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CMS X-Tools

User Manual - 02 - X-Tools Client

English

Release 2016-10

Safety Guidelines

This document contains notices which you should observe to ensure your own personal safety as well as to avoid property damage. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring to property damage only have no safety alert symbol



Danger

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



Warning

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Caution

Used with the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Notice

Used without the safety alert symbol indicates a potential situation which, if not avoided, may result in an undesirable result or state.

When several danger levels apply, the notices of the highest level (lower number) are always displayed. If a notice refers to personal damages with the safety alert symbol, then another notice may be added warning of property damage.

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We have checked the contents of this document for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in the manual are reviewed regularly, and any necessary corrections will be included in subsequent editions. Suggestions for improvement are welcomed.

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1 Preface

1.1 Purpose of this Document

This document provides detailed information about the functionalities and usage of the software

- CMS X-Tools

of the CMS product line.

In addition to the detailed information about each dialog and functionality of the **X-Tools Client** which is found within this document, also the following documentation is available:

- CMS X-Tools - User Manual - 01 - Introduction
 - provides an introduction into the basic functionalities of CMS **X-Tools**
- CMS X-Tools - User Manual - 03 - Main Management System
 - provides detailed information about the functionality which is provided by the **Main Management System**
- CMS X-Tools - User Manual - 04 - Device Management System
 - provides detailed information about the functionality which is provided by the **Device Management System**
- CMS X-Tools - User Manual - 05 - Monitoring System
 - provides detailed information about the functionality which is provided by the **Monitoring System**
- CMS X-Tools - User Manual - 06 - Analyzing System
 - provides detailed information about the functionality which is provided by the **Analyzing System**
- CMS X-Tools - User Manual - 07 - Storage System
 - provides detailed information about the functionality which is provided by the **Storage System**
- CMS X-Tools - Release Notes
 - provides additional information about the released version of CMS **X-Tools**
- CMS X-Tools - Change Log
 - provides an overview about the changes which have been introduced with the current version of CMS **X-Tools**

1.2 Validity of this Document

This document is valid for the following software:

- CMS X-Tools V 04.04

During the following pages, these software packages will be referred to by the term **X-Tools**. Not all editions of **X-Tools** provide all functionality, thus it may be that some of the descriptions within the user manual do not apply to all editions.

1.3 Audience

This document is intended for personnel involved in the commissioning and using of the software:

- **X-Tools**

1.4 Notations

The following notations are used within this document:

- ***bold, italic*** text is being used for the main executables of ***X-Tools***
 - examples: ***X-Tools Client***, ***X-Tools Server***
- **bold** text is being used for the software modules of ***X-Tools***
 - examples: **Main Management System**, **Device Profile Editor**, **IPE Socket T001**
- **green** text is being used for controls like tables and trees
 - examples: **Main Profile Settings** table, **Device Profile Data** table
- **orange** text is being used for simple controls like a menu button, a single row/column/cell of a table or a branch of a tree
 - examples: **Open...** menu button, **IP Address** column, **Target Device Name** cell, **Interfaces Branch**
- **dark yellow** text is being used for the entries of menus and context menus
 - examples: **Advanced Append...**, **Edit**
- Camel Notation is being used for major terms of ***X-Tools***
 - examples: Main Profile, Interface Profile, User Accounts File, Analyzing Function
- < and > brackets are being used for keyboard keys
 - examples: <Ctrl>, <Alt>, <Shift>,
- [and] brackets are being used for mouse operations
 - examples: [left mouse button down], [mouse move]

2 X-Tools Client

2.1 X-Tools Client

2.1.1 Overview

The **X-Tools Client** provides the user interface for the configuration and maintenance of one or multiple **X-Tools Servers**. It is the starting point for and hosts all of the available functionality.

The following screenshot shows an example of an **X-Tools Client**:

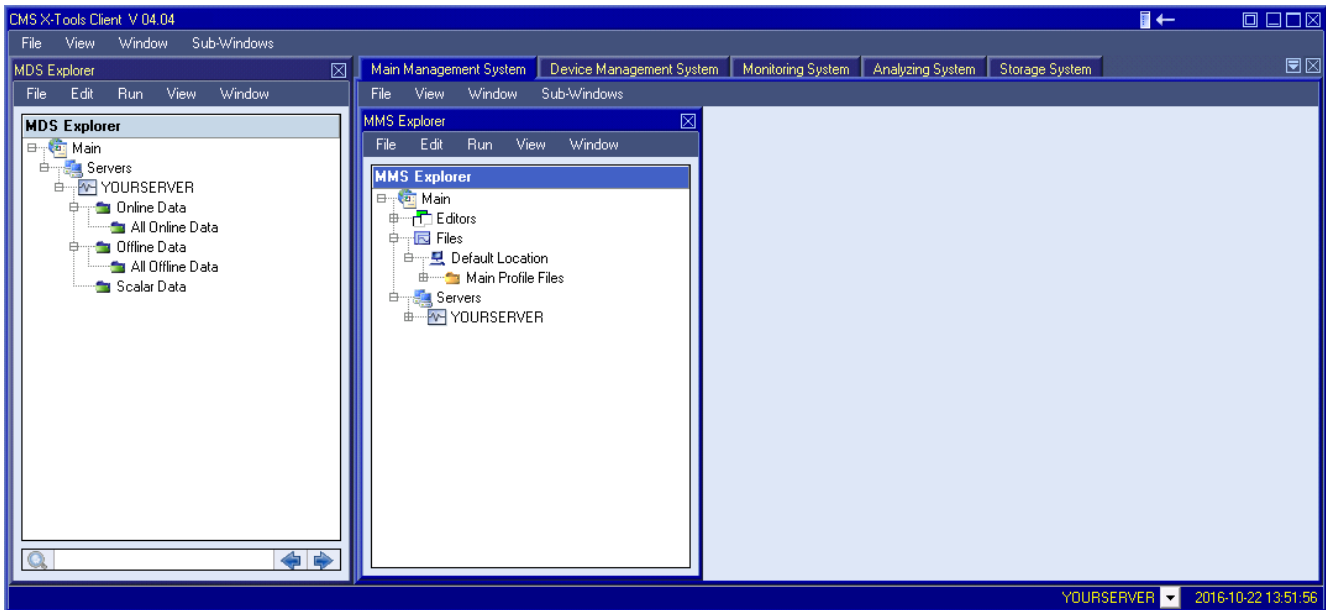


Figure 1: Example of an X-Tools Client

2.1.2 Title Bar

The **Title Bar** of the **X-Tools Client** displays detailed information about its edition and version. In addition, the full path to the currently opened file can be displayed directly within the title bar.

