User Guide

Taqto - Smart Terminal Management Solution

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1. ABOUT THIS DOCUMENT

General

The Taqto User Guide is a task-oriented document for using the Taqto® Smart Terminal Management Solution. It describes the use of both the Taqto Server Software, Taqto Remote UI Software, K-Taqto Server Software and Taqto Client Software. The purpose of the Taqto Software, and furthermore, some general information on the product concept can also be found in this document.

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Typographic conventions of this document

Notes (including warnings and general notes) call your attention to information.

The following symbols are used in the notes:

WARNING:

Warnings alert to dangers which may cause loss of life, physical injury or ill health in any form.

Note:

Notes indicate additional information such as recommendations or tips.

1.

Task sequence symbol. Indicates the start of a procedure.

How to use this document

This guide is intended for Taqto® users.

To use this document, you do not need to have any particular knowledge on TETRA products or tools. However, you must know how to correctly use a PC, and have some general knowledge on IT tools.

- **Chapter 1. About this document** introduces the general structure of this document, as well as the typographical conventions used in the document and in the Taqto product.
- **Chapter 2. Product overview** gives the general overview of the product including the purpose and the concept of the software.
- **Chapter 3. Taqto Server Software** gives the detailed description of the functions of the Taqto Server Software and the Taqto Remote UI Server Software (including the main functions and use of the parameters).
- **Chapter 4. Taqto Client Software** describes the functions of the Taqto Client Software (including the start-up and terminal identification).
- **Chapter 5. K-Taqto Server and Client SW** describes the functions of K-Taqto server and client sofrware.
- **Chapter 6. Troubleshooting** gives the most common trouble cases and their solutions.

Typographical conventions of the product

The typographical conventions used in Taqto Server Software are listed in the tables below (Tables 1, 2, and 3).

ICON	MEANING	DESCRIPTION
	Apply a parameter	If multiple terminals are selected, the parameter next to this checkbox (for example, the terminal configuration parameter) is applied only if this checkbox is checked.
	Select item	The item next to this checkbox (in the table) is selected only if this checkbox is checked.
	Invalid value	If this icon is visible, the value of the parameter is invalid, for example, strings are too long, numbers are out of limit.
	Status errors in last operation	If this icon is shown in the status column, the last operation performed for the device has failed.
	Error Log entry	Indicates that a log entry is an error event.
	Enrollment registration failed.	Indicates that the enrollment registration and its completion has failed.
	Status warnings in last operation	If this icon is visible in the status column, the last operation performed for the device has caused warning(s).
	Warning Log entry	Indicates that a log entry is a warning event.
	Informative log entry	Indicates that a log entry is an informative one.
	Information on better matching firmware	Indicates that there is a better matching firmware file available.
	Multiple terminals	If multiple terminals are selected and this icon is shown, the respective parameter has different values for different terminals.
	Dependence mark	If this icon is shown in front of the parameter, the parameter has a dependence to another parameter. The tooltip of the icon shows more details.

ICON	MEANING	DESCRIPTION
	Changed value	If this icon is visible, the value of the parameter has been changed, or the user has changed a parameter that has a dependence to the marked parameter.
	Converted value	If this icon is visible, the parameter value has been automatically converted because the content of the imported parameter had changed between terminal SW versions.
	Unset value	If this icon is visible, the value of the parameter has not been set.
	Status new	If this icon is visible in a status column, the related device (that is, a terminal or a TSIM card) is new from Taqto system point of view, and waits for an approval leading to provisioning the device or a rejection leading to removal of the device.
	Status rejected	If this icon is visible in a status column, the related device (that is, a terminal or a TSIM card) is rejected from the Taqto system.
	Status connected	If this icon is visible in a status column, the related element (for example, a terminal or a Taqto configuration element) is connected to the Taqto system.
	Status connected but not synchronized	If this icon is visible in a status column, the related element (a terminal) is connected to the Taqto system but its latest configuration has not been read to the Taqto database.
	Status disconnected	If this icon is visible in a status column, the related element is disconnected from the Taqto system.
	Unknown connection status	If this icon is visible in a status column, the connection status of the related element is unknown.
	Status ejected	If this icon is visible in the status column, the related radio terminal is ejected from the Taqto system.
	Status last operation OK Status ITSI list active Enrollment successfully registered and completed.	If this icon is visible in a status column, the last operation performed for the device has been successful. If this icon is visible in the ITSI list status column, the indicated ITSI list is active. Indicates that the enrollment has been successfully registered and completed.
	Unknown configuration and/or content status	If this icon is visible in a status column, the related element (a terminal) configuration and/or content status is unknown or only partly known.
	User has full user rights	If this icon is visible on the status bar next to the user name, the user has full user rights.
	User has limited rights	If this icon is visible on the status bar next to the user name, the user has limited user rights.

ICON	MEANING	DESCRIPTION
	Enrollment entry is open.	If this icon is visible in the status column, the enrollment entry is open and waiting for registration and completion.
	Enrollment entry is in progress.	If this icon is visible in the status column, the enrollment entry registration and completion is in progress.
	Enrollment entry has expired.	If this icon is visible in the status column, the enrollment entry has expired and it cannot be registered and completed anymore.
	Enrollment entry is deactivated.	If this icon is visible in the status column, the enrollment entry has been deactivated and it cannot be registered and completed anymore.
	Status running	If this icon is shown in a status column, the device in question is operational.
	Monitoring db size	For theTaqto server, this icon indicates whether the monitoring of Taqto database size results in OK status (green), warning status (yellow) or error status (red).
	Monitoring HD space	For the servers connected to the Taqto system, this icon indicates whether the monitoring of the server HD size results in OK status (green), warning status (yellow) or error status (red).
	Task	If this icon is visible in the status column, there is a TASK pending for the device. When clicking this icon as a button, Task management information is shown.
	Task retry	If this icon is visible in the status column, there is a retry task pending for the device. This means that task execution has failed at least once, but task has remained active and is waiting for retrial. When clicking this icon as a button, Task management information is shown.
	Task notification.	If this icon is visible in the status column, there is a TASK pending for the device and the end user of the device has been notified about the pending task. When clicking this icon as a button, Task management information is shown.
	Task active	If this icon is visible in the status column, there is a TASK in progress for the device and the device is offline. For example the network connection between the client and server is broken. When clicking this icon as a button, Task management information is shown.
	Radio in normal mode	If this icon is visible, radio terminal is configured to be in service while connected to Taqto.
	Radio in normal mode but out of service	If this icon is visible, radio terminal is configured to be in normal mode but not in the service while connected to Taqto.
	Radio in local mode	If this icon is visible, radio terminal is configured to be in local mode while connected to Taqto.

ICON	MEANING	DESCRIPTION
	Client credentials not initialized or status unknown	If this icon is visible for the client row, either the status of the client credentials is unknown or client credentials are not yet created.
	Scanning	TMO group scanned
	Not scanning	TMO group not scanned
	Terminal filtered	Terminal management filters used (in Organization or Latest update -columns)
	Search coverage indication	This icon shows coverage of search results. - Full icon indicates that the search was executed for the whole terminal database. This is typically the case if the search is executed in a Taqto Server. - Partial icon indicates that only part of the terminal database was used for search. - Empty icon indicates that there was no terminals to search.

Table 1 Status Icons used in the Taqto Server Software

ICON	MEANING	DESCRIPTION
	Tooltip	The tooltip text tells you the detailed information on the respective element/parameter. It shows, for example, value ranges, dependences and descriptions of the parameters.
	Warning, Changes in the configuration	Indicates that there are changes in the device configuration.

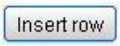
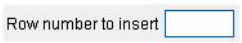
Table 2 Tooltips and Indications used in the Taqto Server Software

ICON	MEANING	DESCRIPTION
	Close button	Allows you to quit the application or a window in process.
	Find button	Start to search the string entered to the text field next to this button.
	Search button	Opens the search dialogue.
	Reset search criteria button	Resets search criteria.
	Help button	Opens the Help of the Taqto Software.
	Minimize button	Minimizes the window (without closing the application).

ICON	MEANING	DESCRIPTION
	Maximize button	Maximizes the window.
	Edit button	If, for example, a terminal or a device is selected, this icon is available. It launches the parameter editor of the selected item.
	Load configuration button	Allows loading of a terminal configuration file.
	Save configuration button	Allows saving a complete terminal configuration file.
	Save configuration group button	Allows saving a configuration file for the selected parameter group.
	Validate configuration button	Allows the validation of the configuration changes against the validation rules.
	View task configuration	View the task configuration in the terminal configuration view (read only mode).
	Edit content button	Opens the content editor dialog when a terminal or a device is selected.
	Load content button	Allows the loading of a terminal content file.
	Add content folder	Allows adding a new folder into the terminal content folder structure
	Remove content folder button	Allows removing a folder from terminal content folder structure.
	Save content button	Allows saving a complete terminal content file.
	Save content folder button	Allows saving a terminal content file for the selected content folder.
	Import content button	Allows importing content files to Taqto.
	Add a terminal button	Allows a manual entry of a new terminal to a terminal management database.
	Load data of multiple terminals button	Allows entry of multiple terminals.

