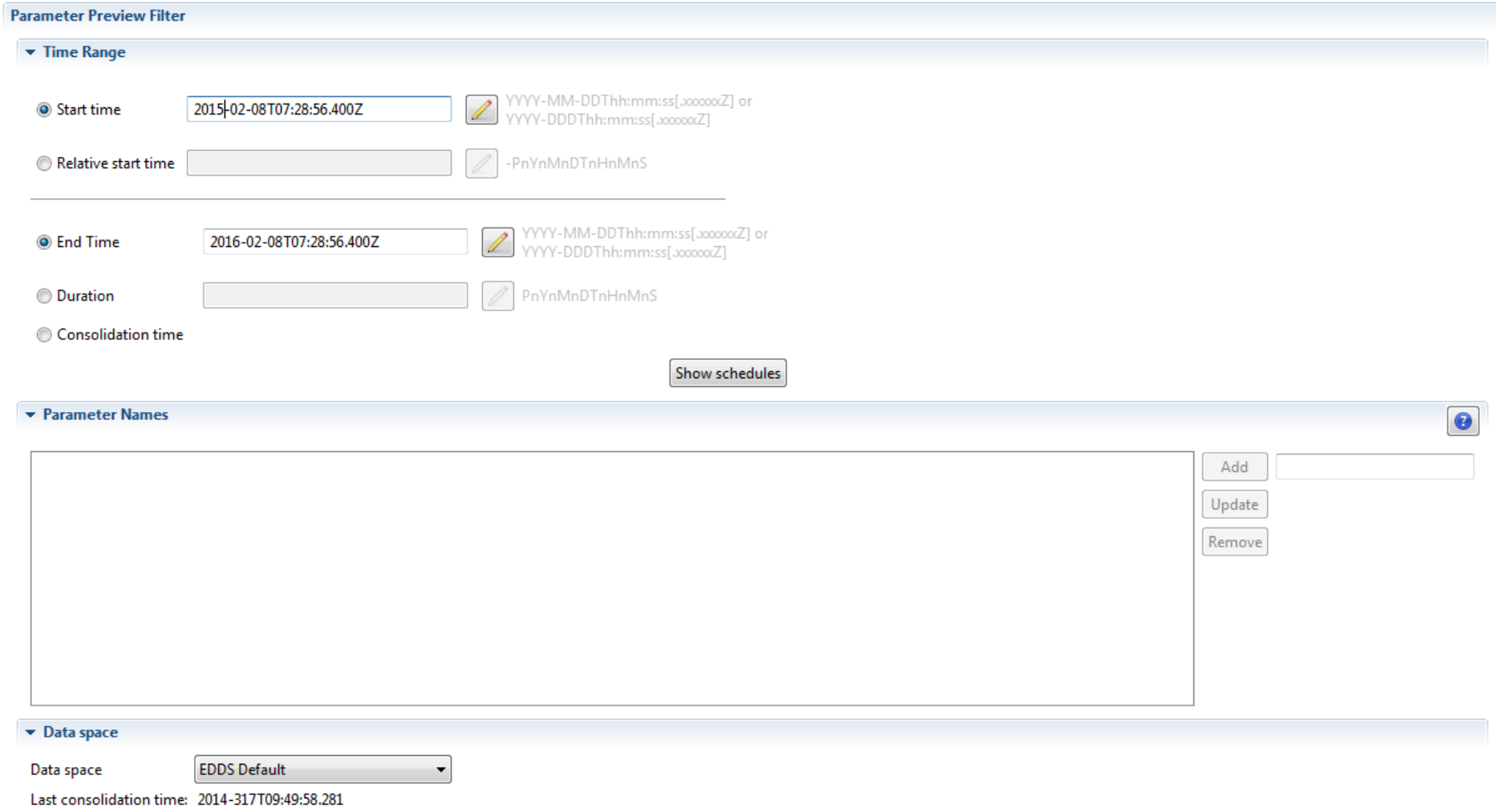




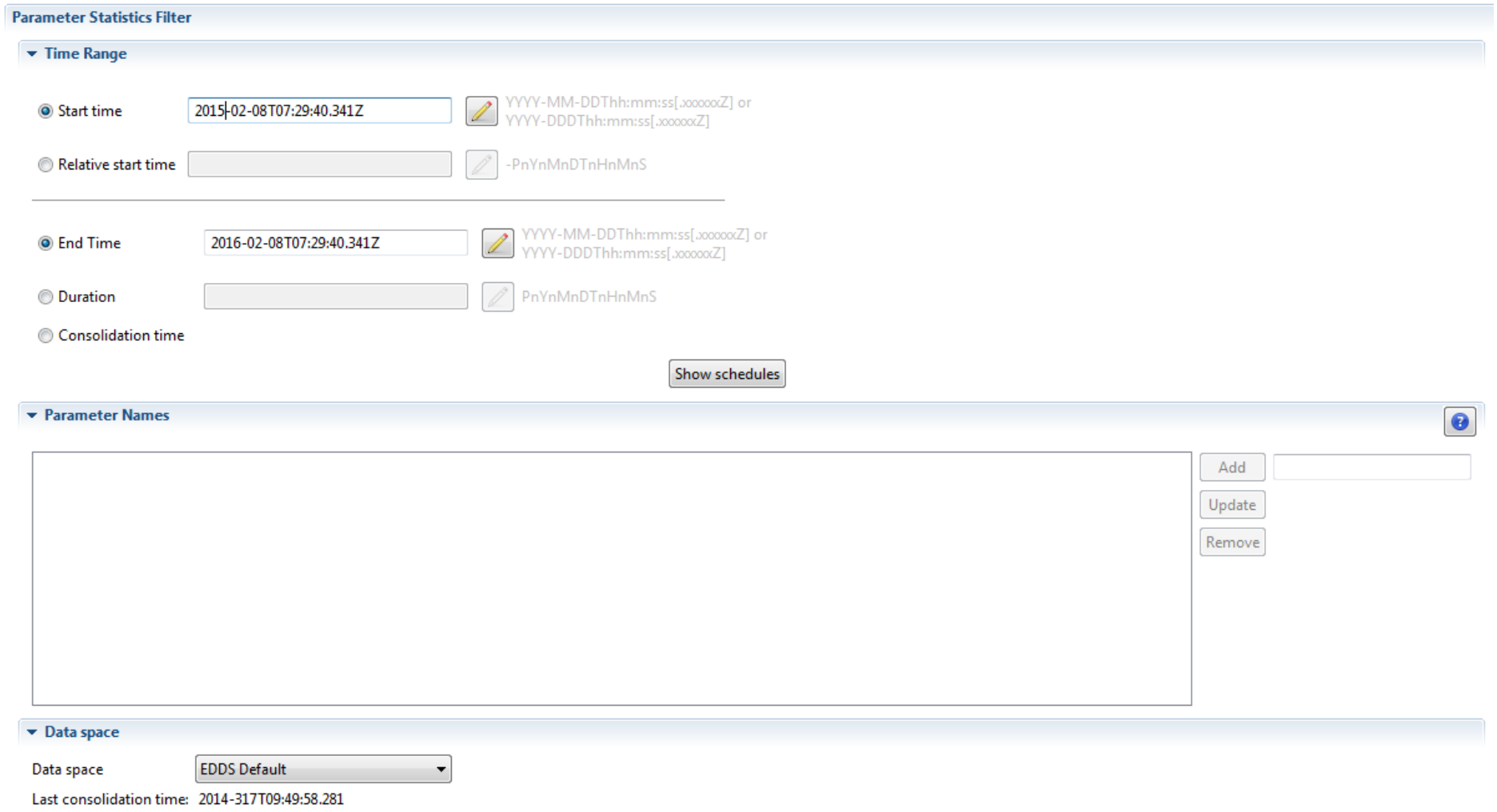
B.6 Parameter Definition



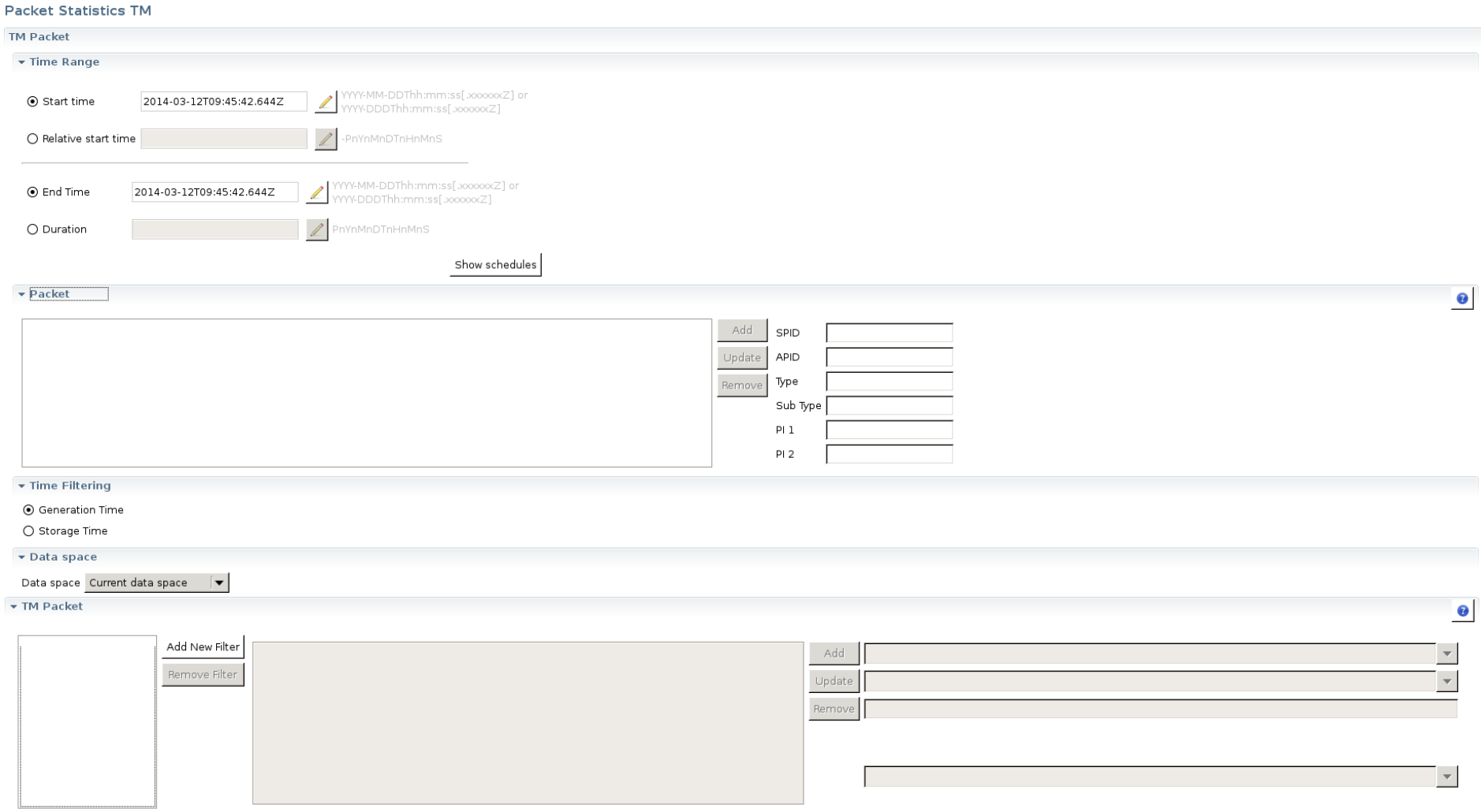
B.7 Parameter Preview



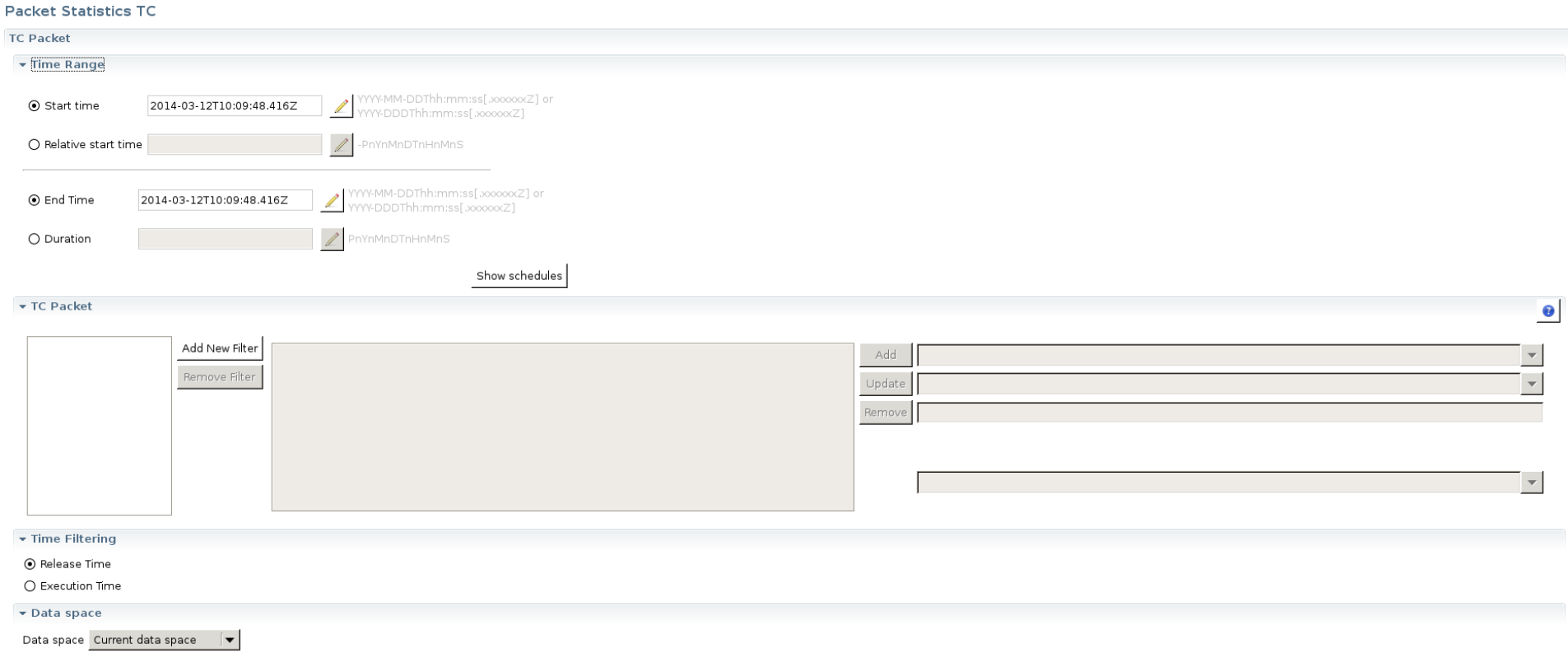