2.1.3 Menu Bar

The **Menu Bar** provides direct access to the functionality of the **X-Tools Client**.

The following functionality is available via the **File** menu:

Menu Item	Description
Exit	closes the X-Tools Client

The following functionality is available via the **View** menu:

Menu Item	Description
Title Bar	toggles whether the Title Bar shall be shown or hidden
Menu Bar	toggles whether the Menu Bar shall be shown or hidden
MDS Explorer	toggles whether the MDS Explorer shall be shown or hidden
Main Management System	toggles whether the Main Management System shall be shown or hidden
Device Management System	toggles whether the Device Management System shall be shown or hidden
Monitoring System	toggles whether the Monitoring System shall be shown or hidden
Analyzing System	toggles whether the Analyzing System shall be shown or hidden
Storage System	toggles whether the Storage System shall be shown or hidden

The following functionality is available via the **Window** menu:

Menu Item	Description
Size > ...	changes the size of the X-Tools Client
Mode > ...	changes the window mode of the X-Tools Client
Arrange > ...	allows to arrange the child dialogs which are opened within X-Tools Client automatically
Background Grid > ...	changes the resolution of the background grid of the X-Tools Client , which is used for the moving of child dialogs in case the manual window mode is active

The following functionality is available via the **Sub-Windows** menu:

Menu Item	Description
Title Bar > ...	allows to show/hide the Title Bar of all child dialogs of the X-Tools Client
Menu Bar > ...	allows to show/hide the Menu Bar of all child dialogs of the X-Tools Client
Configuration Area > ...	allows to show/hide the Configuration Area of all child dialogs of the X-Tools Client
Mode > ...	changes the window mode of all child dialogs of the X-Tools Client
Arrange > ...	allows to arrange the child dialogs which are opened within the child dialogs of the X-Tools Client automatically
Background Grid > ...	changes the resolution of the background grid of all child dialogs of the X-Tools Client , which is used for the moving of their child dialogs in case the manual window mode is active

2.1.4 Workspace

In case the window mode is “Tabbed”, the order of the present tabs is always the same and can not be changed. In this case, the systems of the **X-Tools Client** are arranged in the following order (left to right):

- Main Management System
- Device Management System
- Monitoring System
- Analyzing System
- Storage System

2.2 Master Data System Explorer

2.2.1 Overview

The **Master Data System Explorer** (in the following, the **MDS Explorer**) is used in order to visualize and maintain all of the currently available data from all of the currently connected **X-Tools Servers**. It is displayed as a tree which contains all of the relevant and available **MDS Explorer** items. Via Drag&Drop it is possible to move items within the **MDS Explorer** and from the **MDS Explorer** to other parts of the **X-Tools Client**. The following lines provide a short overview about the information that is available from the **MDS Explorer**.

The following screenshot shows an example of a **MDS Explorer**:

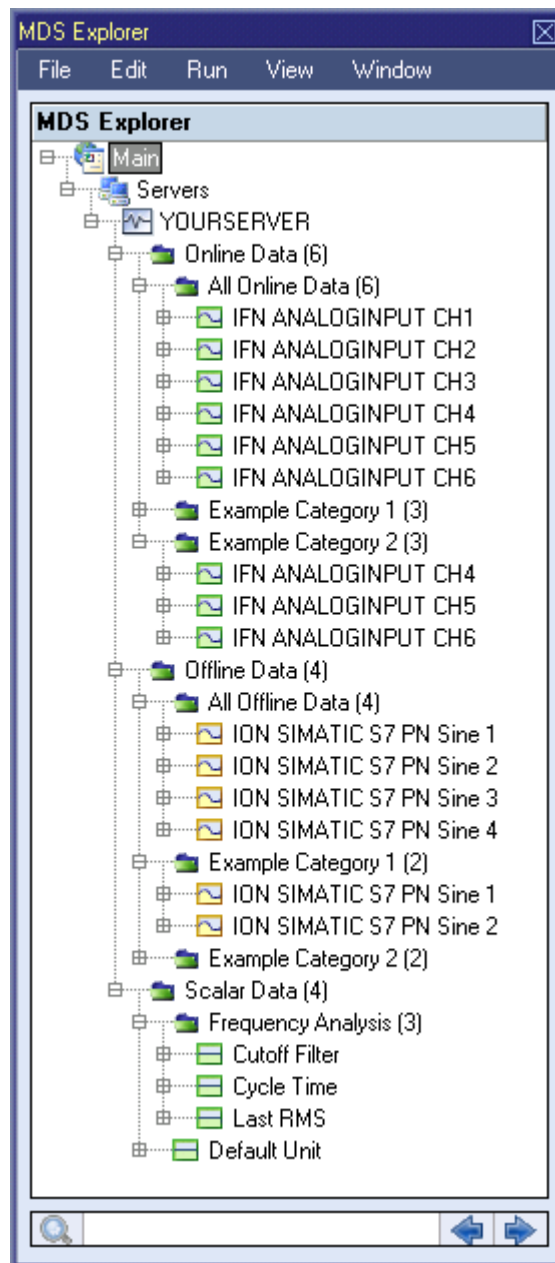


Figure 2: Example of a **MDS Explorer**

2.2.2 Menu Bar

The **Menu Bar** provides direct access to the functionality of the **MDS Explorer**. It can be used instead of and/or in addition to the context menus which are provided by the different branches of the **MDS Explorer**.