ICON	MEANING	DESCRIPTION
	Remove a terminal button	Allows a manual removal of a terminal in the terminal management database.
	Approve a terminal button	Provisions a new terminal in the Taqto system.
	Reject a terminal button	Rejects a new terminal from the Taqto system.
	Scroll left button	Scrolls to the previous page of the terminal database.
	Page button	Allows selecting a certain page in the terminal database.
	Page containing selected terminals button	Shows that there are selected terminals in this page.
	Scroll right button	Scrolls to the next page of the terminal database.
	Add a device button	Adds a new device to the Taqto system.
	Delete a device button	Deletes a device from the Taqto system.
	Show terminal operation history	Opens terminal operation history dialog.
	Apply configuration changes button	Applies the configuration changes of the Taqto system.
	Discard changes button	Discards the configuration changes to the Taqto system.
	Expand configuration	Expands all nodes open in the database view in the terminal management, organization management, system management and enrollment management applications.
	Collapse configuration	Collapses all nodes in the database view in the terminal management, organization management, system management and enrollment management applications.
	Import a configuration file button	Imports a configuration file either from Taqto database or from the local file system.

ICON	MEANING	DESCRIPTION
	Export a configuration file button	Exports a configuration file either to the Taqto database or to the local file system.
	Import a firmware package button	Imports a new firmware package.
	Import license file	Imports new terminal feature license file.
	Delete a file button	Deletes a firmware package, configuration file, or content related files from the Taqto system.
	Refresh button	Refreshes the information shown on the database view of the selected application.
	Add ITSI list button	Adds a new ITSI list.
	Remove selected ITSI list(s) button	Removes ITSI list(s) from the Taqto system.
	Set active button	Sets the selected ITSI list as active (only one list can be active at a time for each ITSI list type).
	Add ITSI-REF	Manually adds an ITSI-REF to the ITSI-REF database.
	Remove ITSI-REF(s)	Removes the selected ITSI-REF(s) from the ITSI-REF database.
	View ITSI-REF report	Shows an ITSI-REF report on the selected ITSI-REFs.
	Import ITSI-REF(s)	Imports ITSI-REF(s).
	Export ITSI-REF(s)	Exports ITSI-REF(s).
	Send ITSI-REF(s)	Sends the selected ITSI-REF(s) from the ITSI-REF database to AKES.
	Import K-file	Imports a selected K-file with K-values.

ICON	MEANING	DESCRIPTION
	Export K-REF(s)	Exports K-REF(s).
	Add User	Adds a new Taqto user.
	Remove User	Removes the selected Taqto user.
	Add User Group	Adds a new Taqto user group.
	Remove User Group	Removes the selected Taqto user group.
	Clear search results	Clears the search results and returns to the original terminal set.
	Eject radio terminal	Ejects the connected radio terminal from the Taqto system, Returns radio terminal to be fully operative.
	Insert row	Dynamic Table parameters: Insert row to first empty position
	Row number to insert	Dynamic Table parameters: Insert row to specific empty position.
	Move up	Dynamic Table parameters: Move selected row upwards.
	Move down	Dynamic Table parameters: Move selected row downwards.
	Add organization	Add a new Organization under selected.
	Delete organization	Deletes selected Organization
	Apply	Apply configuration changes. Apply Organization structure changes.
	Revert	Revert the Organization structure changes.
	Filter	Filter for filtering the information column. Used in Terminal Management and Enrollment Management. When the filter is active, the terminal filtered icon is visible instead.
	Create new enrollment set.	Creates a new enrollment set.

ICON	MEANING	DESCRIPTION
	Export enrollment set.	Exports the enrollment set to a file.

Table 3 Buttons used in the Taqto Server Software

Note: What software applications and functions are available depends on the access rights given by the administrator.

2. PRODUCT OVERVIEW

Purpose of the product and the concept

The Taqto Solution is an advanced, secure and adaptable client-server -based solution for fast and cost-effective control and maintenance of TETRA terminals.

The main features of the Taqto Solution are listed in Table 4.

FEATURE	TAQTO SERVER SOFTWARE	TAQTO REMOTE UI SOFTWARE	TAQTO CLIENT SOFTWARE
Setting parameters of the radio terminals	X	X	X
The content of the terminal is automatically saved to the database. So the user can view the terminal details and parameters even if the terminal is not connected.	X	X	X
Downloading software to radio terminals (flashing)	X	X	X
Multi-flashing and -parametering up to 32 terminals as a single task (Updating a software and parameters takes less than 10 minutes per terminal.)	X	X	X
The software runs on a standard desktop or laptop computer using Windows 8 and Windows 10 operating system	X	X	X
Quick check of the status of the terminals connected to the Taqto Software	X	X	X
Possibility to manage users	X	X	X
Possibility to manage terminal configurations	X	X	X
Possibility to manage organization hierarchy	X	X	X
Possibility to manage subscriber enrollments.	X	X	X
A history of updates for each terminal when new software versions and parameter configurations have been downloaded to the terminals		X	X
Additional features: connection management, system monitoring and self-diagnostics, event and error logging	X	X	X
Asset Management	X	X	X
Smart Card required for installation			X
Devices can be connected directly to machine running this software	X		X

Table 4 Main features of the Taqto Solution

The Taqto® Smart Terminal Management Solution includes the Client and Server Software running on a PC and the hardware needed for connecting terminals.

WARNING:

This is **a Class A** product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures

A **Class A** product satisfies the class A interference limits, but does not satisfy the class B limits. A **Class A** product may be used in commercial and industrial establishments, but not in domestic establishments or in residential areas.

The use of a **Class B** product is not generally subject to restrictions. A **Class B** product may be used in domestic establishments.

Taqto Server Software

The Taqto Server Software offers a logical and interactive user interface for managing TETRA terminals by Airbus DS SLC and TETRASIM cards, as well as easy and flexible means to update new software versions and to define new parameter sets or parameters in these terminals. In addition, the Taqto Server Software is used to define system configurations, to manage and monitor the deployed Taqto system, and to manage Taqto users and terminal asset data.

Taqto Remote UI Software

The Taqto Remote UI Software is a separately running software package that provides a remote user interface access to the Taqto Server Software. It offers the same user interface and features as the Taqto Server Software. The only difference is that the Taqto Remote UI Software connects to the Taqto Server Software that is running in another PC. So it enables to access to Taqto applications locally from a remote PC.

Taqto Client Software

The Taqto Client Software can be used to show the status of the connected terminals and to follow up their programming activities.

Taqto Home Client Software

The Taqto Home Client Software is intended for the device's users. The users can connect their devices to the Taqto Home Clients and view statuses of their devices. When connected the device configuration can be updated. The Taqto Home Client shows the status of the operation. The device configuration updates are provided by the User Organization, and they are distributed from the Taqto Server to the Taqto Home Clients via Internet connection (**online** mode) or as a task file (**offline** mode).

Note: Currently the only device supported by Taqto Home Client Software is P8GR TETRA pager.

Taqto user management

The Taqto software enables an intelligent user management with a user access control and user profiles. This allows only the authorised users to use the Taqto software. The system administrator responsible for the Taqto Solution has a special PIN code for using the Taqto admin smart card. The PIN code grants the access rights to create and manage users in the Taqto Server Software. The system administrator can define either full or limited access rights to users.

Data management

The Taqto software has centralized data management which enables handling critical information. The Taqto database management system offers a possibility to store and administer data related to Taqto users and their access rights, the terminals and their configurations and terminal management history as well as the Taqto system configurations.

System management

The Taqto software continuously monitors Taqto deployment, indicating the status of each added device connected to the Taqto system. The clear and intuitive "traffic light" status information gives the Taqto server user an instant snapshot on the status of Taqto deployment, indicating nearly real-time the possible warnings that must be taken care of, or alerts that need immediate corrective actions to ensure that theTaqto system is fully operational.

Taqto ITSI management

The Taqto software implements TETRA Individual Subscriber Identity (ITSI) management using both manually entered ITSI numbers and ITSI lists. When ITSI lists are used, ITSI numbers can be given automatically for the programmed subscribers. ITSI management implements also ITSI-REF management for the AKD concept.

Taqto Online ITSI management

The Taqto software implements TETRA Individual Subscriber Identity (ITSI) management with the online connectivity with the TETRA Infrastructure and AKES server. This feature allows synchronization of the subscriber numbers directly with the database in AKES, ensuring that no duplicates of subscribers are possible to be created with the radio terminal management tool chain.