B.8 Parameter Statistics



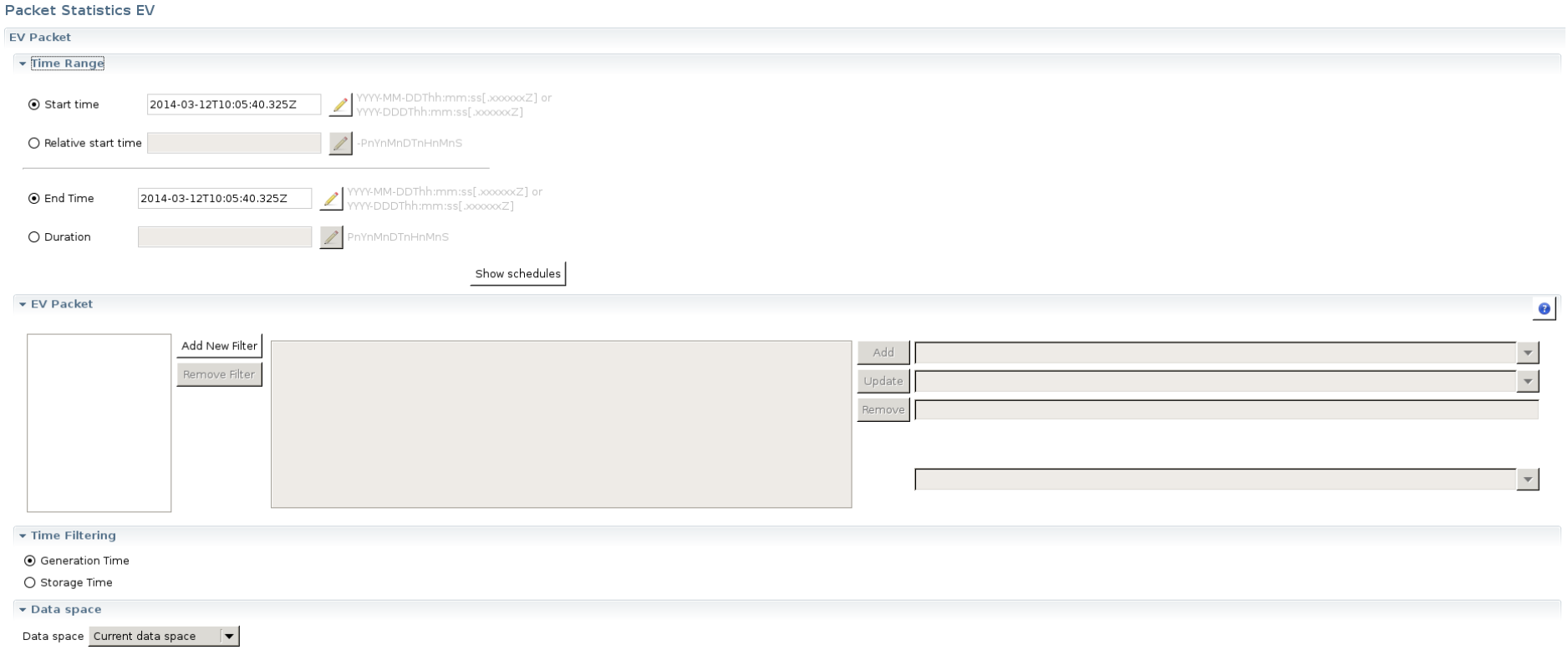
B.9 Packet TM Statistics



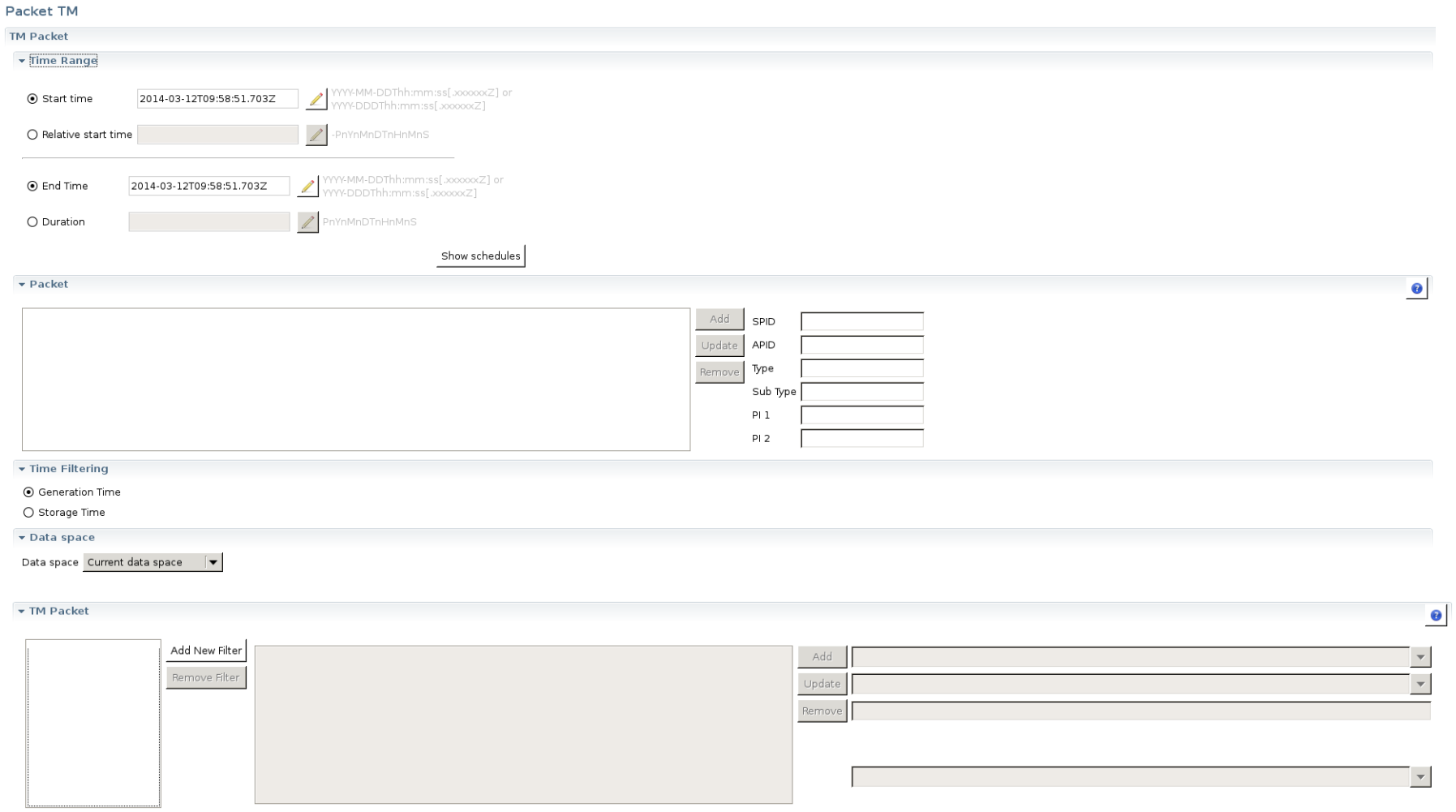
B.10 Packet TC Statistics



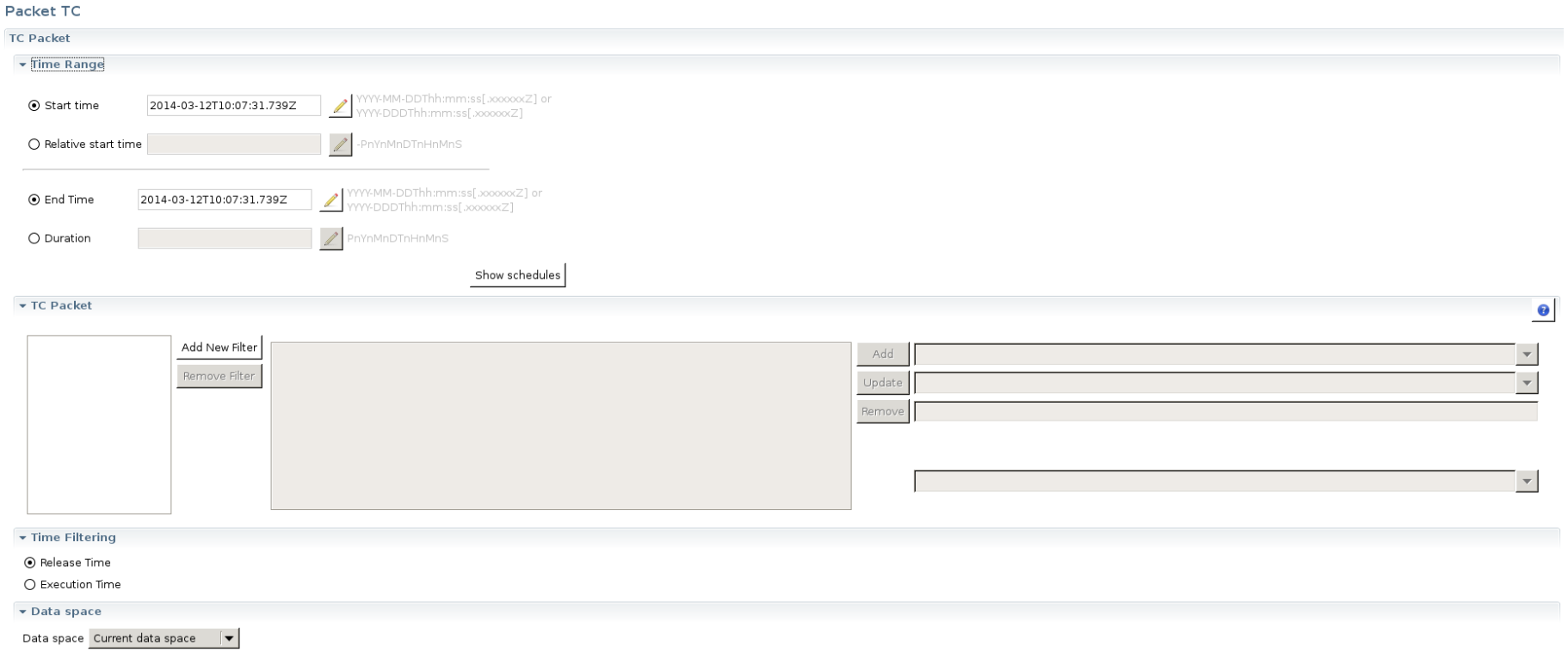