The following functionality is available via the **File** menu:

Menu Item	Description
Load Offline Data	opens the ODL Standard T001
Refresh	re-reads all information from the currently connected X-Tools Servers
Hide	hides the MDS Explorer

The following functionality is available via the **Edit** menu:

Menu Item	Description
Expand	expands the currently selected item(s)
Expand all	expands all present items
Collapse	collapses the currently selected item(s)
Collapse all	collapses all present items
Cut	cuts the currently selected item(s)
Copy	copies the currently selected item(s)
Paste	pastes the currently cut/copied item(s)
Remove	removes the currently selected item(s)
Rename	allows to rename the selected item directly within the MDS Explorer
New Category...	opens the Add Category dialog and creates a new category afterwards
Find	puts the search edit box of the Search Area into editing mode
Find References...	opens the Find References dialog
Add Scalar Data...	opens the Add Scalar Data dialog
Edit Scalar Data...	opens the Edit Scalar Data dialog

The following functionality is available via the **Run** menu:

Menu Item	Description
Store	stores the currently selected items and their sub-items using the default configuration for the storage process
Export	exports the currently selected items and their sub-items using the default configuration for the export process
Advanced Store	opens the Advanced Store dialog and stores the selected items and their sub-items according to the chosen options afterwards
Advanced Export	opens the Advanced Export dialog and exports the selected items and their sub-items according to the chosen options afterwards
Fast Analysis > ...	starts a fast analysis for the currently selected data

The following functionality is available via the **View** menu:

Menu Item	Description
Title Bar	toggles whether the Title Bar shall be shown or hidden
Menu Bar	toggles whether the Menu Bar shall be shown or hidden

The following functionality is available via the **Window** menu:

Menu Item	Description
Dock	toggles whether MDS Explorer shall be docked to the left or not
Size > ...	changes the size of the MDS Explorer

2.2.3 MDS Explorer Tree

2.2.3.1 Overview

Each branch of the **MDS Explorer** has a defined task and provides certain functionalities. The following major branches are provided by the **MDS Explorer**:

- Main Branch
- Servers Branch
- Server Branch
- Online Data Branch
- Offline Data Branch
- Scalar Data Branch

2.2.3.2 Main Branch

The one and only **Main Branch** provides all of the other items of the **MDS Explorer**. It can be expanded and collapsed in order to show or hide its sub-items.

2.2.3.3 Servers Branch

The one and only **Servers Branch** provides all of the **X-Tools Servers** which are connected at the moment. The tree of shown **X-Tools Servers** is updated automatically whenever a server is attached or detached.

2.2.3.4 Server Branch

Each **Server Branch** represents one of the currently connected **X-Tools Servers**.

The following specific context menu item is provided:

Context Menu Item	Description
Find References...	opens the Find References dialog for the chosen X-Tools Server

2.2.3.5 Online Data Branch

Each **Online Data Branch** provides all of the online data which is currently available at its parent **X-Tools Server**.

Via the context menu of the **Online Data Branch** and its sub-branches, online data categories can be created, edited and removed. In addition, online data can be dragged from the **All Online Data Branch** to any of the created online data categories in order to create a customized view onto the currently present online data.

The currently available online data can be dragged from the **MDS Explorer** into the other systems of **X-Tools** in order to use them there. In case an online data category is being dragged into another system of **X-Tools** the system behaves as if all of the contained online data would be dragged.

The **Online Data Branch** and each of its sub-branches shows the total number of its below online data. As online data can be grouped within categories and as each online data may be present in multiple categories simultaneously, the counted number of data all sub-branches of a branch can sum up to more than the counted number of data of the parent branch. This is caused by the fact that each branch counts each unique online data only once, no matter in how many sub-categories it is present.

The following specific context menu items are provided:

Context Menu Item	Description
Find References...	opens the Find References dialog for the chosen online data
Cut	cuts the currently selected item(s)
Copy	copies the currently selected item(s)
Paste	pastes the currently selected item(s)
Remove	removes the currently selected item(s)
Rename	allows to rename the selected item directly within the MDS Explorer
New Category...	opens the Add Category dialog and creates a new category afterwards
Fast Analysis > ...	starts a fast analysis for the currently selected online data

2.2.3.6 Offline Data Branch

Each **Offline Data Branch** provides all of the offline data which is currently available at its parent **X-Tools Server**.

Via the context menu of the **Offline Data Branch** and its sub-branches, offline data categories can be created, edited and removed. In addition, offline data can be dragged from the **All Offline Data Branch** to any of the created offline data categories in order to create a customized view onto the currently present offline data.

The currently available offline data can be dragged from the **MDS Explorer** into the other systems of **X-Tools** in order to use them there. In case an offline data category is being dragged into another system of **X-Tools** the system behaves as if all of the contained offline data would be dragged.

The **Offline Data Branch** and each of its sub-branches shows the total number of its below offline data. As offline data can be grouped within categories and as each offline data may be present in multiple categories simultaneously, the counted number of data all sub-branches of a branch can sum up to more than the counted number of data of the parent branch. This is caused by the fact that each branch counts each unique offline data only once, no matter in how many sub-categories it is present.

The following specific context menu items are provided:

Context Menu Item	Description
Find References...	opens the Find References dialog for the chosen offline data
Cut	cuts the currently selected item(s)
Copy	copies the currently selected item(s)
Paste	pastes the currently selected item(s)
Remove	removes the currently selected item(s)
Rename	allows to rename the selected item directly within the MDS Explorer
New Category...	opens the Add Category dialog and creates a new category afterwards
Store	stores the currently selected items and their sub-items using the default configuration for the storage process
Export	exports the currently selected items and their sub-items using the default configuration for the export process
Advanced Store...	opens the Advanced Store dialog and stores the selected items and their sub-items according to the chosen options afterwards
Advanced Export...	opens the Advanced Export dialog and exports the selected items and their sub-items according to the chosen options afterwards
Fast Analysis > ...	starts a fast analysis for the currently selected offline data

Store

The used configuration for the storage process matches the default configuration which is being used by the **Advanced Store** dialog.

While the storing of the offline data is going on, the **Storage Progress** dialog is being displayed. The **Cancel** button can be used in order to cancel the ongoing storage operation.

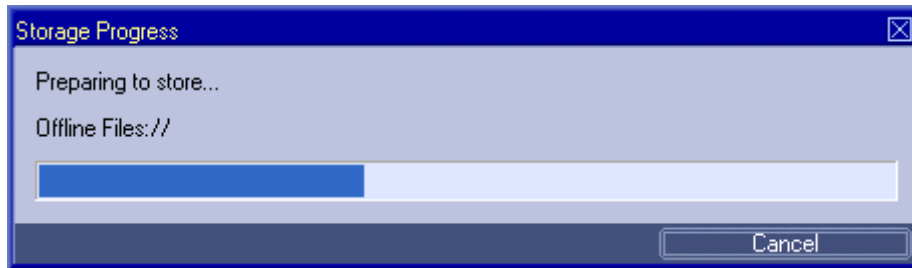


Figure 3: *Storage Progress Dialog*

Export

The default configuration for the export process matches the default configuration of the **Advanced Export** dialog.