Note: Tactilon Agnet ITSIs do not support AKES.

Taqto K Management

The K-Taqto software implements TETRA Authentication Key (K key) management with both generation and programming features supported as separate Taqto application licenses. The programmed K-REFs can be managed according AKD concept.

Taqto SCK Management

The Taqto Software implements SCK key generation and programming features in the Terminal Management application. SCK keys are generated manually or automatically by a random number generator. They can also be imported from a file or exported to a file.

SCK associations, that is the link between DMO channels/groups and SCK keys, are configured to terminals when configuring the terminal parameters.

Organization Management

The Taqto software allows end users to create an organization hierarchy and manage terminals in these organizations. Only the users that have the required rights and belong to the correct organization can modify terminals if this feature is used. Organization hierarchy is optional. You do not need to use it for small fleets and installations.

Asset Management

The Taqto software has asset management for provisioned devices. The user can store information data about inventory and depreciation, scheduling of repair and maintenance, location and logistics, availability and utilization, safety monitoring and incident and total life-cycle cost for the devices. This information is stored to a centralized database.

Enrollment Management

The Taqto software enables end users to create subscriber enrollments for pre-provisioning the Tactilon® Agnet App over the air. Users of the Tactilon Agnet App can download application configuration updates remotely over the air by providing the user's enrollment ID to Taqto. Taqto then automatically uploads the requested configuration to the Tactilon Agnet App.

3. TAQTO SERVER SOFTWARE

Introduction

The Taqto Server Software allows to manage TETRA terminals and TETRASIM cards, as well as the Tactilon Agnet App running on an Android smart phone, to update new software versions and to define new parameter sets or parameters in the terminals.

Note: The user can also connect remotely to Taqto User Interface if the Taqto Remote UI Software is installed and configured.

Starting up

Note: Before starting up the Taqto Server, the Taqto service must be started up. It can be done manually or automatically. See **Taqto Installation Handbook** (Chapter **Preparing the Taqto solution to use**).

To start the Taqto Server Software in your desktop or Windows, select **Start** -> **All Programs** -> **Airbus DS** -> **Taqto Software** -> **Taqto** -> **Server Software**

First login

When you start the Taqto Server Software for the first time as administrator, the following **Login** dialogue box is shown:

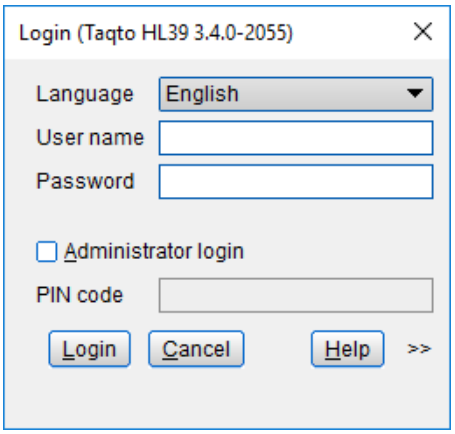


Figure 1 Login as administrator for the first time in theTaqto Server User Interface

1. Enter the user name and the password.
2. Tick the **Administrator login** option.
3. Enter the PIN code.
4. Click the **Login** button.

If you need more information about Taqto software, click the **Help** button to open the Taqto help file from the Login window.

When you start the Taqto Server Software for the first time with a new, recently initialized smart card, you must change the PIN code of the smart card. The **Change the PIN code** dialogue box is shown:

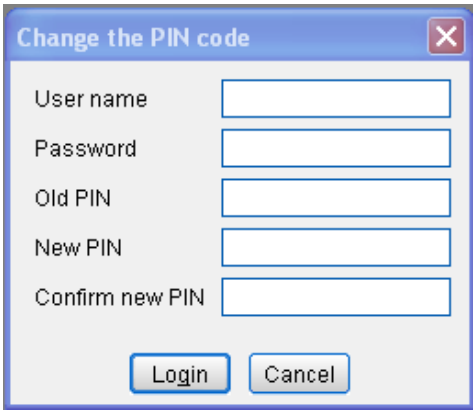


Figure 2 Change the PIN code in the first Root login

After that when you start the Taqto Server Software as a normal user, just enter the user name and the password and click the **Login** button:

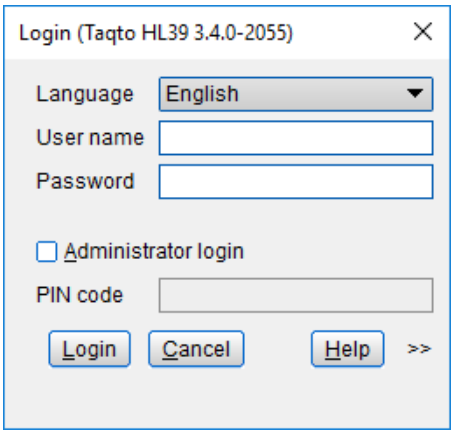


Figure 3 Login for the first time as a normal user in theTaqto Server User Interface

Note: When using the Taqto Client Software, the user name, password, and language are asked only when logging in for the first time. Later on, the User Interface of the Taqto server software opens automatically. Note that you cannot change the language that you have selected when logging in for the first time.

Advanced section of Login window

To open the **Advanced** section of the Login window, click the **[>>]** button.

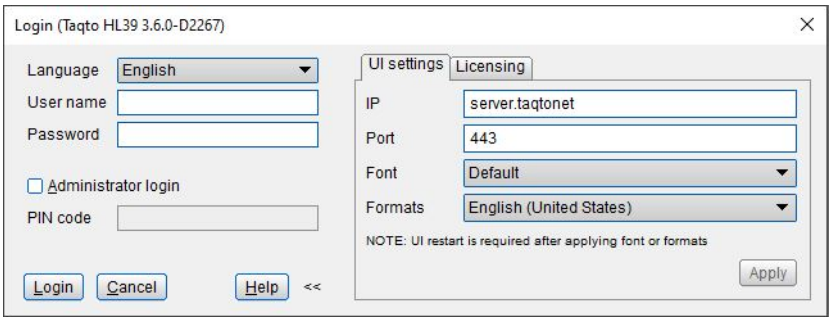


Figure 4 Advanced section of the Login window

To change the UI settings in the Advanced section of the Login window, proceed as follows:

1. Select the **UI settings** tab from the Advanced section.
2. Enter the IP and port information to the corresponding fields.
3. If you need to use Chinese characters, set the **Font** to **CJK**.
4. Select the used format for date, time and numbers in the **Formats** selection.
5. Click **Apply**.
6. Restart the Taqto UI.

To install the Taqto License file in the Advanced section of the Login window, proceed as follows:

Note: The license file must be installed by a user who has Windows administrator privileges.

1. Select the **Licensing** tab from the Advanced section.
2. Click the **Browse** button to open the license file.
3. Click **Apply** to install the license file.

Main User Interface

The window of the Taqto Server Software is divided into separate areas (see Figure 5):

1. Application bar
2. First split bar
3. Table area
4. Second split bar
5. Table details area
6. Status bar area.

All Taqto Server applications use the same general layout, except Terminal Connection Monitor and Log Viewer do not have the second split bar and details area.