B.11 Packet EV Statistics



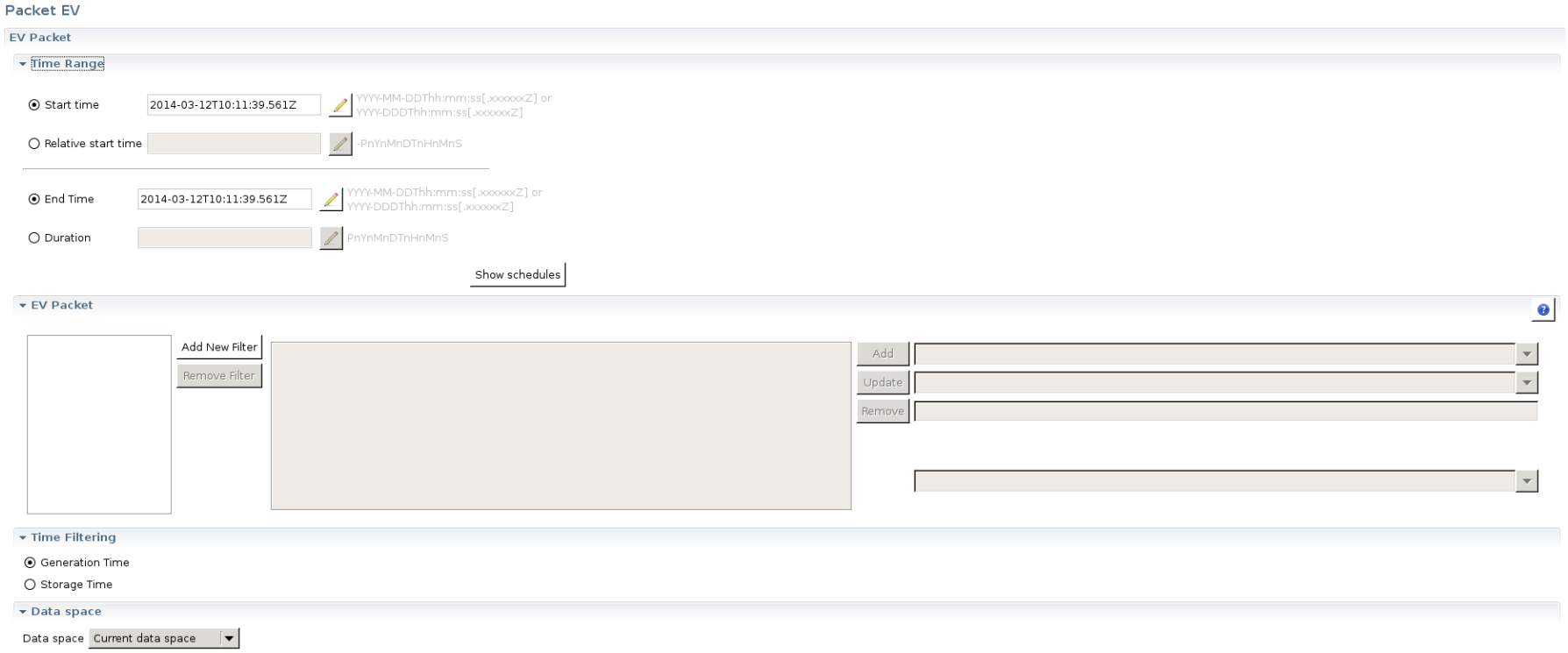
B.12 Packet TM



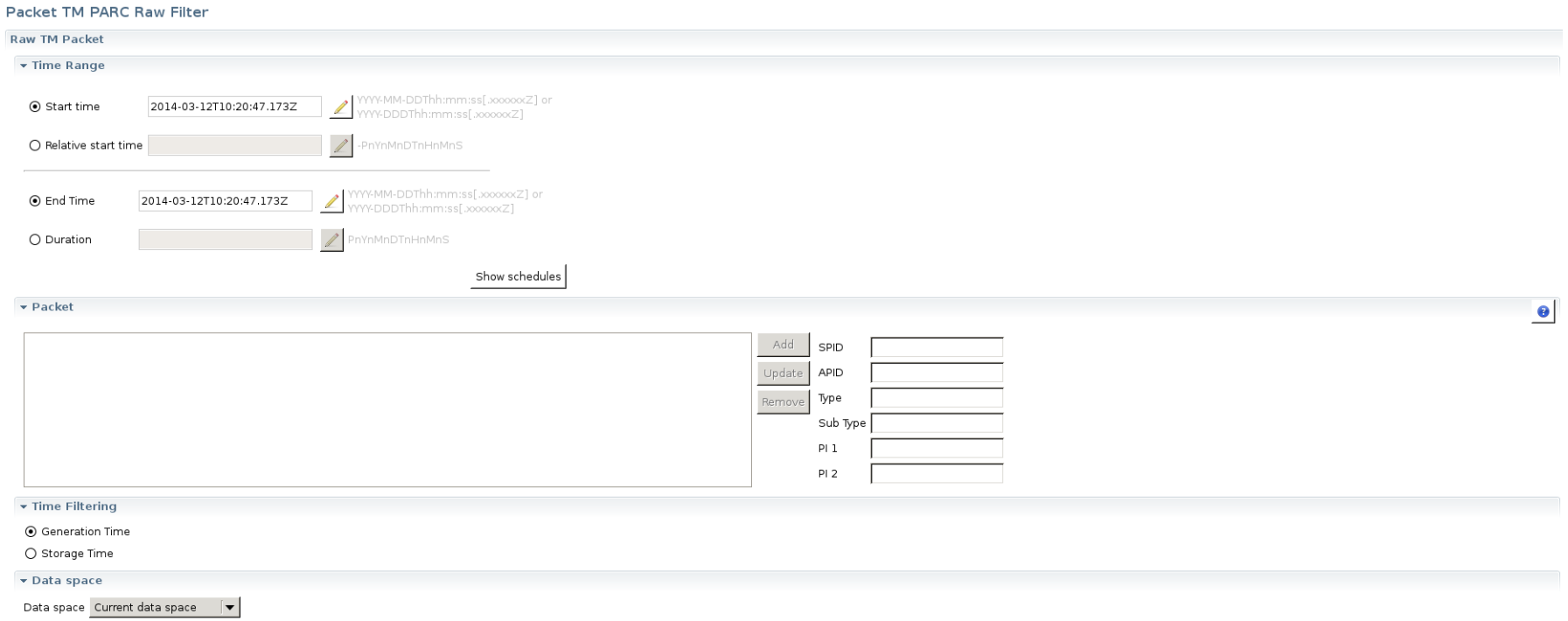
B.13 Packet TC



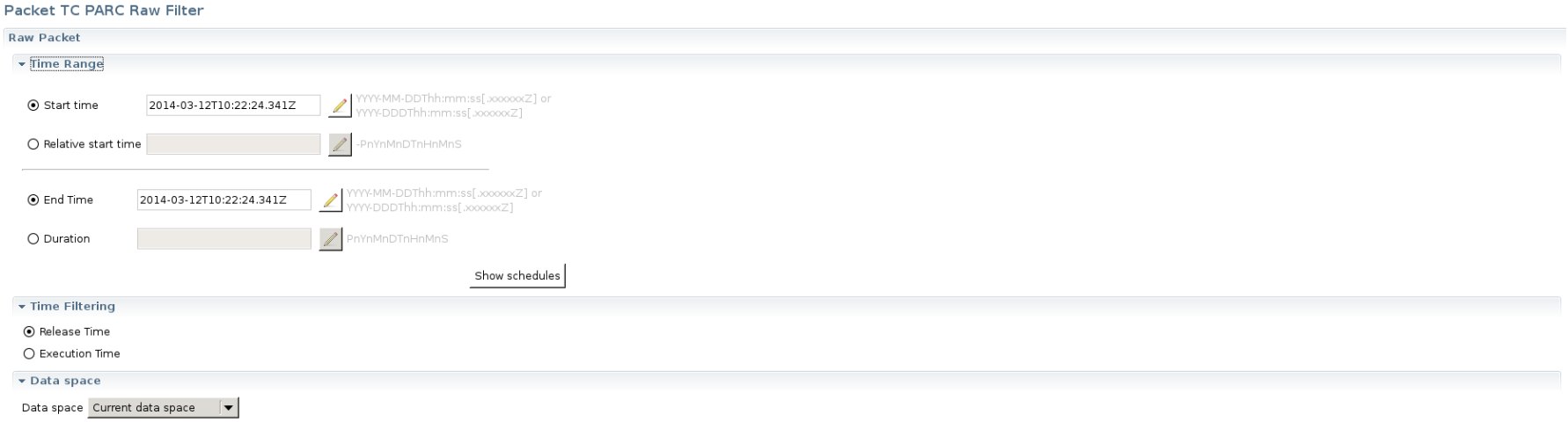