While the exporting of the offline data is going on, the **Export Progress** dialog is being displayed. The **Cancel** button can be used in order to cancel the ongoing export operation.



Figure 4: *Export Progress Dialog*

2.2.3.7 Scalar Data Branch

Each **Scalar Data Branch** provides all of the scalar data which is currently available at its parent **X-Tools Server**.

Via the context menu of the **Scalar Data Branch** and its sub-branches, scalar data can be added, edited and removed.

The currently available scalar data can be dragged from the **MDS Explorer** into the other systems of **X-Tools** in order to use them there. In case a scalar data category is being dragged into another system of **X-Tools** the system behaves as if all of the contained scalar data would be dragged.

The **Scalar Data Branch** and each of its sub-branches shows the total number of its below scalar data.

The following specific context menu items are provided:

Context Menu Item	Description
Find References...	opens the Find References dialog for the chosen scalar data
Remove	removes the currently selected item(s)
Add Scalar Data...	opens the Add Scalar Data dialog
Edit Scalar Data...	opens the Edit Scalar Data dialog

2.2.4 Find References Dialog

2.2.4.1 Overview

The following screenshot shows an example of a **Find References** dialog:

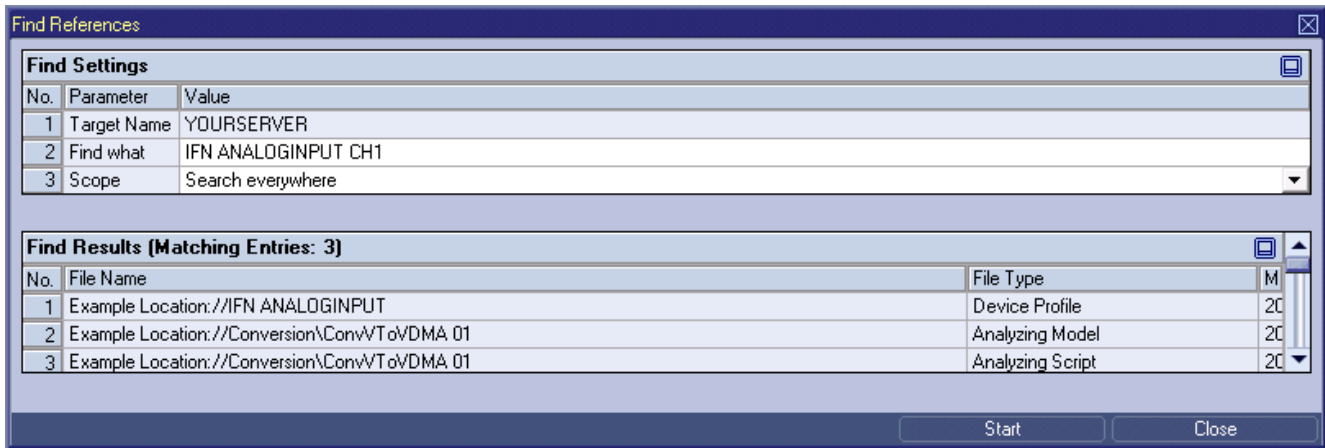


Figure 5: Example of a **Find References** Dialog

2.2.4.2 Find Settings Table

The **Find Settings** table contains the parameters which shall be used during the search of the references:

Parameter	Description
Target Name	Contains the name of the X-Tools Server for which the dialog has been called.
Find what	Allows to enter the string which shall be found.
Scope	Allows to choose where the search operation shall take place.

Find what

The search operation is not case sensitive and can be used in order to find data names within any of the Configuration Files of **X-Tools** (Device Profiles, Monitoring Views, Analyzing Models, Analyzing Scripts, User Functions, Storage Profiles and Loading Profiles).

It is not possible to find items or values which are not data names.

Scope

Scope	Description
Search everywhere	searches for the specified find string within all Configuration Files
Search only the DMS (Device Profiles)	searches for the specified find string only within the Configuration Files of the Device Management System
Search only the MTS (Monitoring Views)	searches for the specified find string only within the Configuration Files of the Monitoring System
Search only the ANS (Analyzing Models, Analyzing Scripts and User Functions)	searches for the specified find string only within the Configuration Files of the Analyzing System
Search only the STS (Loading Profiles and Storage Profiles)	searches for the specified find string only within the Configuration Files of the Storage System

2.2.4.3 Find Results Table

The **Find Results** table receives the the results of the search:

Parameter	Description
File Name	receives the name of the Configuration File which contains the find string
File Type	receives the type of the Configuration File which contains the find string
Modification Date	receives the last modification date of the Configuration File which contains the find string

A double-click onto any row of the **Find Results** table opens the displayed Configuration File within its according editor.

2.2.5 Advanced Store Dialog

2.2.5.1 Overview

The following screenshot shows an example of an **Advanced Store** dialog:

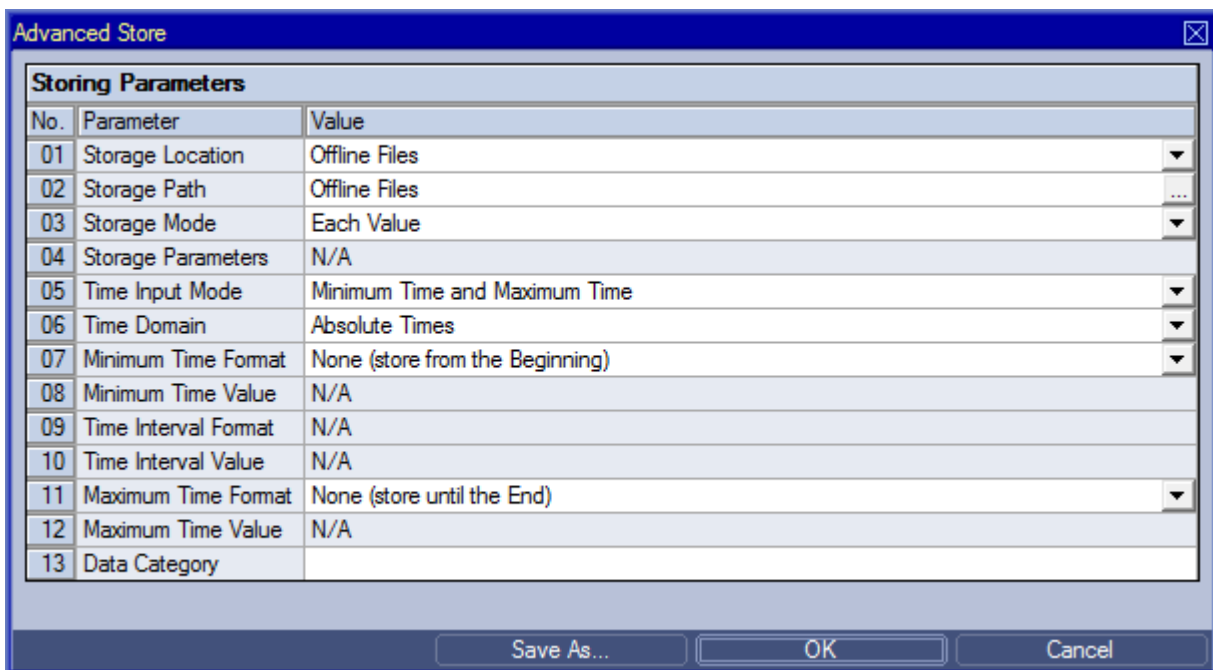


Figure 6: Example of an **Advanced Store** Dialog

2.2.5.2 Storing Parameters Table

The **Storing Parameters** table contains the parameters which shall be applied when the selected items and their sub-items are being stored:

Parameter	Description
Storage Location	allows to switch between the already defined storage locations and to define additional storage locations
Storage Path	allows to choose the desired path below the specified storage location
Storage Mode	contains the storage mode which shall be applied
Storage Parameters	contains the storage parameters which shall be applied
Time Input Mode	allows to switch between the available time input modes
Time Domain	allows to switch between the available time domains
Minimum Time Format	allows to switch between the available input formats for the minimum time
Minimum Time Value	allows to enter the minimum time of the data which shall be loaded
Time Interval Format	allows to switch between the available input formats of the time interval
Time Interval Value	allows to enter the time interval of the data which shall be loaded
Maximum Time Format	allows to switch between the available input formats for the maximum time
Maximum Time Value	allows to enter the maximum time of the data which shall be loaded
Data Category	allows to enter the data category which shall be set for the to-be-stored data

Storage Mode

Storage Mode	Description
Each Value	In this storage mode, each value from the data buffer is being stored.
Changes only	In this storage mode, a value from the data buffer is being stored only in case the difference between the value from the data buffer and the last value which has been stored is bigger than the specified hysteresis.
Changes and Interval	In this storage mode, a value from the data buffer is being stored in case the difference between the value from the data buffer and the last value which has been stored is bigger than the specified hysteresis. In addition, the last known value from the data buffer is being stored each amount of time which is specified as interval.
Interval only	In this storage mode, a value from the data buffer never is being stored directly. Instead, the last known value from the data buffer is being stored each amount of time which is specified as interval.

Storage Parameter

Storage Parameter	Description
N/A	This storage parameter is relevant for the storage mode Each Value only and is being applied automatically in case this storage mode is being chosen.
Hysteresis	This storage parameter allows specifying via edit box the hysteresis for to be stored values and is being applied automatically in case the storage mode Changes Only is being chosen.
Hysteresis and Interval	These storage parameters allow to specify via edit box the hysteresis and the amount of time for the to be stored values and are being applied automatically in case the storage mode Changes and Interval is being chosen.
Interval	This storage parameter allows specifying via edit box the amount of the time for to be stored values and is being applied automatically in case the storage mode Interval Only is being chosen.

Time Input Mode

Time Input Mode	Description
None	In this time input mode, the full available time interval of the selected offline data is being stored.
Minimum Time and Time Interval	In this time input mode, the time interval which is specified via the Minimum Time Value and Time Interval Value parameters is being stored.
Minimum Time and Maximum Time	In this time input mode, the time interval which is specified via the Minimum Time Value and Maximum Time Value parameters is being stored.
Time Interval and Maximum Time	In this time input mode, the time interval which is specified via the Time Interval Value and Maximum Time Value parameters is being stored.

Time Domain

Time Domain	Description
Absolute Times	When the time domain is set to "Absolute Times", the Minimum Time Value and Maximum Time Value rows expect the user input as absolute times.
Relative Times	When the time domain is set to "Relative Times", the Minimum Time Value and Maximum Time Value rows expect the user input as relative times.

Data Category

In case a data category is specified, the specified data category is written to the stored files. A backslash ("\") or slash ("/") can be used in order to specify sub-categories. Examples:

- Some Category
- Plant\Machine\Sensor

In case an empty string is set as data category, the default category of each data is stored into the created of-line data file.

2.2.5.3 Menu Bar

The **Save As...** button can be used in order to store the current settings from the **Advanced Store** dialog as new Loading Profile so that these settings can be re-used later also outside the **Advanced Store** dialog.

2.2.6 Advanced Export Dialog

2.2.6.1 Overview

The following screenshot shows an example of an **Advanced Export** dialog:

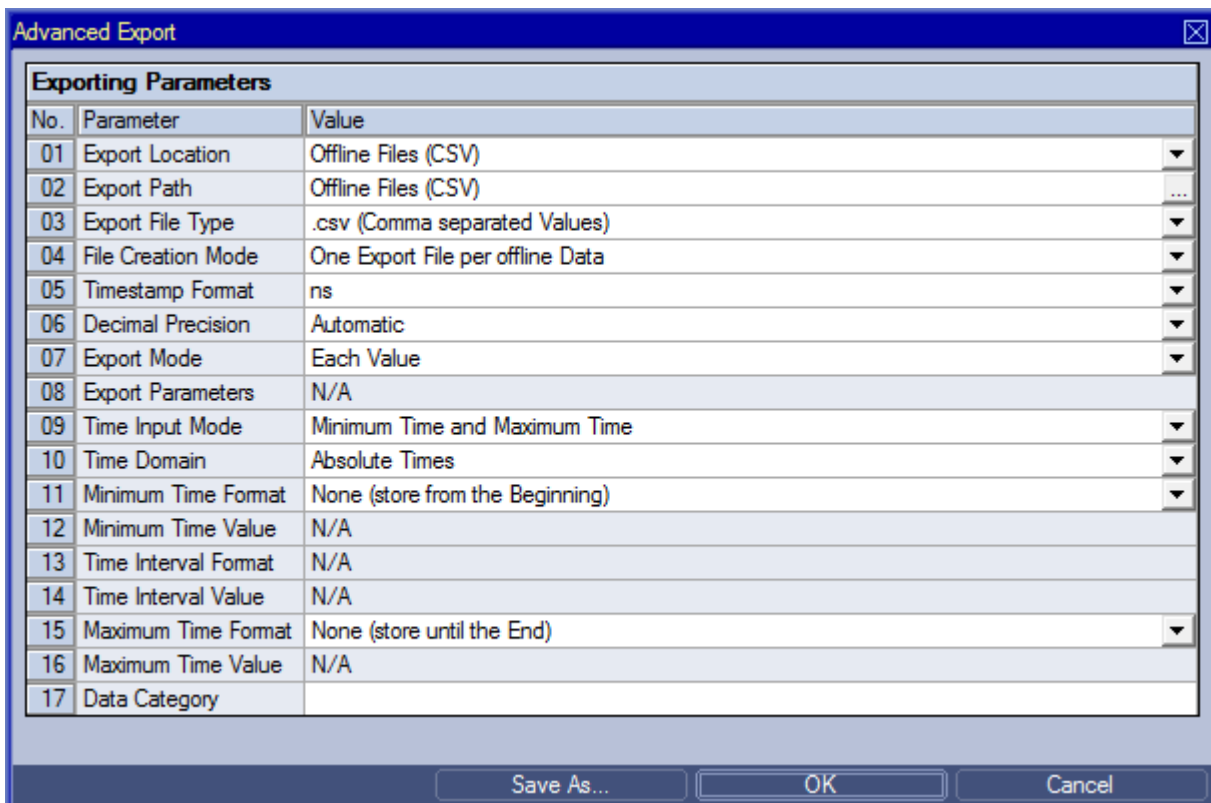


Figure 7: Example of an **Advanced Export** Dialog

2.2.6.2 Exporting Parameters Table

The **Exporting Parameters** table contains the parameters which shall be applied when the selected items and their sub-items are being exported:

Parameter	Description
Export Location	allows to switch between the already defined storage locations and to define additional storage locations
Export Path	allows to choose the desired path below the specified storage location
Export File Type	allows to switch between the available export file types
File Creation Mode	allows to switch between the available file creation modes
Timestamp Format	allows to switch between the available timestamp formats
Decimal Precision	allows to switch between the available decimal precisions
Export Mode	contains the export mode which shall be applied
Export Parameters	contains the export parameters which shall be applied
Time Input Mode	allows to switch between the available time input modes
Time Domain	allows to switch between the available time domains
Minimum Time Format	allows to switch between the available input formats for the minimum time
Minimum Time Value	allows to enter the minimum time of the data which shall be loaded
Time Interval Format	allows to switch between the available input formats of the time interval
Time Interval Value	allows to enter the time interval of the data which shall be loaded
Maximum Time Format	allows to switch between the available input formats for the maximum time
Maximum Time Value	allows to enter the maximum time of the data which shall be loaded
Data Category	allows to enter the data category which shall be set for the to-be-exported data

Export Location

The desired export location for the data can be chosen by selecting of an already defined storage location via the provided combo box, which contains the symbolic names of all of the currently known root data locations of the source **X-Tools Server** of the selected data.

The last entry of the combo box is “...” and opens the **Add Location** dialog when it is being chosen. When a new storage location has been defined via the **Add Location** dialog, it is added to the **Export Location** combo box automatically and automatically becomes the currently selected one.

Export Path

The **Export Path** contains the name of the used location as well as the following path of directories.

Export File Type

Export File Type	Description
.csv (Comma separated Values)	When the export file type is set to “.csv (Comma separated Values)”, the selected items and their sub-items are being exported to .csv compatible files.
.dat (DIAdem Data Format)	When the export file type is set to “.dat (DIAdem Data Format)”, the selected offline data are being exported to .dat compatible files.

File Creation Mode

File Creation Mode	Description
One Export File per offline Data	When the file creation mode is “One Export File per offline Data”, the export creates one file which contains all of the probes of one of the currently to-be-exported offline data.
One Export File per Probe	When the file creation mode is “One Export File per Probe”, the export creates one file for each probe (= 1 timestamp + 1 value) of the currently to-be-exported offline data.

Timestamp Format

Timestamp Format	Description
ns	When the timestamp format is set to "ns", timestamps are written into the exported file as ns since 1970-01-01 00:00:00 GMT (in case of absolute timestamps) or as ns since 000000 00:00:00 (in case of relative timestamps).
Date + Time + ns (GMT)	When the timestamp format is set to "Date + Time + ns (GMT)", timestamps are written into the exported file as date, time and ns in GMT (in case of absolute timestamps) or as time and ns (in case of relative timestamps).
Date + Time + ns (Local Time)	When the timestamp format is set to "Date + Time + ns (Local Time)", timestamps are written into the exported file as date, time and ns in local time (in case of absolute timestamps) or as time and ns (in case of relative timestamps).

Decimal Precision

Decimal Precision	Description
Automatic	When the decimal precision is set to "Automatic", decimal values are written into the exported file with the maximal available accuracy of each value. Thus, the number of digits after the comma can vary in between the values within one line and in between the values of one data from line to line.
0, 3, 6, 9 or 12	When the decimal precision is set to "0", "3", "6", "9" or "12", decimal values are written into the exported file with the specified number of digits.