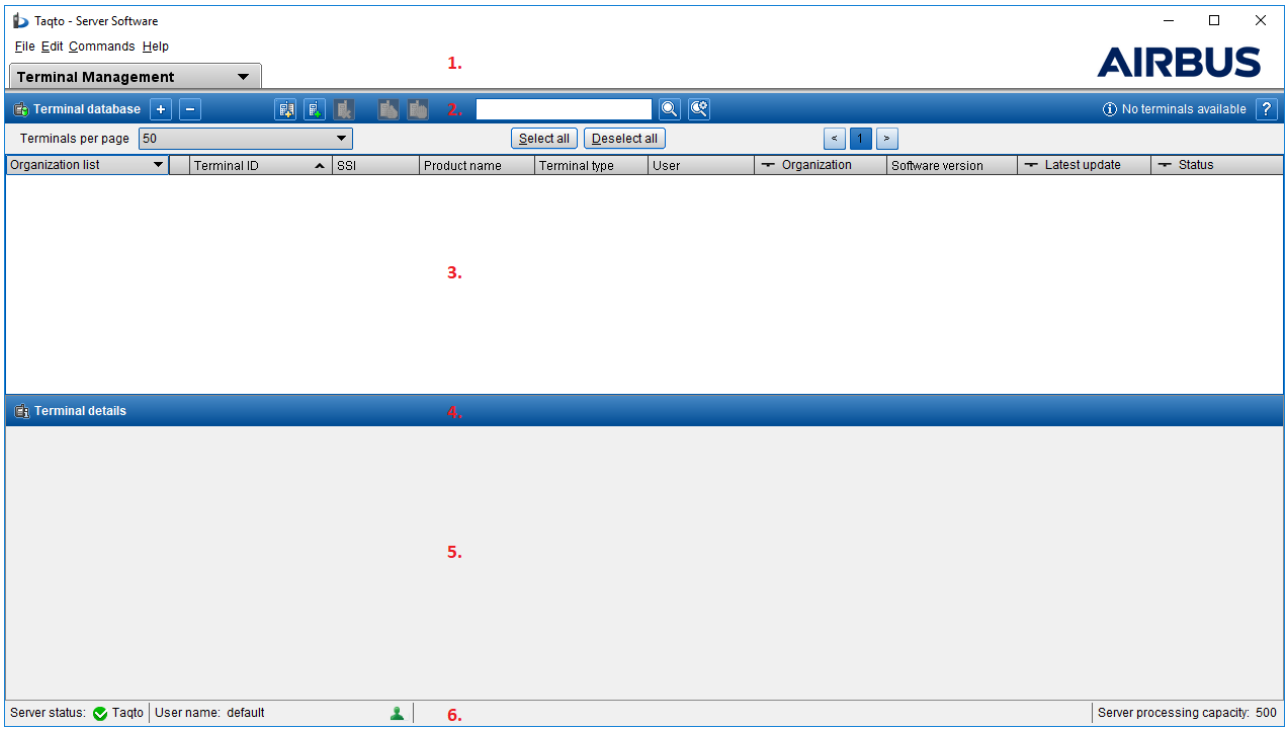


Figure 5 General layout of the Taqto Server Software

Application bar

The application bar contains the main menu and the application drop-down list. The main menu consists of the functions that are frequently used. The application drop-down list contains a list of the available Taqto Server applications according to the access rights of the user: Terminal Management, User Management, System Management, Enrollment Management, Configuration Management, ITSI Management, K Management, and Log Viewer.

The selected application is shown in the application bar.

Table area

The table area shows the database content of the selected application. You can sort the contents by clicking the header of any database column. A sort arrow appears to indicate the sorting column. You can also manage the database contents with toolbar buttons in the first split bar area.

Table details area

The table details area shows the detailed contents of the selected entries in the table area. Functional buttons can also be shown to make changes to the selected entries (for example, **Edit the parameter** button).

Status bar area

The status bar area contains information on the status of the Taqto Server application and errors in Taqto, for example, if the connection to the Taqto database has been lost. The possible status values are:

- *Connected*: the connection to the server has been created, and it is working properly.
- *Connection errors*: errors in the connection to the server, try again later.
- *Session expired*: the session created to the server has expired.

The status bar area also shows information on the user that has logged in to the Taqto Server application, and on the synchronization status of the Taqto system. If the firmware package import is ongoing, it is indicated in status bar with a blinking blue exclamation mark icon. The UI on which the operation was started has a modal dialog open, but the others see only the status bar indication.

In ITSI management, the status bar area also shows information on AKES connectivity. If AKES connectivity is configured, it's status can be either enabled or disabled.

Split bars

The first split bar separates the application bar and the table area. It may contain application-specific toolbar buttons and a search field. In the Terminal Management application, the first split bar contains information on how many terminals are visible in the table area. The number of visible terminals depends on how many terminals match the search criteria or to the filtering used.

The second split bar separates the table area and the table details area. It may contain information on errors or changes in the software or configuration. It also shows the number of the selected terminals (if more than one).

Main menu functions

The main menu functions available in the application bar are shown in Figure 6 (inside a red circle).

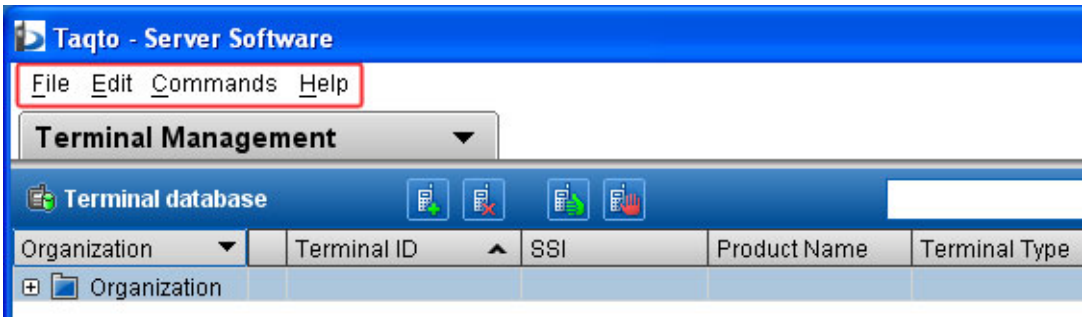


Figure 6 Main menu functions of the Taqto Server Software

The contents of the menu depend on the selected application. Every application has its own functions. For more information, see Table 5.

MENUS	FUNCTIONS	DESCRIPTION	USED IN VIEWS								
			Term. Mgmt	Config. Mgmt	ITSI Mgmt	K Mgmt	Enroll. Mgmt	Org. Mgmt	User Mgmt	System Mgmt	Log Viewer
File	Log out	To log out and return to the login window If the user does not have any actions in the User Interface of the Taqto application, she/he will be automatically logged out after the predefined time expires.	X	X	X	X	X	X	X	X	X
	Exit 	To close and exit the Taqto Server Software	X	X	X	X	X	X	X	X	X
Edit	Cut	To cut the selected value from the field	X	X	X	X	X	X	X	X	X
	Copy	To copy the selected value in the field	X	X	X	X	X	X	X	X	X
	Paste	To paste the value from the clip board to the selected field	X	X	X	X	X	X	X	X	X
	Change the password	To change the password of the user	X	X	X	X	X	X	X	X	X
	Personal information	To view and change the personal information of the user currently logged in	X	X	X	X	X	X	X	X	X
Com-mands	Expand all 	Expands all the folders in Table	X				X	X		X	
	Collapse all 	Closes all the folders in Table	X				X	X		X	
	Load data of multiple terminals 	Import terminals from a given file to Taqto	X								
	Add a terminal 	To add a new terminal to the Taqto database	X								
	Delete a terminal 	To delete a terminal from the Taqto database	X								
	Approve the terminal 	To add a new terminal to the Taqto database when the terminal is connected with the Taqto Server Software	X								
	Reject the terminal 	To reject a new terminal from the Taqto database when the terminal is connected with the Taqto Server Software	X								
	Reprovision terminal	To reprovision already existing terminal in the database	X								

MENUS	FUNCTIONS	DESCRIPTION	USED IN VIEWS								
			Term. Mgmt	Config. Mgmt	ITSI Mgmt	K Mgmt	Enroll. Mgmt	Org. Mgmt	User Mgmt	System Mgmt	Log Viewer
	Stop interrupted programming session in the terminal...	End interrupted programming session in selected P8GR terminal(s)	X								
	Detach terminal	Release terminal back to shared organization	X								
	Reset terminal SC authentication master key	To reset SC authentication key in the terminal	X								
	Read terminal	Reads selected online terminal parameters	X								
	Create Terminal Baseline	To create the template of the Baseline configuration for the terminal.	X								
	Restore Terminal Baseline	To program the Baseline configuration of the device (if available)	X								
	Export task file for terminal	To export terminal task to a task file	X								
	Import result file of task operation file for terminal	To import result file of a previously exported task file after terminal task file execution	X								
	Automatic refresh	To update the view automatically every 10 seconds	X								
	Refresh when opened	To refresh view when application is opened.					X				
	Refresh 	To refresh the view	X				X	X			X
	Find 	To find an entry of the search text field in the database	X	X	X		X	X	X	X	X
	Open search dialogue 	To open search dialogue	X								
	Clear search results 	To revert to original result set	X							X	
	View terminal operation history 	To view terminal's operation history	X								
	View terminal operation errors	To view terminal's operation errors	X								
	View terminal configuration errors	To view terminal's configuration errors	X								
	View terminal task	To view tasks defined for the terminal	X								

MENUS	FUNCTIONS	DESCRIPTION	USED IN VIEWS								
			Term. Mgmt	Config. Mgmt	ITSI Mgmt	K Mgmt	Enroll. Mgmt	Org. Mgmt	User Mgmt	System Mgmt	Log Viewer
	Manage Secondary Organization	To open the menu option for accessing to Manage Secondary Organization dialogue box.	X								
	Import a configuration file 	To import a configuration file		X							
	Export a configuration file 	To export a configuration file		X							
	Import a firmware file 	To import a firmware file		X							
	Import a content file 	To import a content file.		X							
	Import a terminal feature license file 	To import a terminal feature license file		X							
	Delete the file 	To delete the selected file		X							
	Open asset data dialogue box 	To manage asset data of the selected devices	X								
	Stop terminal interrupted session	To stop an interrupted session in the terminal	X								
	Export diagnostic data	To export terminal diagnostic data from online terminals	X								
	Perform terminal factory reset	To perform a factory reset to Tactilon Dabat device's Android-software.	X								
	Create terminal report	To create and save a terminal report of the terminals visible on the terminal database view	X								
	Add ITSI list 	To add a new ITSI list (ITSI List Management)			X						
	Remove ITSI list 	To remove a selected ITSI list (ITSI List Management)			X						
	Show	To show ITSI-REFs from a given time period (ITSI-REF Management)			X						
	Hide selected REFs	To hide selected REFs from the ITSI-REF view (ITSI-REF Management)			X						