B.14 Packet EV



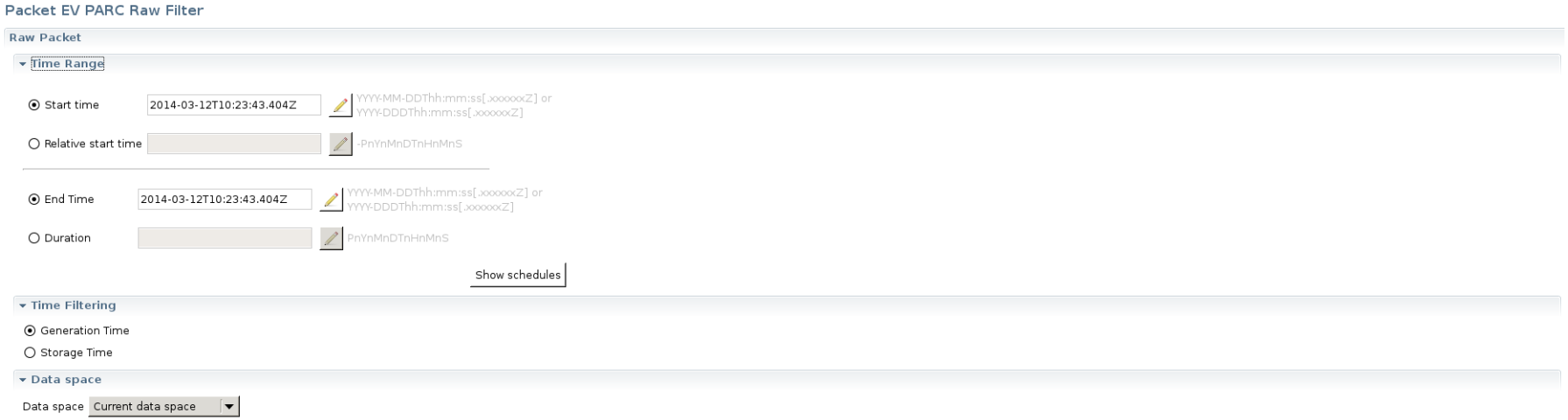
B.15 Packet TM Raw PARC data



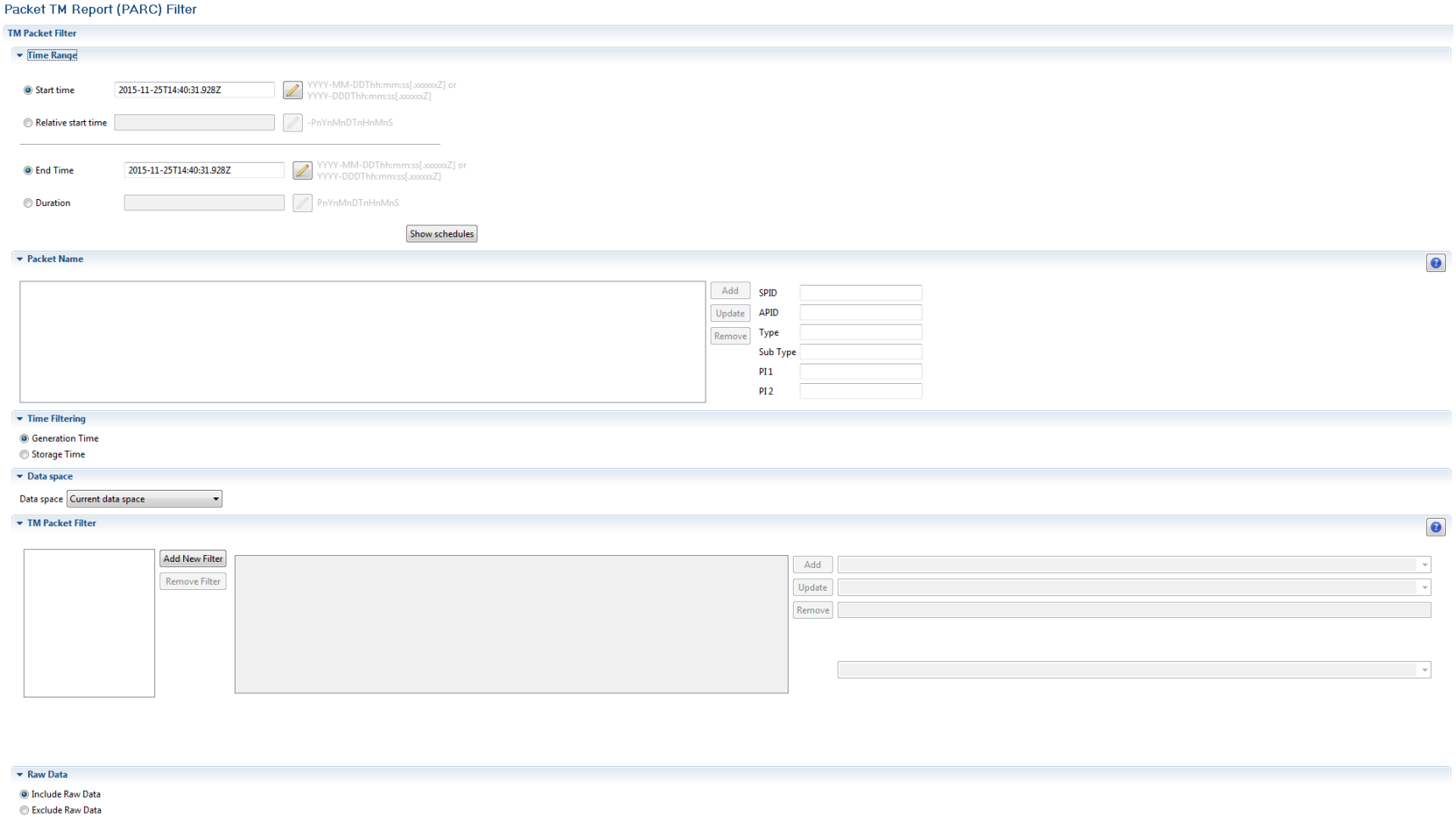
B.16 Packet TC Raw PARC data



B.17 Packet Ev Raw PARC data