Export Mode

Export Mode	Description
Each Value	In this export mode, each value from the data buffer is being exported.
Changes only	In this export mode, a value from the data buffer is being exported only in case the difference between the value from the data buffer and the last value which has been exported is bigger than the specified hysteresis.
Changes and Interval	In this export mode, a value from the data buffer is being exported in case the difference between the value from the data buffer and the last value which has been exported is bigger than the specified hysteresis. In addition, the last known value from the data buffer is being exported each amount of time which is specified as interval.
Interval only	In this export mode, a value from the data buffer never is being exported directly. Instead, the last known value from the data buffer is being exported each amount of time which is specified as interval.

Export Parameter

Export Parameter	Description
N/A	This export parameter is relevant for the storage mode Each Value only and is being applied automatically in case this storage mode is being chosen.
Hysteresis	This export parameter allows specifying via edit box the hysteresis for to be stored values and is being applied automatically in case the storage mode Changes Only is being chosen.
Hysteresis and Interval	These export parameters allow to specify via edit box the hysteresis and the amount of time for the to be stored values and are being applied automatically in case the storage mode Changes and Interval is being chosen.
Interval	This export parameter allows specifying via edit box the amount of the time for to be stored values and is being applied automatically in case the storage mode Interval Only is being chosen.

Time Input Mode

Time Input Mode	Description
None	In this time input mode, the full available time interval of the selected offline data is being exported.
Minimum Time and Time Interval	In this time input mode, the time interval which is specified via the Minimum Time Value and Time Interval Value parameters is being exported.
Minimum Time and Maximum Time	In this time input mode, the time interval which is specified via the Minimum Time Value and Maximum Time Value parameters is being exported.
Time Interval and Maximum Time	In this time input mode, the time interval which is specified via the Time Interval Value and Maximum Time Value parameters is being exported.

Time Domain

Time Domain	Description
Absolute Times	When the time domain is set to "Absolute Times", the Minimum Time Value and Maximum Time Value rows expect the user input as absolute times.
Relative Times	When the time domain is set to "Relative Times", the Minimum Time Value and Maximum Time Value rows expect the user input as relative times.

Data Category

In case a data category is specified, the specified data category is written to the exported files. A backslash ("\") or slash ("/") can be used in order to specify sub-categories. Examples:

- Some Category
- Plant\Machine\Sensor

In case an empty string is set as data category, the default category of each data is used for the export.

2.2.6.3 Menu Bar

The **Save As...** button can be used in order to store the current settings from the **Advanced Export** dialog as new Loading Profile so that these settings can be re-used later also outside the **Advanced Export** dialog.

2.2.7 Add Scalar Data Dialog

2.2.7.1 Overview

The following screenshot shows an example of an **Add Scalar Data** dialog:

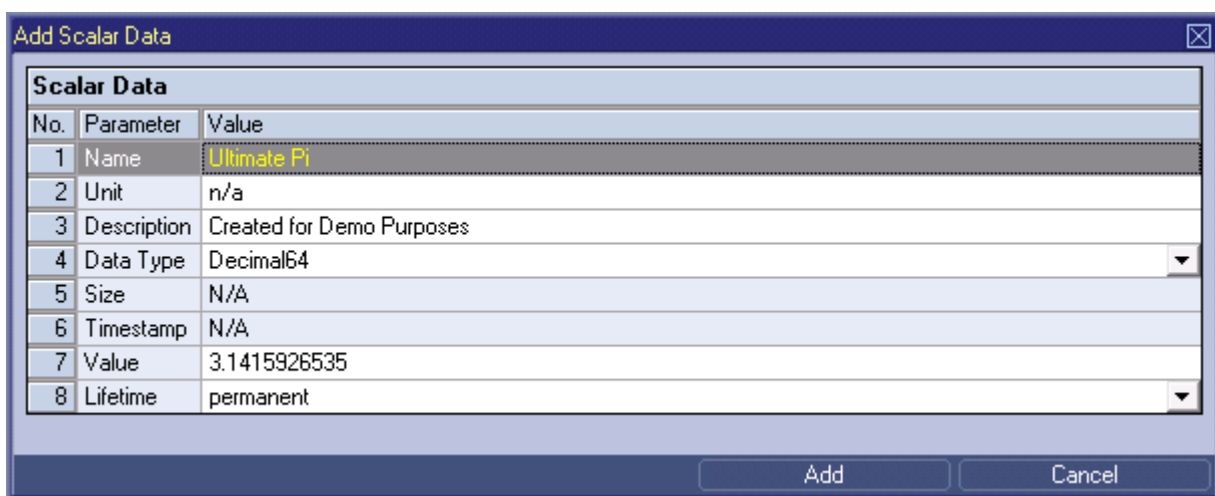


Figure 8: Example of an Add Scalar Data Dialog

2.2.7.2 Scalar Data Table

The **Scalar Data** table contains the parameters which shall be applied to the to-be-created scalar data:

Parameter	Description
Name	Allows to enter the name of the new scalar data.
Unit	Allows to enter the unit of the new scalar data.
Description	Allows to enter the description of the new scalar data.
Data Type	Allows to enter the data type of the new scalar data.
Size	Allows to enter the size of the new scalar data. This parameter is enabled only in case the chosen Data Type is "String".
Timestamp	This value is disabled and can not be edited.
Value	Allows to enter the initial value of the new scalar data.
Lifetime	Allows to choose the lifetime of the new scalar data.

Name

The **Name** can not contain any character which is not allowed in file names and must be unique among the currently present scalar data.

The **Name** can contain one or multiple dots ("."), which can be used in order to create structures of scalar data.

Timestamp

The **Timestamp** can not be edited manually. Instead, it is set to the date and time of the last modification of the scalar data automatically whenever any parameter of a scalar data is changed.

Lifetime

Lifetime	Description
permanent	Scalar data with a Lifetime of "permanent" are stored by the X-Tools Server into a permanent memory and are restored during each startup of the X-Tools Server .
temporary	Scalar data with a Lifetime of "temporary" are not restored during the next startup of the X-Tools Server .