MENUS	FUNCTIONS	DESCRIPTION	USED IN VIEWS								
			Term. Mgmt	Config. Mgmt	ITSI Mgmt	K Mgmt	Enroll. Mgmt	Org. Mgmt	User Mgmt	System Mgmt	Log Viewer
	Add REF 	To add a new ITSI-REF pair manually (ITSI-REF Management)			X						
	Remove selected REFs 	To remove selected REFs from the ITSI-REF view (ITSI-REF Management)			X						
	View Report 	To show ITSI-REF report (ITSI-REF Management)			X						
	Import REFs 	To import ITSI-REFs from a file (ITSI-REF Management)			X						
	Export REFs	To export selected ITSI-REFs to a file (ITSI-REF Management)			X						
	Send selected REFs 	To send the selected REFs to AKES (ITSI-REF Management)			X						
	Convert REF files	To convert REF files between known REF			X						
	Import K-file 	To import an existing K file with K -values (K-key Management)				X					
	Create new K-file	To generate a new K-file with new K-values (K-key Management)				X					
	Erase K-database	To delete a K-values in the Taqto K-database (K-key Management)				X					
	Hide selected REFs	To hide selected K-REFs for the K REF view (K REF Management)				X					
	Export K-REFs 	To export selected K-REFs from the K-REF view				X					
	Remove K-REFs	To remove the selected K-REFs from the K-REF view				X					
	Add a device 	To add a new device to the system								X	
	Delete the device	To delete the selected device from the system								X	
	Apply configuration 	To apply the configuration changes made to the Taqto configuration								X	
	Discard changes	To discard the configuration changes made to the Taqto configuration								X	
	Clear all changes	To clear all configuration changes made to the Taqto configuration								X	

MENUS	FUNCTIONS	DESCRIPTION	USED IN VIEWS								
			Term. Mgmt	Config. Mgmt	ITSI Mgmt	K Mgmt	Enroll. Mgmt	Org. Mgmt	User Mgmt	System Mgmt	Log Viewer
	Store selected clients to installation SC	To store the security credentials of the selected clients to the Client installation smart card (CISC)								X	
	Reset authentication data for selected	To reset the security credentials of the selected clients Note! By doing this, new credentials are to be copied to clients before they can connect to the server again								X	
	Resync system to Taqto SC	To manually synchronize the Taqto configuration with all client certifications with the Taqto administrator smart card								X	
	Add a user 	To add a new user to the database							X		
	Delete the user 	To delete the selected user							X		
	Add a group 	To add a user group							X		
	Delete the group 	To delete a user group							X		
	Change the PIN code	To change the PIN code of the administrator							X		
	Clear logs	To delete log messages from the defined time period									X
	Export	To export log messages to file on UI.									X
	Add organization	To add new organization						X			
	Delete organization	To delete an organization						X			
	Apply organization structure	To apply changes in organization structure						X			
	Revert organization structure	To cancel changes in organization structure						X			
	Create new enrollment 	To create new enrollment set					X				
	Export enrollment 	To export enrollment set to a Excel (.xlsx) file					X				
	Deactivate enrollment	To deactivate enrollment set or enrollment entries					X				

MENUS	FUNCTIONS	DESCRIPTION	USED IN VIEWS								
			Term. Mgmt	Config. Mgmt	ITSI Mgmt	K Mgmt	Enroll. Mgmt	Org. Mgmt	User Mgmt	System Mgmt	Log Viewer
Help	Help contents	To open the Help document of the Taqto Software. Help can also be started by pressing **F1**.	X	X	X	X	X	X	X	X	X
	About Taqto	To view the information on the Taqto Server Software	X	X	X	X	X	X	X	X	X

Table 5 Main menu functions of the Taqto Server Software

Common functions

The following functions are common in all Taqto Software applications:

- **Log out**
- **Exit**
- **Cut**
- **Copy**
- **Paste**
- **Change the password**
- **Personal information**
- **Find**
- **Help contents**
- **About Taqto**

Most of these functions are simple to use. However, some of them are described in detail below.

Find

The **Find** function is available in the toolbar of all the applications.

To search:

1. Enter the search string to the search field in the first split bar. The string can contain any type of characters.

Figure 7 Search in the Taqto Server Software

2. Click **Find** . The first match corresponding to the search string is highlighted in the database.
3. Click again. The next match corresponding to the search string is highlighted in the database.

   Note that the search functions differently in terminal management, because it is actually a filter. In the other applications search will jump to the next occurrence.
4. If you want to revert to the original result set, click **Clear search results** .

Note: Characters such as asterisk (*) can be used as wildcard characters when the search criteria is defined.

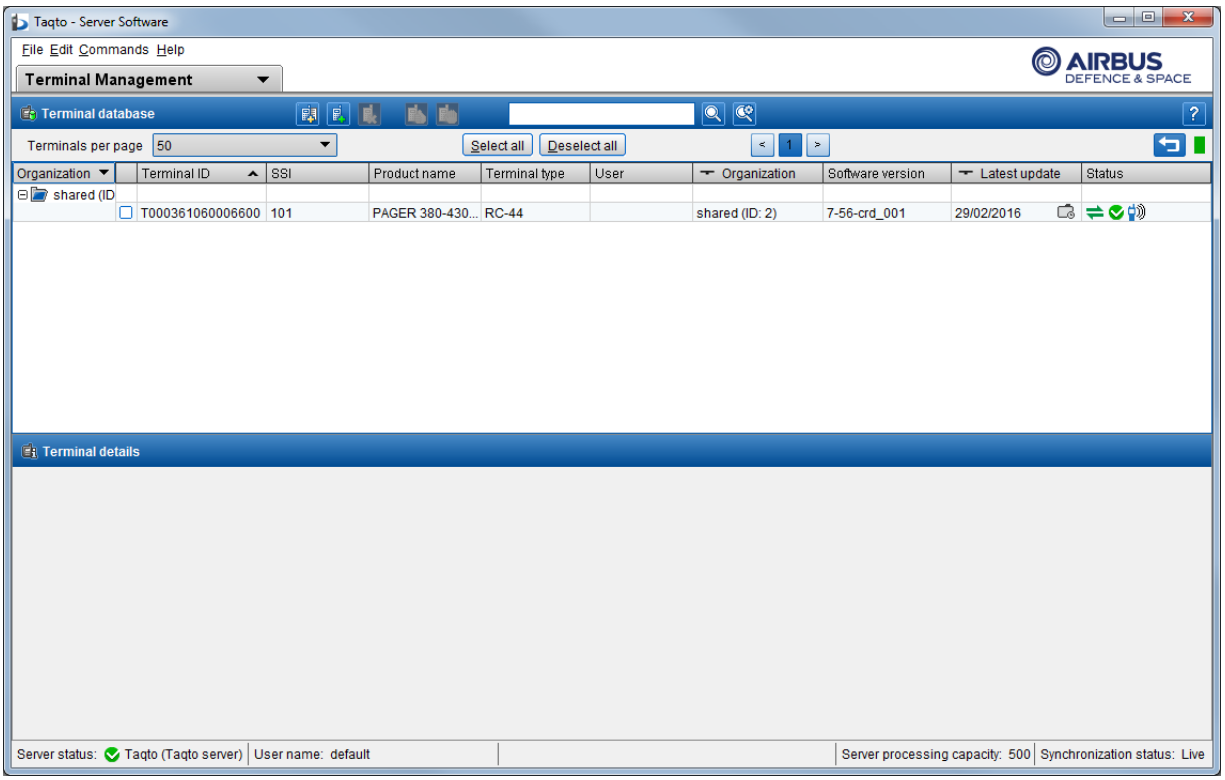


Figure 8 Search results window

Changing the password

To change the password, proceed as follows:

1. Select **Edit** -> **Change the password** in the main menu of the Taqto Server Software. The dialogue box for changing the password is shown.

Figure 9 Change the password in the Taqto Server Software

2. Type the current password and the new password.
3. Click **Ok**.

Note: The password must be 8-16 characters long and contain capital letters, small letters, numbers and special characters: ! " # $ % & ' ( ) * + , - . / : ; < = > ? @.