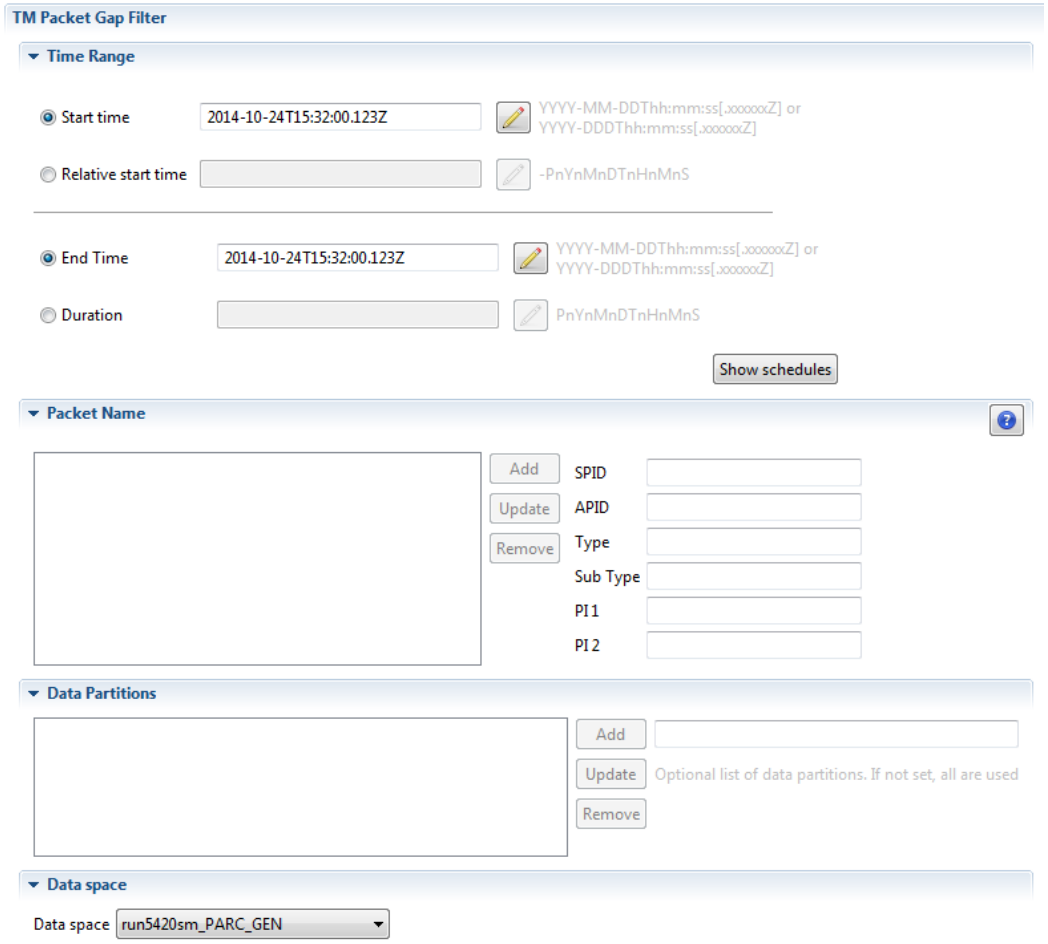


B.18 Packet TM Report

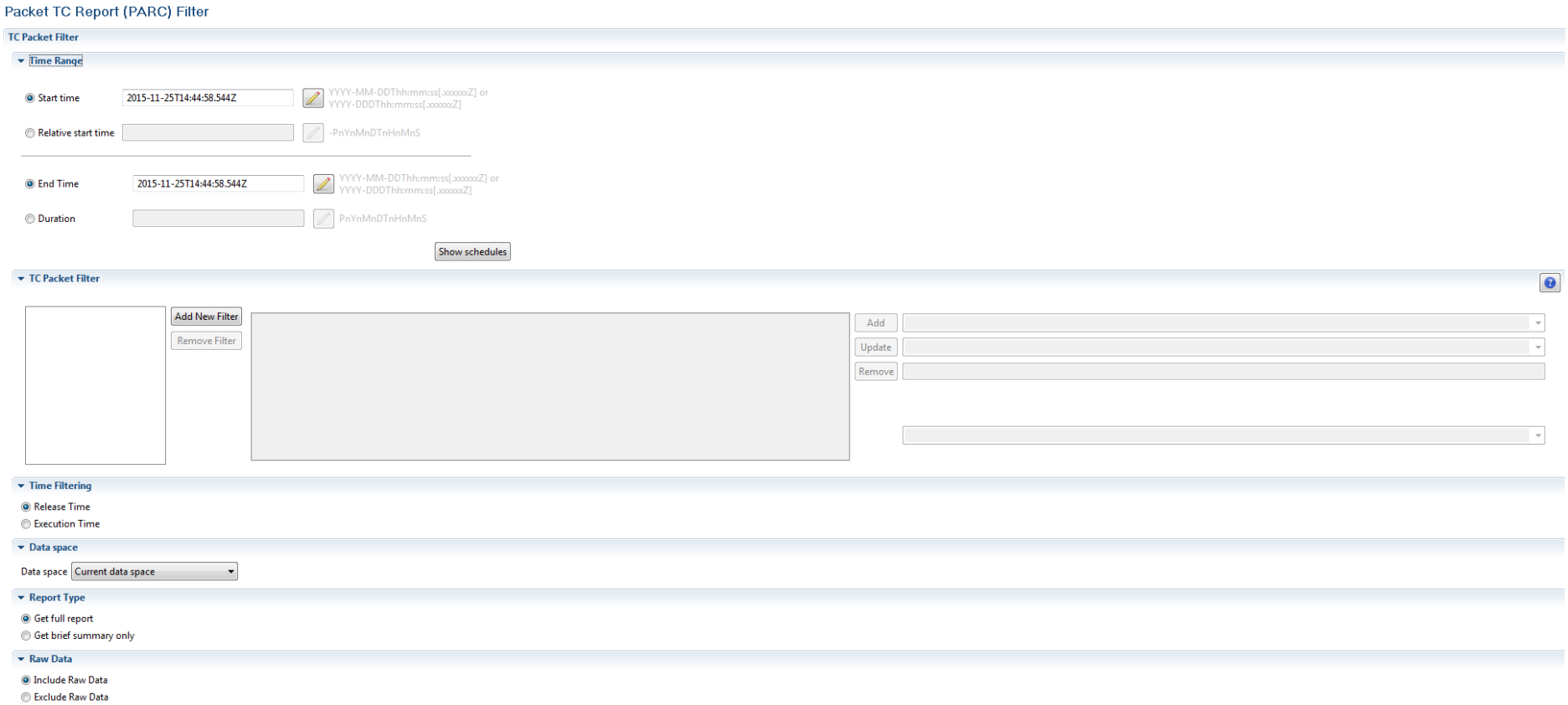


NB: It is possible to choose between “Brief” and “Full” report to exclude or include parameters respectively.