2.2.8 Edit Scalar Data Dialog

2.2.8.1 Overview

The following screenshot shows an example of an **Edit Scalar Data** dialog:

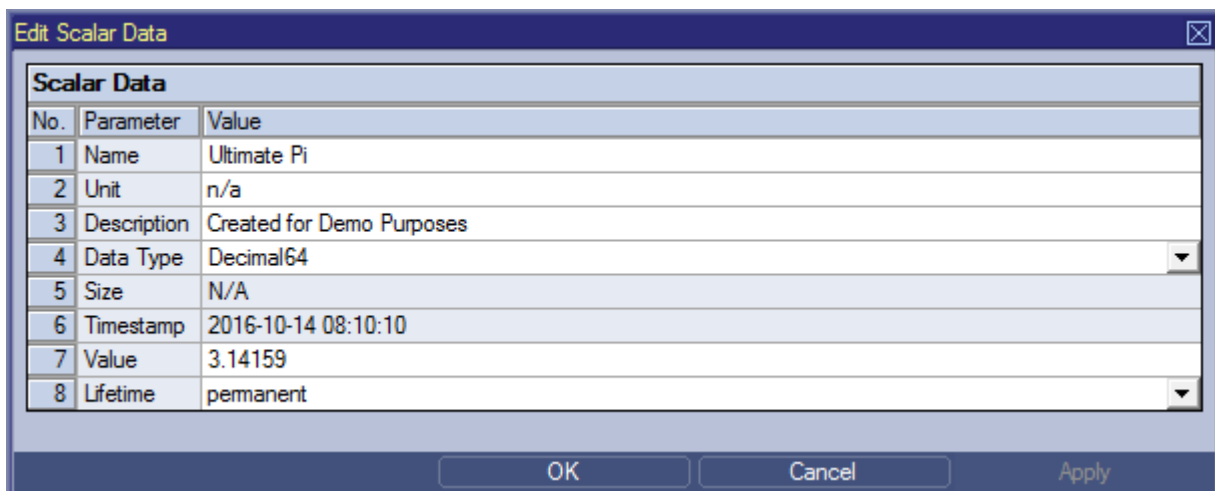


Figure 9: Example of an **Edit Scalar Data** Dialog

2.2.8.2 Scalar Data Table

The **Scalar Data** table contains the parameters of the to-be-edited scalar data:

Parameter	Description
Name	Allows to change the name of the existing scalar data.
Unit	Allows to change the unit of the existing scalar data.
Description	Allows to change the description of the existing scalar data.
Data Type	Allows to change the data type of the existing scalar data.
Size	Allows to change the size of the existing scalar data. This parameter is enabled only in case the chosen Data Type is "String".
Timestamp	This value is disabled and can not be edited.
Value	Allows to change the value of the existing scalar data.
Lifetime	Allows to change the lifetime of the existing scalar data.

2.2.9 Search Area

2.2.9.1 Overview

The following screenshot shows an example of the **Search Area**:

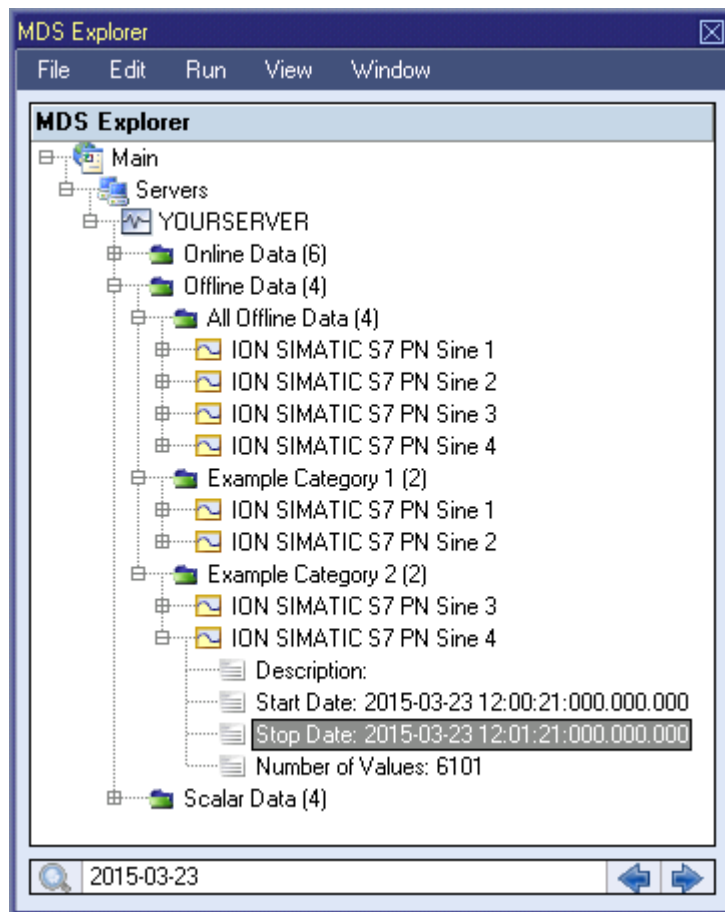


Figure 10: Example of a **Search Area** within the **MDS Explorer**

2.2.9.2 Searchable Items

The entered search string can be used in order to find items of the following types:

- **Online Data Category Branches**
- **Online Data Branches** (including their sub-items like “Description”, “Start Date”, ...)
- **Offline Data Category Branches**
- **Offline Data Branches** (including their sub-items like “Description”, “Start Date”, ...)
- **Scalar Data Category Branches**
- **Scalar Data Branches** (including their sub-items like “Description”, “Unit”, ...)

The search is case-insensitive and does not search for whole words (thus, also a search string like “dat” can be entered in order to find something like “My Data”).

2.2.9.3 Keyboard Operations

The following operations can be performed via the keyboard:

Keyboard Operation	Description
<Ctrl> + <F>	puts the search string editing box into editing mode
<Enter>	in case the search string edit box is in editing mode and <Enter> is pressed, the MDS Explorer searches for the entered search string from the current selection within the MDS Explorer downwards
<F3>	searches for the current search string from the current selection within the MDS Explorer downwards (this behavior is the same as if the Next button would be pressed)
<Shift> + <F3>	searches for the current search string from the current selection within the MDS Explorer upwards (this behavior is the same as if the Previous button would be pressed)

2.2.9.3.1 Buttons

The following operations can be performed via the displayed buttons:

Button	Description
Previous	searches for the current search string from the current selection within the MDS Explorer upwards
Next	searches for the current search string from the current selection within the MDS Explorer downwards

3 Contact Information

Should you have any questions concerning the software application, please refer to the Industry Sector Technical Support.

Department

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Thank you for using one of the above mentioned contacts to ensure your inquiry is registered and can be processed.