Viewing and changing personal information

To view or change personal information, proceed as follows:

1. Select **Edit** -> **Personal information** to open the personal information dialogue box.

Figure 10 Change personal information in the Taqto Server Software

2. Change information, if needed.
3. Click **OK**.

Applications

You can select the application to be used from the application drop-down list in the application bar of the of the Taqto Server Software main window.

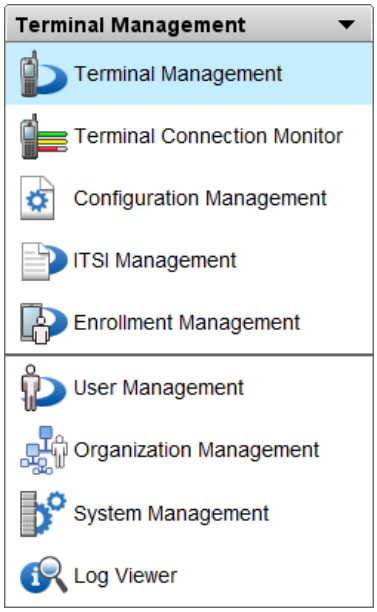


Figure 11 Application drop-down list in the Taqto Server Software

System Management

The System Management application is used to add, manage, and delete devices or elements.

Select **System Management** from the application drop-down list in the application bar. The main view of the System Management application opens.

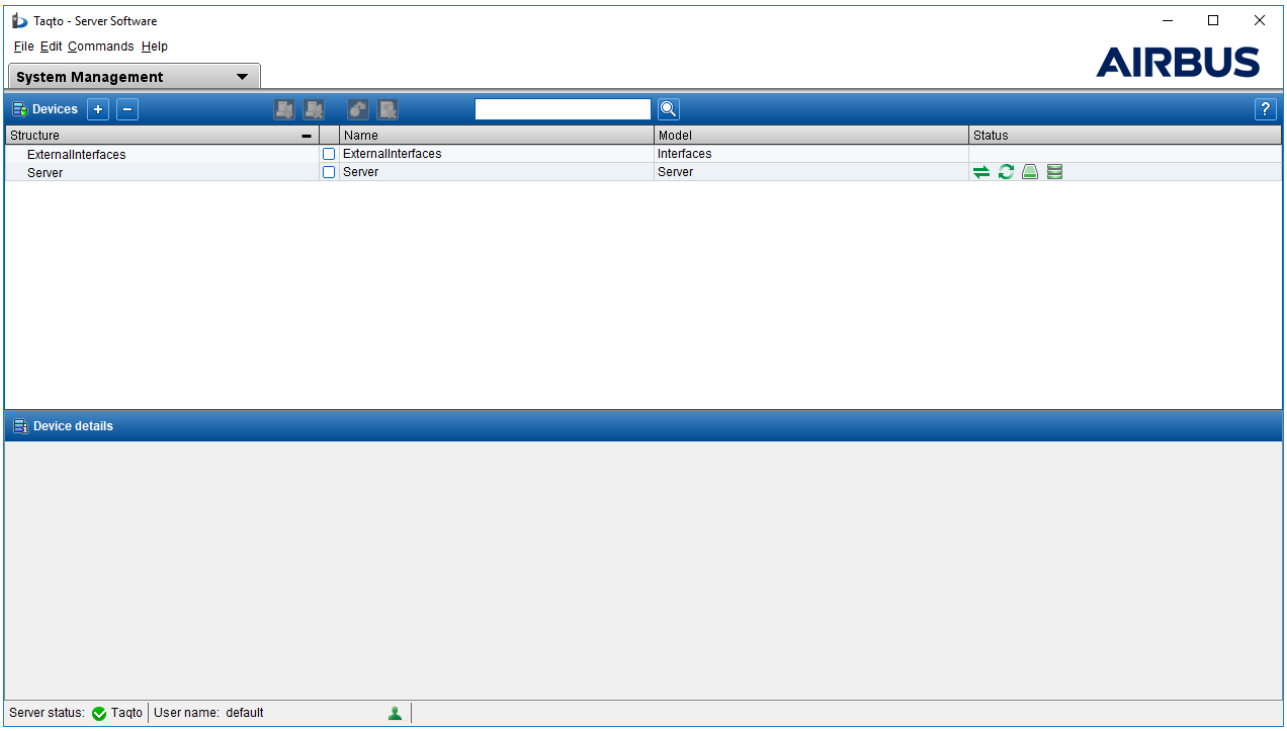


Figure 12 Main view of the System Management application

The System Management application lists all the devices available in the Taqto system, for example, the Taqto connectivity adapters and flashing boxes. The following information is shown in the table: the name, model and status of the device.

If you select a device, the following details are shown in the **Device details** area of the application view:

- model of the device
- type of the device
- **Enabled** checkbox for enabling/disabling the connection
- parent of the device (under which the device has been added)
- name of the device.

The types of the devices used in the Taqto Server Software are listed in Table 6.

DEVICE	DESCRIPTION
Client	A client connected to the Taqto server
Prommer	Flashing box FPS-21
1 slot	1-slot adapter, either for the handheld radio (SFH-1 / SFR-1)
8 slot	8-slot adapter, for the handheld radio(s) (SFH-8 / SFR-8)
1 slot (TH1n)	1-slot adapter for the TH1n terminal
8 slot (TH1n)	8-slot adapter for the TH1n terminals
IO Cable	An IO cable for adapter connectivity, CA-118
TSIM SC Reader	A TETRA SIM card programming adapter
USB Cable	USB cable for parametering and SW update. Note that SW update requires that the current SW in the terminal supports SW update over USB. For example the following cables can be used: A parametering cable CA-119, CA-121, CA-122 or CA-147.1.
SDSSender	SDS sending device (terminal) attached to DLR-3P data cable. Note that there can be only one SDS Sender device installed to the Taqto Server.

OTA	OTA connectivity module for the Tactilon Agnet App running on an Android smart phone
Tactilon Dabat Device	USB connectivity module for the Tactilon Dabat device parametering and SW update.
SecureKeyGeneratorSC	Security key generator smart card used for master key programming for terminal-SC authentication

Table 6 Types of the Taqto devices, System Management view

The buttons shown in Table 7 available in the toolbar are used to add or delete devices.

BUTTON	DESCRIPTION
	Used for adding devices
	Used for deleting devices
	Used for taking new configuration in use
	Used for discarding all configuration changes not yet taken into use

Table 7 Toolbar buttons in the main view of the System Management

When a new device has been added, it is often necessary to configure its parameters. You can do it by selecting the device and clicking the **Edit the parameter** button  in the **Device details** area. You can also change the parameters of the existing devices.

The IO control cables CA-118 should be connected one by one to make sure that they are correctly installed to the PC and configured to the Taqto Server Software. The other devices can be connected before adding them to the Taqto Server Software. In the following sections, the connections are made device by device to make the process clear.

Note: After you have added, edited, or removed devices, confirm these changes by clicking the **Apply configuration changes** button  .

Adding a Taqto client

To add a Taqto client, proceed as follows:

1. In the Taqto **System Management** view, select the server in the list, click the **Add a device** button  in the toolbar and select **Command** -> **Add a device**.
2. In the **Device Details** select client as a model and enter the name of the client.

Note: Ensure that the name given for the client is exactly the same that was given for the client while the client service was installed in the client PC. If the name is not the same, the client cannot connect to the server.

3. Click **Save** and **Confirm**. You can find the client under the server.
4. Edit the client parameters:

In the **Device details** area, click the **Edit the parameter** button . A window displaying the client parameters is shown with one Configuration folder. It contains the pages and parameters listed in the following table.

GROUP	PARAMETER	DESCRIPTION
Services	Local log port	Defines the port for the local log service
	Taqto control ports	Defines the port for the Taqto control services
Connectivity	Wait terminal to wake up	The time how long the Taqto Server Software tries to recognise the terminal when the terminal is inserted into the slot and connected to the system.
	Sleep time after scan	The time cycle how often the Taqto Server Software scans if there are changes in terminal connections (new terminals inserted into or terminals removed from the slot(s)). Note: If the time is very short, the handling of the system becomes slower.
	Sleep after flash	The time the Taqto Server Software waits between the flashing operations of images of the firmware file to the terminal. The value range is 1000-10 000 ms.*
Monitoring	Alert when	Defines the triggering condition for the monitoring
	Quantity type	Defines the reference unit for the monitoring
	Alert level	Defines the alert threshold for the monitoring
	Warning level	Defines the warning threshold for the monitoring

Table 8 Editing client parameters in the System Management

Note: It is recommended NOT to change client parameters without a proper reason.