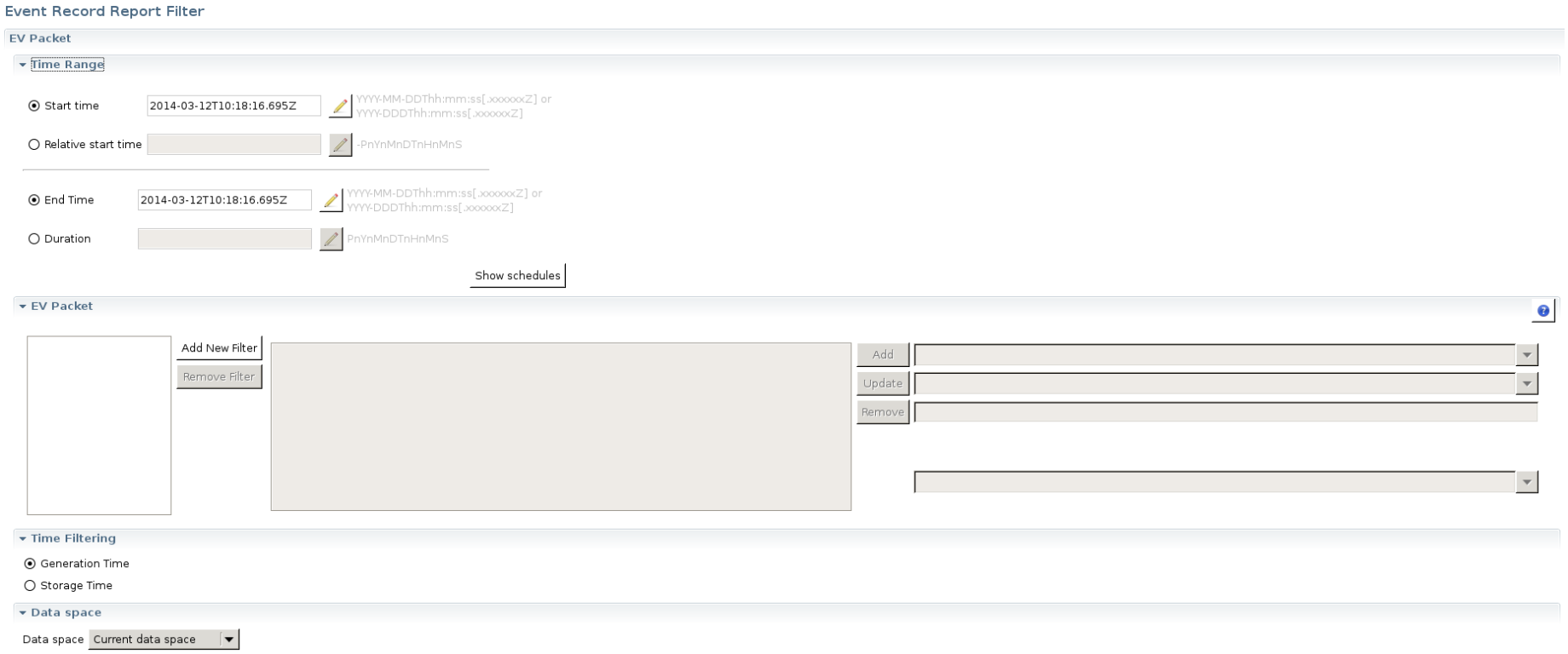
B.19 Packet TM Gap Report



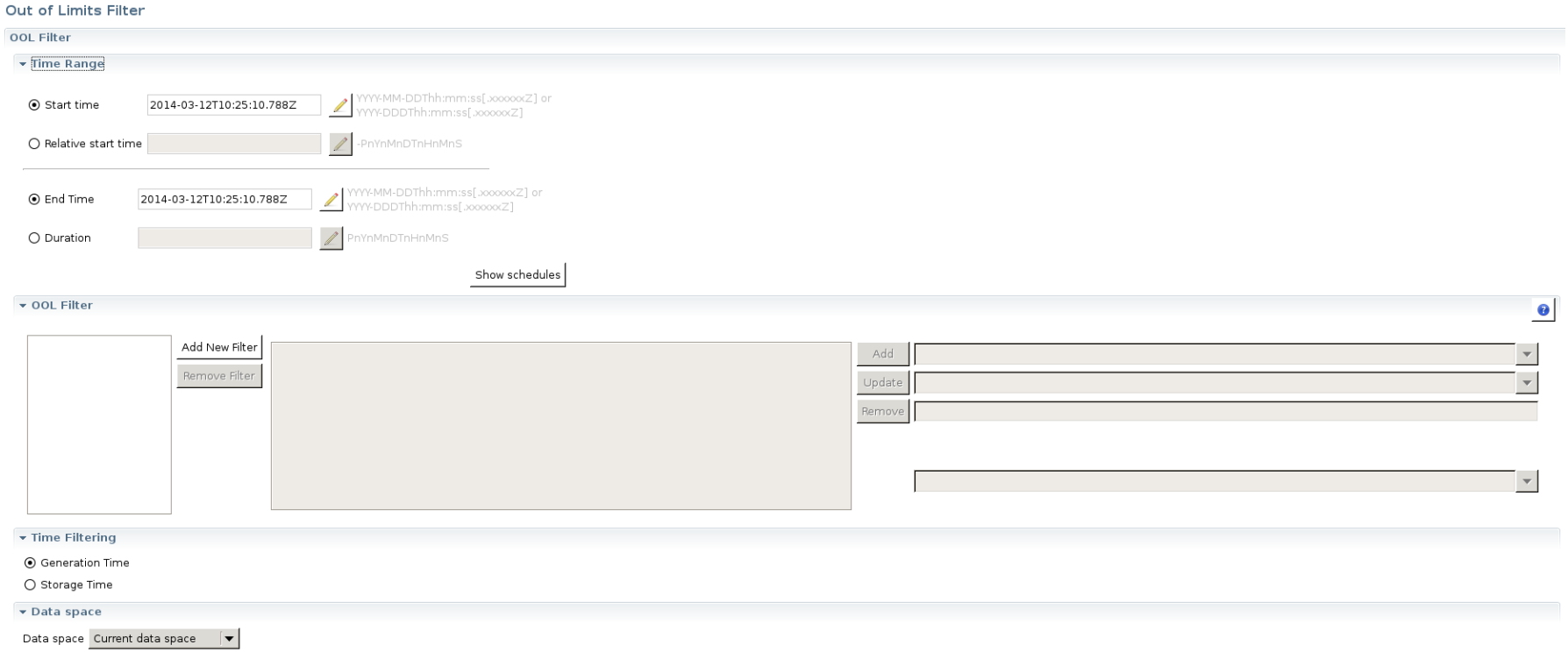
B.20 Packet TC Report



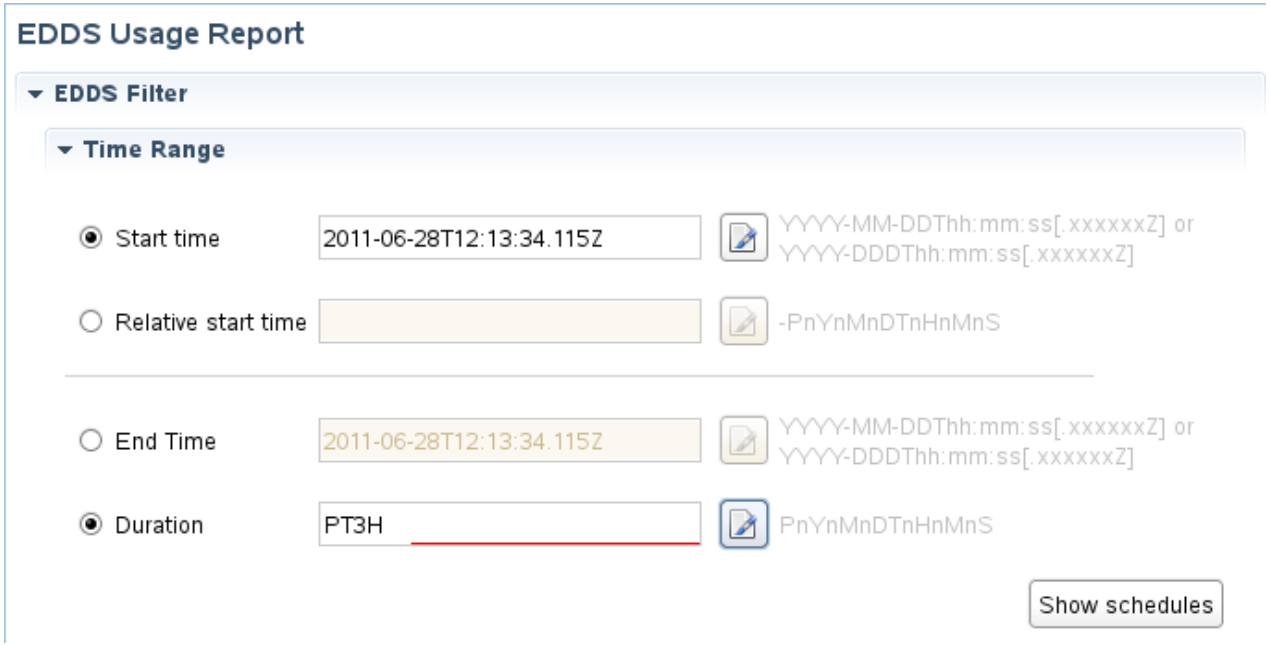
B.21 Event Record Report

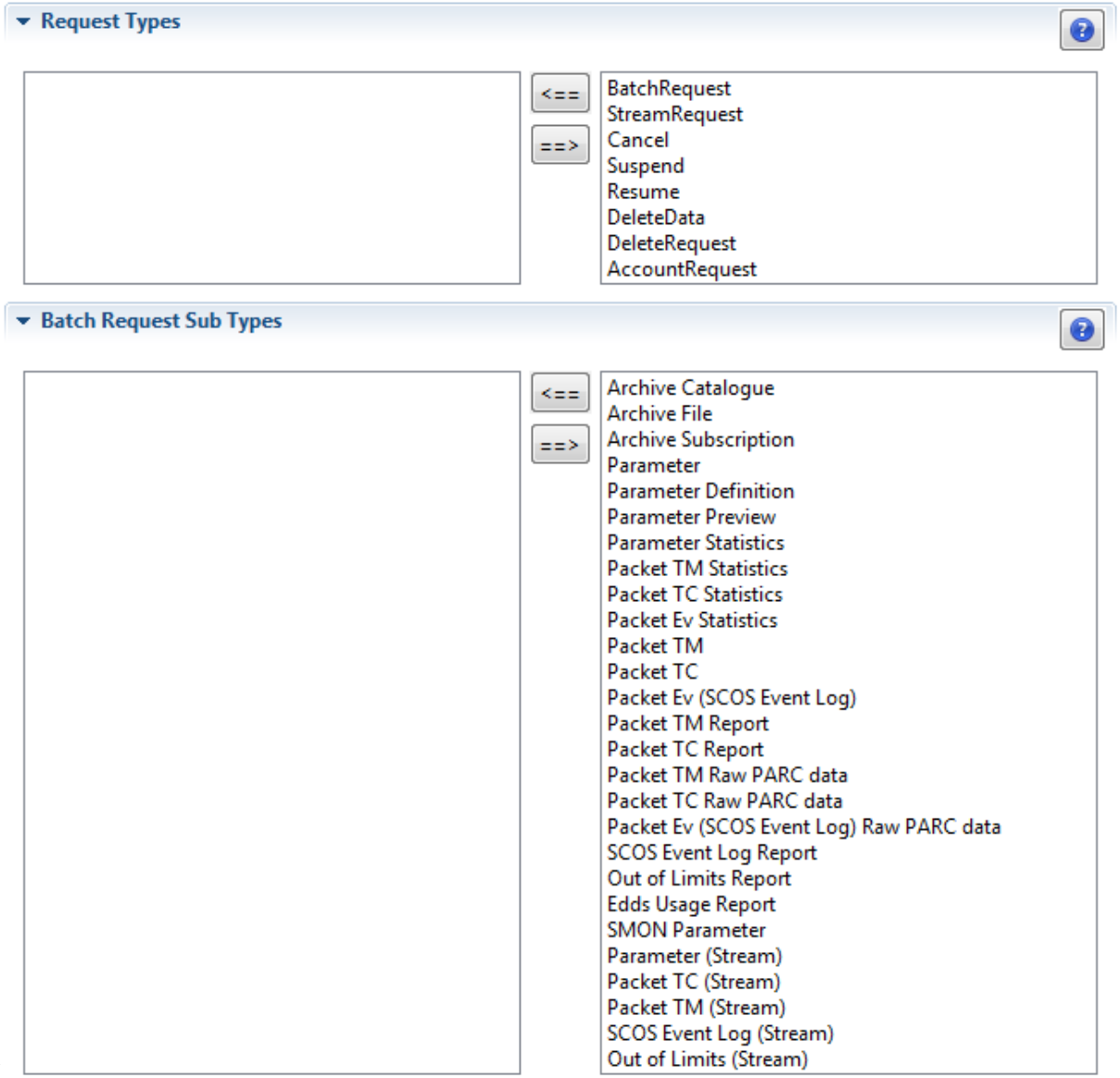


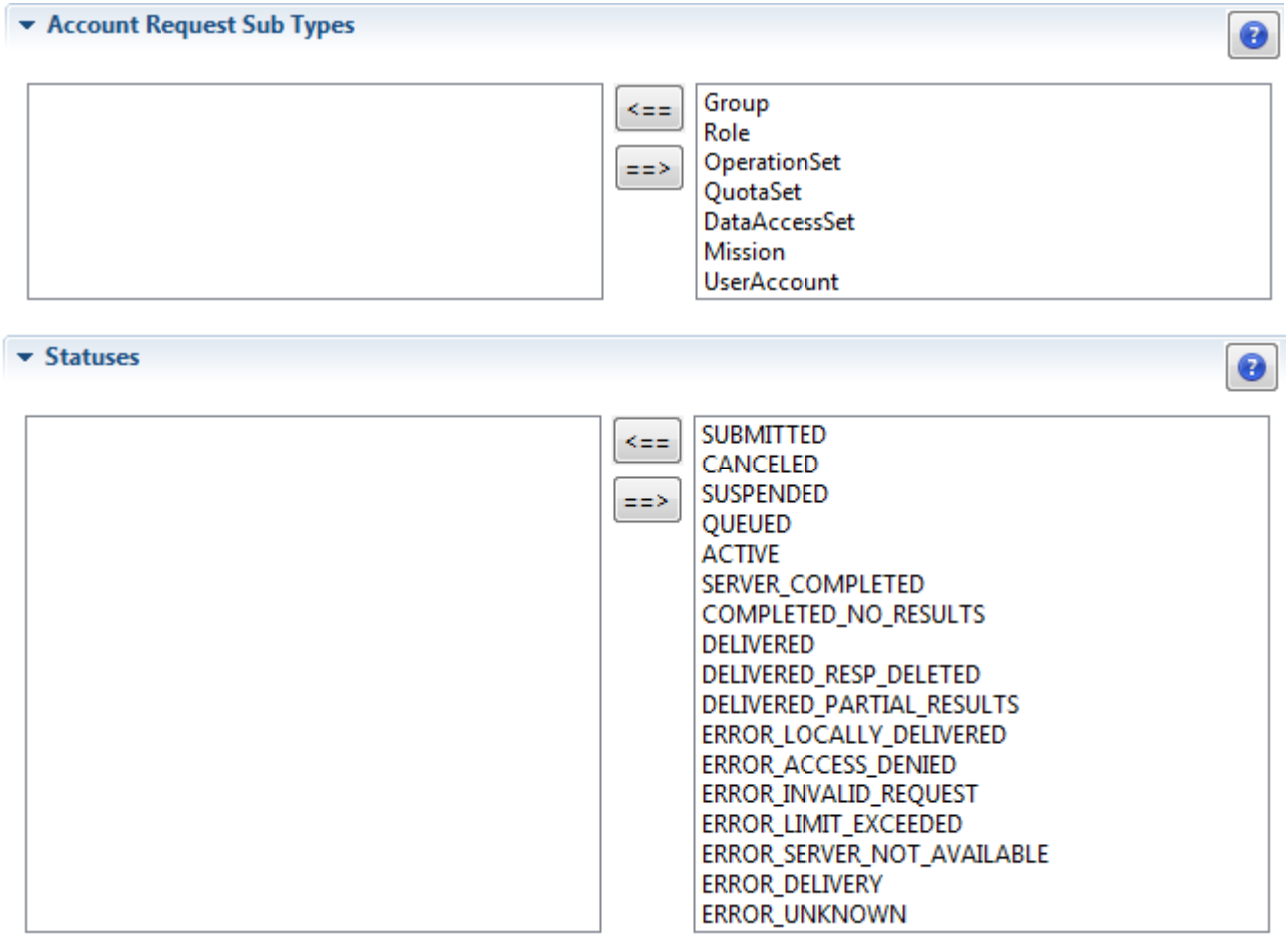
B.22 OOL Record Report

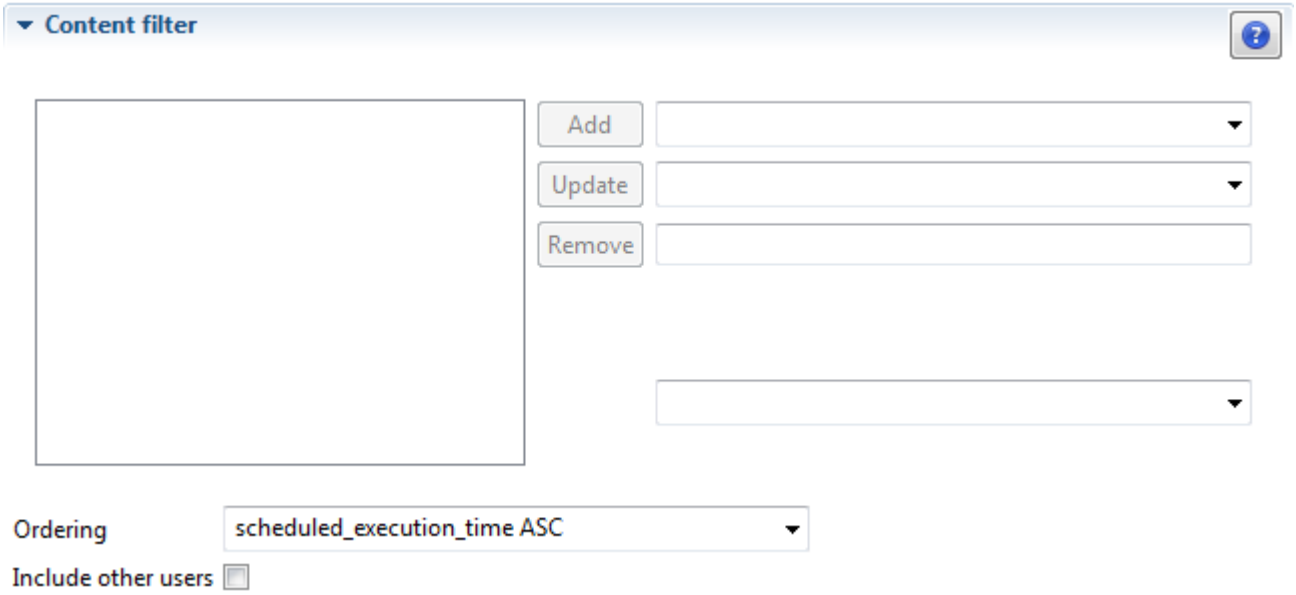