Note: The device monitoring information is available in the top left corner of the client configuration window. For the Taqto client, information of its connectivity to Taqto system is provided (connected , not connected or connection unknown) as well as monitoring status information of Taqto client's Hard Drive is shown.

Note: Taqto Client installation also requires a Client Installation Smart Card (CISC). For more information, see chapter *Preparations for Taqto Client usage* in the document *Taqto Installation Handbook* (PS11351).

5. Click **OK**.
6. When returning back to **System Management** view, click **Save** to confirm the changes.
7. Click the **Apply configuration changes** button to take configuration changes into use.

Adding devices (other than Tactilon Dabat devices) for parametering and flashing a terminal with USB connectivity cable

To add devices for parametering and flashing a terminal with USB connectivity cable, proceed as follows:

1. Connect the USB connectivity cable between the terminal and either a USB HUB or a PC.
2. Check the serial port number of the connected parametering cable by selecting: **Start** -> **Control panel** -> **System and security** -> **Device manager** -> **Ports**.
3. In the Taqto **System Management** view, select the server in the list, and click the **Add a device** button in the toolbar, or select **Commands** -> **Add a device**.
4. In the **Device details**, select USB Cable as model and enter the name of the cable.
   If the name contains both com and digit, digit is used as the default port number.
5. In the **Device details** area, ensure that the USB is enabled by the checkbox.

If USB is disabled, the serial port is released from Taqto usage.

6. Click **Add** and **Confirm**. You can find the cable under the server.
7. Edit the USB cable parameters:
   - Select the USB cable and click the **Edit the parameter** button in the **Device details**.
   - In the parameter editing view, select the page **Common** and edit the following parameters:
     - *Baud Rate*: Default baud rate for connection (do not modify this).
     - *Flash Speed*: Default baud rate used in flashing, if there is a problem in flashing, this rate can be set lower.
     - *Port number*: enter the port number of your PC that the cable is connected to.
     - *Flash timeout* (ms): Defines the amount of time an USB cable waits for response from the terminal during SW flashing operation.
   - The common connection point settings are listed in Table 11.
8. Click **Ok**.
9. When returning back to the **System Management** view, click **Apply** to confirm the changes.
10. Click the **Apply configuration changes** button to take the configuration changes into use.

Adding OTA connectivity module for configuring Tactilon Agnet

To add an OTA connectivity module for configuring Android terminals, proceed as follows:

1. In the Taqto System Management view, select the server in the list, click the **Add a device** button in the toolbar, or select **Command** -> **Add a device**.
2. In the **Device details**, select the OTA as a device model, and enter the name of the OTA connectivity module.
3. Click **Save** and **Confirm**. You can find the OTA connectivity module under the server.
4. Edit the OTA connectivity module parameters:

   Select the Android OTA connectivity module and click the **Edit the parameter** button in the **Device details.** A window displaying the OTA connectivity module parameters is shown. It contains the pages and parameters listed in the following table.

GROUP	PARAMETER	DESCRIPTION
Common	Port number	Port number for the OTA connections
	Simultaneous connections	Number of simultaneous connections allowed through OTA (1-32).
OTA Management	Keep terminal online time	Time in seconds how long Tactilon Agnet is kept online in idle when connected through OTA connection

Table 9 Editing OTA connectivity module parameters in the System Management

Note: Allow the use of the port 17074 in your firewall configuration for Agnet OTA connection.

5. In the **Device details** area, enable the OTA connectivity module by clicking **Enabled** on.
6. Click **OK**.
7. When returning back to **System Management** view, click **Save** to confirm the changes.
8. Click the **Apply configuration changes** button to take the configuration changes into use.

Adding Tactilon Dabat USB module for parametering and flashing Tactilon Dabat

To add a Tactilon Dabat USB connectivity module for parametering and flashing Tactilon Dabat, proceed as follows:

1. In the Taqto **System Management** view, select the server in the list, and click the **Add a device** button in the toolbar, or select **Command** -> **Add a device**.

2. In the **Device details**, select the Tactilon Dabat USB as a device model, and enter the name of the Tactilon Dabat USB connectivity module.
3. In the **Device details** area, ensure that the USB is enabled by the checkbox.
4. Click **Save** and **Confirm**. You can find the Tactilon Dabat USB connectivity module under the server.
5. If needed, you can edit the Tactilon Dabat USB connectivity module parameters:
   - Select the Tactilon Dabat USB connectivity module and click the **Edit the parameter** button  in the **Device details**.
     - In the parameter editing view, select the page **Tactilon Dabat Device** and edit the following parameters:
     - *Supported VID/PID pairs*: Shows the supported USB vendor ID and production ID pairs.
     - Agnet Configuration Allowed: Defines whether the Agnet TETRA application is allowed to be installed and parametrized through this connection point. Uncheck this option if Agnet TETRA is not used in Dabat terminals.
     - *Tetra Module Flash speed*: Default baud rate used in flashing; if there is a problem in flashing, this rate can be set lower.
     - *Flash timeout (ms)*: Defines the amount of time an USB cable waits for response from the terminal during the SW flashing operation.
   - On the Terminal mode settings page, you can set parameters shared with multiple devices. See the parameters in Table 12.
6. Click the **Apply configuration changes** button  to take the configuration changes into use.

Adding devices for parametering terminal(s) with 1-slot or 8-slot adapter

Adding an adapter

To add a 1-slot or an 8-slot adapter, proceed as follows:

1. Connect the USB end of the IO control cable CA-118 to your PC. The operating system of your PC recognises and installs it automatically. Follow the instructions given by your operating system.
2. You can check from the **Control panel** settings if the cable is connected successfully. The path is normally **Start** -> **Control panel** -> **System and security** -> **Device manager** ->.
3. Connect the other end of the IO control cable CA-118 to the 1-slot/8 slot adapter. Add a power supply for the adapter.
4. Open the **System Management** application of the Taqto Software.
5. Select the server and click **Add a device**  in the toolbar, or select **Commands** -> **Add a device**.
6. The I/O cable with a unique serial number is shown in the **System Management** view.
7. Add the 1-slot/8-slot adapter by selecting the model of the device, either a 1-slot adapter or an 8-slot adapter in the **Device details** area. Enter the unique name of the adapter.

 **Note:** The data connection to the adapter must work correctly before the adapter list item is shown in the drop-down list of the device models.

8. Click **Add** and **Confirm**.

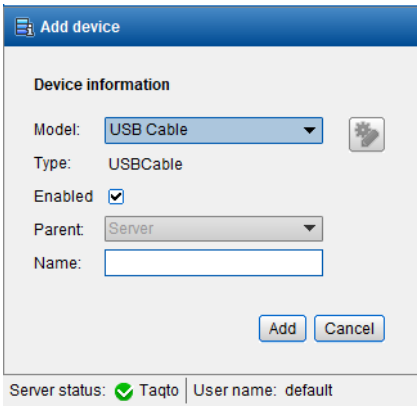


Figure 13 Add device details in the System Management application

9. Edit the adapter parameters.
   1. Select the adapter and click the **Edit the parameter** button in the **Device details** area.
   2. In the parameter editing view, select the page **Common** and edit the following parameters:
      Terminal mode settings
      These parameters are described in Table 11.

Adding a USB cable

To add a cable, proceed as follows:

1. Connect the parametering cable CA-119 between the adapter and your PC. You can check the connection status and the port by selecting **Start** -> **Control panel** -> **System and security** -> **Device manager** -> **Ports**.
2. In the Taqto **System Management** window, select the adapter from the list and click the **Add a device** button in the toolbar, or select **Commands** -> **Add a device**.
3. In the **Device details** area, select USB cable as a model and enter the name of the cable.
4. Click **Add** and **Confirm**. You can find the cable under the adapter.
5. Edit the cable parameters:
   - Select the cable and click the **Edit the parameter** button in the **Device details** area.
   - In the parameter editing view, select the page **Common** and edit the following parameters:
     - *Port number*: enter the port number of the PC the cable is connected to.
     - *Power*: select the option **Internal** from the drop-down list.
6. When using an 8-slot adapter, define also the following settings on page **Connectivity**:
   - *First slot*: the slot the parametering cable is connected to.
   - *Last slot*: the last slot you want to use with the same parametering cable.

Note: You can parameter all terminals to be available with just one parametering cable. However, this slows down terminal handling.

7. When using the 8-slot adapter, check that the value of the position switch is correct (zero (0) if only one 8-slot adapter is in use).
8. Click **Ok**.
9. When returning back to the **System Management** window, click **Apply** to confirm the changes.
10. Click the **Apply configuration changes** button to take configuration changes into use.
11. Insert the terminal(s) into the slot(s) and follow the instructions in section Terminal Management on page 64.