B.23 EDDS Usage Report

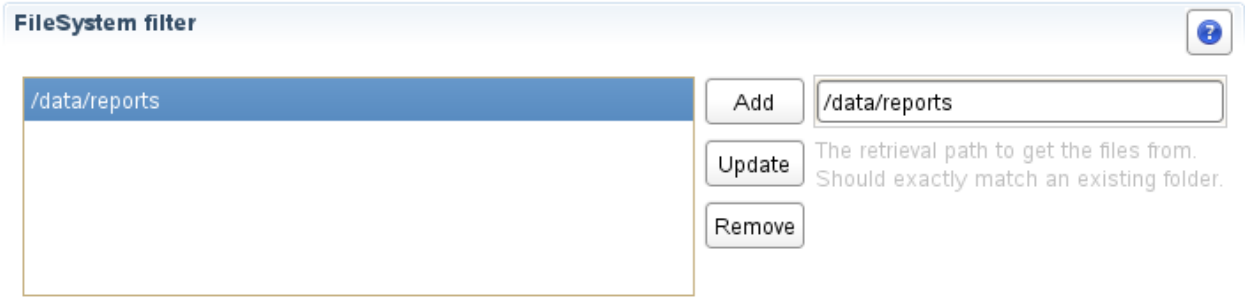




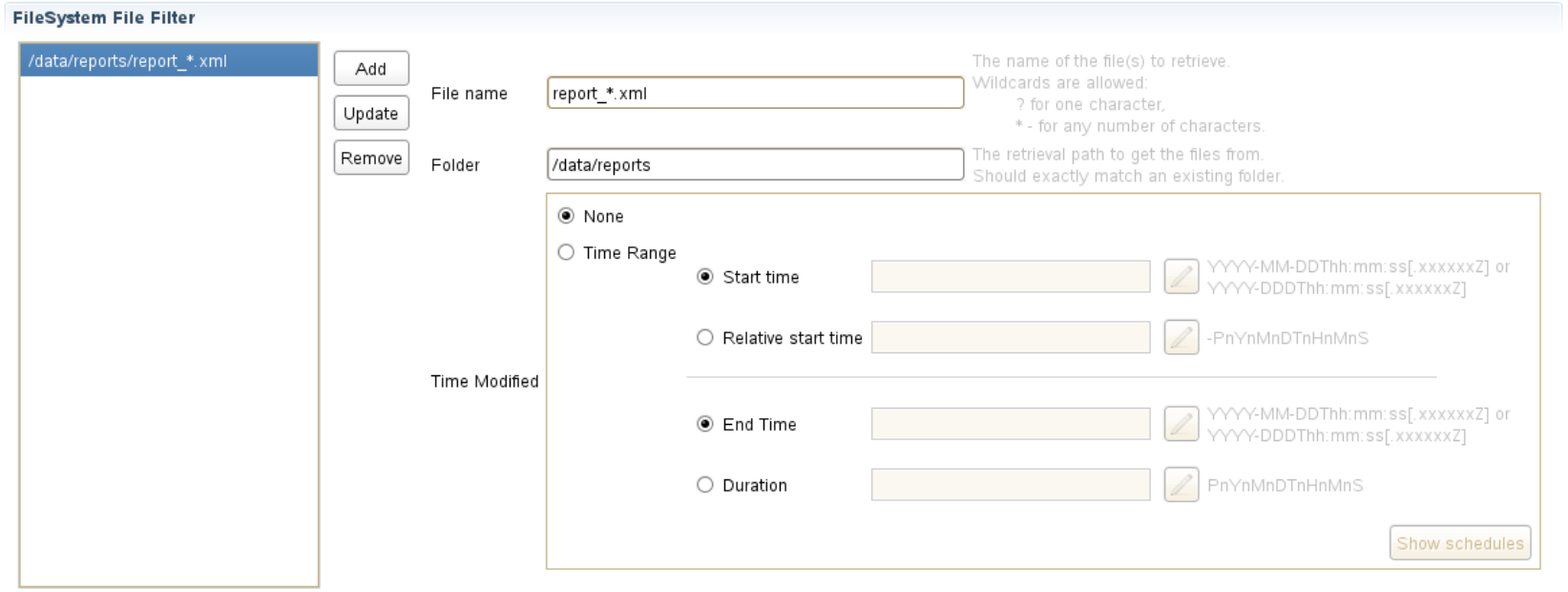




B.24 File System File Catalogue and File System Folder Catalogue



B.25 File System File



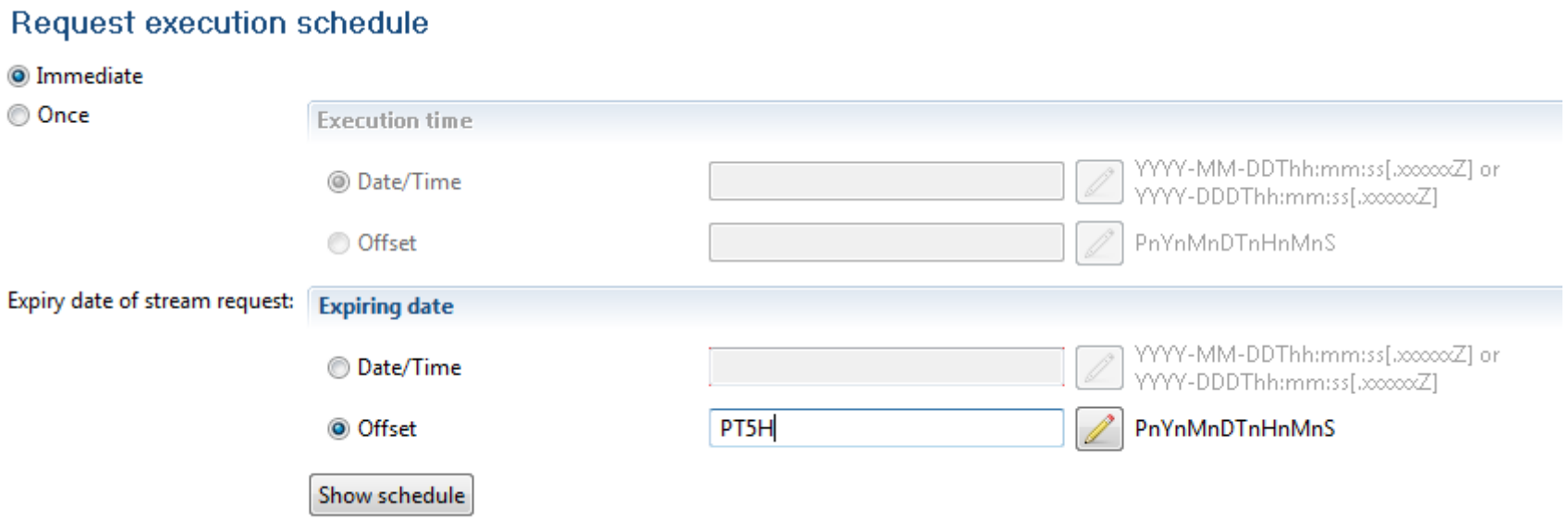
B.26 File System Subscription

Appendix C Stream Request Forms

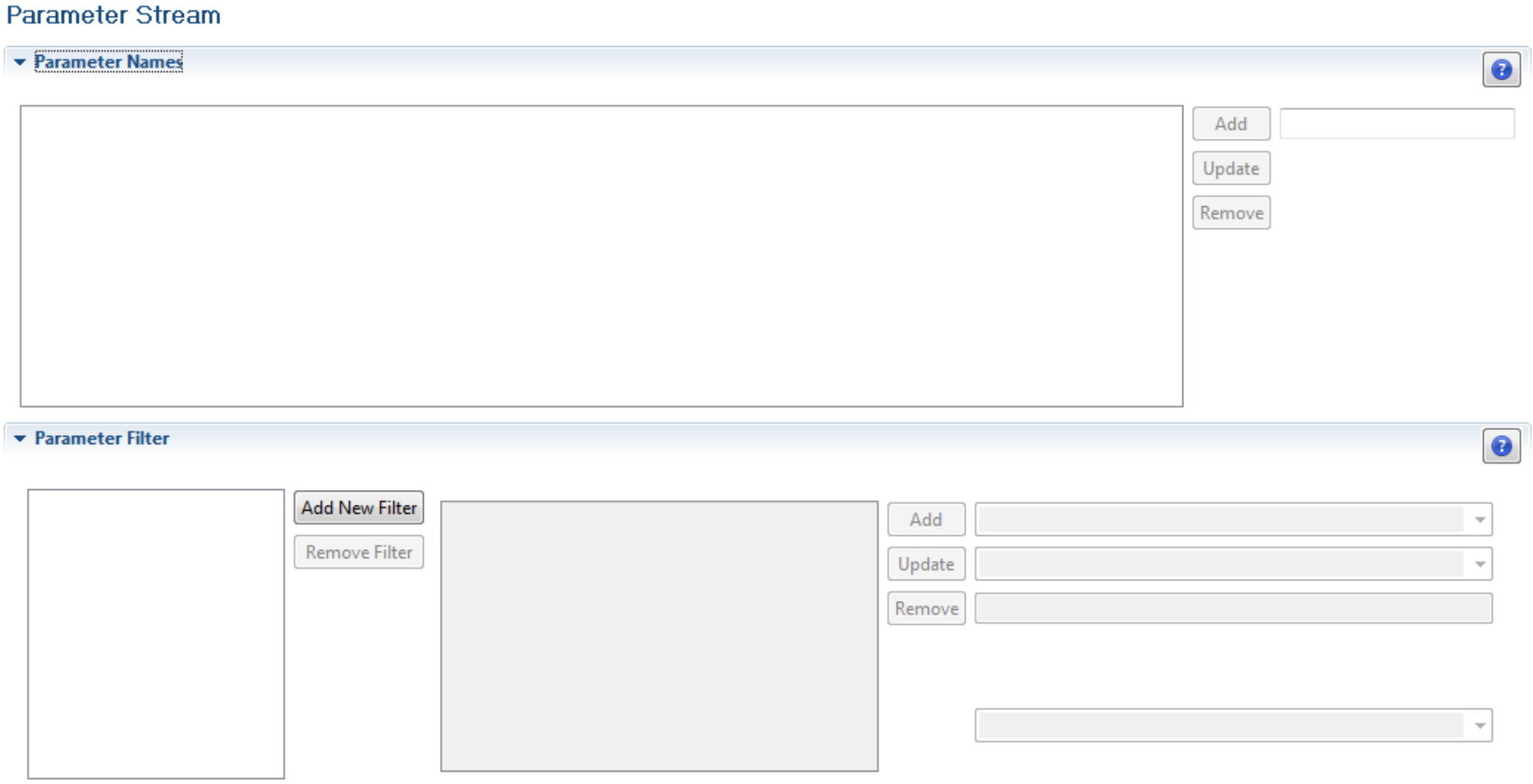
This section provides an overview of all the Stream Request Forms available in the application.

C.1 Schedule Page

The schedule page is common across all stream requests.

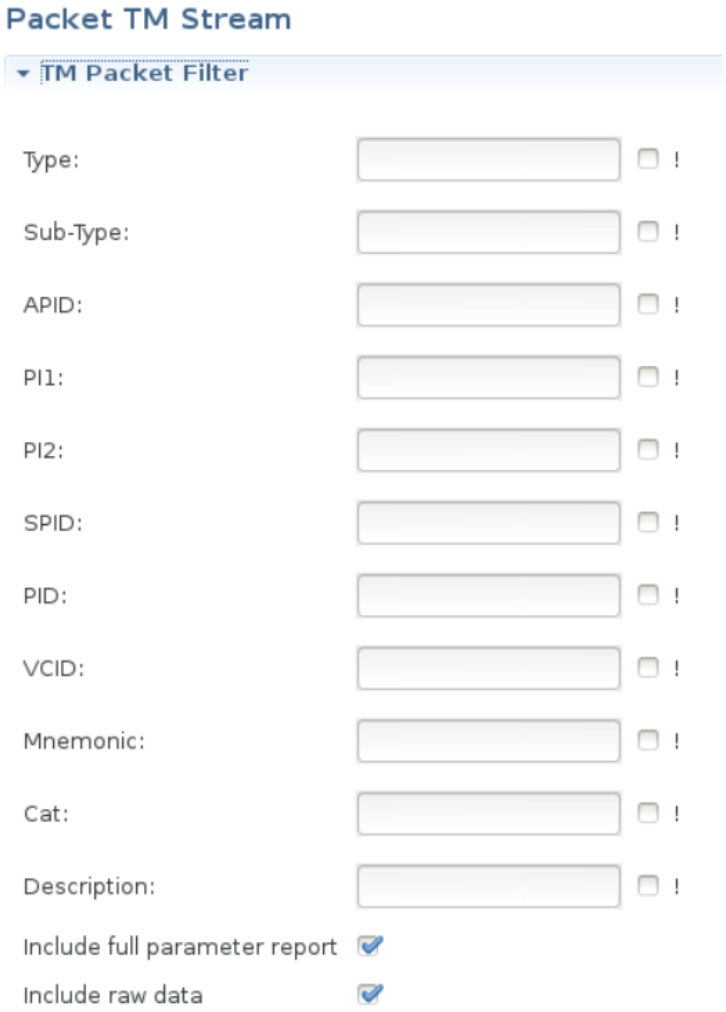


C.2 Parameter Stream

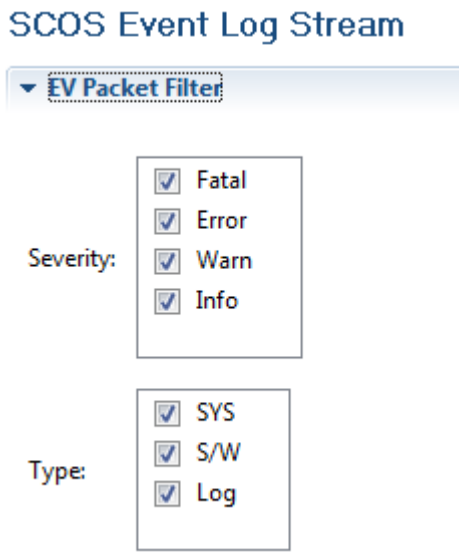


C.3 Packet TC Stream

C.4 Packet TM Stream



C.5 SCOS Event Log Stream



C.6 Out of Limits Stream