Adding devices for flashing terminal(s) with a 1-slot or 8-slot adapter

Adding an adapter

To add a 1-slot or an 8-slot adapter, proceed as follows:

1. Connect the IO control cable CA-118 between the adapter and your PC. The operating system of your PC recognises the cable and installs it automatically. Follow the instructions given by your operating system.
2. You can check from the **Control panel** settings if the cable is connected successfully. Normally, the path is **Start** -> **Control panel** -> **System and security** -> **Device manager** -> .
3. Connect the other end of the IO control cable CA-118 to the 1-slot/8 slot adapter. Add a power supply for the adapter.
4. Open the **System Management** application of the Taqto Software.
5. Select the server and click **Add a device**  in the toolbar, or select **Commands** -> **Add a device**.
6. The I/O cable with a unique serial number is shown in the **System Management** view.
7. Add the 1-slot/8-slot adapter by selecting the model of the device, either a 1-slot adapter or an 8-slot adapter in the **Device details** area. Enter the unique name of the adapter.

 **Note:** The data connection to the adapter must work correctly before the adapter list item is shown in the drop-down list of the device models.

Adding a flashing box and flashing cable

To add a flashing box and flashing cable, proceed as follows:

1. Add the flashing box.
   1. Make sure that the smart card of the flashing box (SX-4) is inserted into the smart card reader of the flashing box.
   2. Connect the flashing adapter cable CA-120 between the 1-slot or 8-slot adapter and the flashing box.
   3. Select the adapter in the **System Management** application and click the **Add a device** button  in the toolbar, or select **Commands** -> **Add a device**.
   4. In the **Device details** area, select a prommer as a model and enter the name of the prommer.
   5. Click **Add** and **Confirm**. You can find the flashing box under the adapter.
   6. Edit the parameters of the flashing box:
      - Select the flashing box and click the **Edit the parameter** button  in the **Device details** area.
      - In the parameter editing view, edit the following parameters:

        In the **Security** page:

        •*PIN code*: enter the PIN code of the smart card of the flashing box.

        •*Smartcard serial number*: enter the serial number of the smart card (SX-4) of the flashing box.

        On the **Common** page:

        •*Bus name*: select option **NFPD_USB** from the drop-down list.

        •*Power*: select option **Internal** from the drop-down list. (Option not available for TH1n adapters.)

        On the **Connectivity** page:

        •*Serial number*: enter the serial number of the flashing box.

        Note! Use capital letters.

        When using the 8-slot adapter, define also the following settings:

        •*First slot*: the slot the parametering cable is connected to.

        •*Last slot*: the last slot you want to use with the same parametering cable.

 **Note:** If multiple parametering cables are used, it is recommended to share the slots between the cables.You can edit the parameters of all slots (from one to eight) to be available with just one flashing cable. However, this slows down the terminal handling.

   7. When returning back to **System Management** window, click **Apply** to confirm the changes.

2. Add the flashing cable.
   1. Connect the USB cable CA-31 between the flashing box and your PC.
   2. The Windows **Hardware wizard** opens after a while for defining the drivers for the flashing box. Proceed as follows:
      - In **Can Windows connect to Windows Update to search software**, select **No, not this time**.
      - Click **Next>**.
      - In **What do you want the wizard to do**, select **Install the software automatically (Recommended)** option.
      - Windows searches the correct drivers for the flashing box.
      - Click **Finish** to finish the installing process.
      - You can check in the **Control panel** settings if the flashing box is connected successfully. The path is **Start -> Control panel -> System and security -> Device manager**. You can find a new device under the **Nokia Flash Programming Devices**.

        If the Installation wizard does not open, see section TROUBLESHOOTING on page 113.
   3. Click the **Apply configuration changes** button  to take configuration changes into use.
   4. Insert the terminal(s) into the slot(s), and follow the instructions given in section Terminal Management on page 64.
3. To add more than one flashing box, repeat the actions in steps 1 and 2 above.

Adding a device for TSIM card parametering

To add a device for parametering a TSIM card, proceed as follows:

1. Connect the TSIM connectivity kit (i.e. the smart card reader) to the PC.
2. In the **Taqto System Management** view, select the server in the list, and click the **Add a device** button  in the toolbar, or select **Commands -> Add a device**.
3. In the **Device details**, select a **TSIM SC Reader** model, and enter the name of the TSIM reader.
4. Click **Add** and **Confirm**. You can find the TSIM reader under the server.
5. Edit the TSIM reader parameters:
   - Select TSIM reader and click **Edit the parameter** button  in the **Device details** area.
   - In the parameter editing view, edit the Smartcard reader ID to correspond the Smartcard reader ID connected to your Taqto system.

Note: You can find the Smartcard reader ID while reading the System log, and finding out log event about the Smartcard reader connected to the Taqto system. In this event, Smartcard ID is written inside single brackets.

6. When returning back to **System Management** window, click **Apply** to confirm the changes.
7. Click the **Apply configuration** button  to take the new configuration into use.

Adding a device for sending an SDS notification

To add a device for sending an SDS notification you need a TETRA terminal parameterized to the network for SDS sending:

1. Connect the terminal to a data cable connected to the Taqto server workstation. Use the following cables:
   - THR9: DLR-9U or DLR-3P
   - TH1n: DLR-8U
   - THR880i: DLR-3P
2. In the **Taqto System Management** view, select the server in the list, and click the **Add a device** button in the toolbar, or select **Commands** -> **Add a device.**
3. In the **Device details**, select an **SDS Sending Device** model, and enter the name of the SDS sender.
4. Click **Add** and **Confirm**. You can find the SDS sender under the server.
5. Edit the SDSSender parameters:
   - Select SDSSender and click **Edit the parameter** button in the **Device details** area.
   - In the parameter editing view, edit the Port number to correspond the port number data cable connected to your Taqto system.
   - Select Automatic SDS sending to TASK device to send SMS notifications when programming tasks are created for offline MS.
   - Define the default message.
   - Used ITSI number: MS ITSI/SC ITSI (only BSI supported in SC).

Adding SecureKeyGenerator smart card

To add a SecureKeyGenerator, proceed as follows:

1. In the **Taqto System Management** view, select the server in the list, and click the **Add a device** button  in the toolbar, or select **Commands** -> **Add a device**.
2. In the **Device details**, select a **SecureKeyGeneratorSC** model, and enter the name of the SecureKeyGenerator smart card.
3. Click **Add** and **Confirm**. You can find the SecureKeyGeneratorSC under the server.
4. Edit the SecureKeyGeneratorSC parameters:
   - Select SecureKeyGeneratorSC and click **Edit the parameter** button  in the **Device details** area.
   - In the parameter editing view, select the page SecureKeyGeneratorSC and edit the following parameters:
     - *SC ID*: Enter the SC ID of the SecureKeyGeneratorSC.
     - *Pin code*: Enter the PIN code of the SecureKeyGeneratorSC.
     - *Key id*: Enter the Key Id of the SecureKeyGeneratorSC. The Key id is available from the card provider.
     - *Organization*: Select the organization to whose terminals this SecureKeyGeneratorSC is used to program master key for terminal-SC authentication.

Note: After you have configured the SecureKeyGeneratorSC into use, connect the smart card reader to a PC and insert the SecureKeyGeneratorSC to the reader. Taqto automatically detects the SecureKeyGeneratorSC.

Device Status information

The real time status information of the device can be seen per device in the **Status** column in the System Management application.

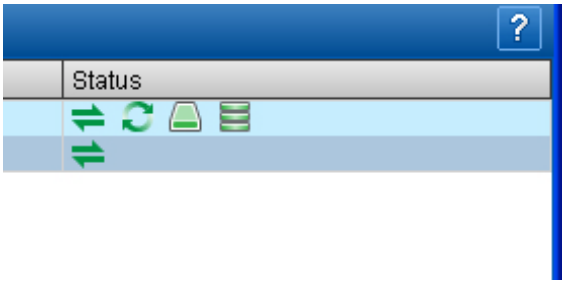


Figure 14 Device status information

The device statuses available are listed in Table 10:

STATUS ICON	MEANING	DESCRIPTION
	Status connected	If this icon is visible in a status column, the related element (e.g. a terminal or a Taqto configuration element) is connected to theTaqto system
	Status disconnected	If this icon is visible in a status column, the related element is disconnected from the Taqto system.
	Unknown connection status	If this icon is visible in a status column, the related element's connection status is unknown.
	Status running	If this icon is shown in a status column, the device in question is operational.
	Monitoring DB size	For Taqto server, this icon indicates whether the monitoring of the Taqto database size is resulting in OK status (green), warning status (yellow), or error status (red).
	Monitoring HD space	For the servers connected to the Taqto system, this icon indicates whether the monitoring of the server HD size is resulting in OK status (green), warning status (yellow), or error status (red).

Table 10 Device statuses

Further information on device statuses is available when device parameters are edited.

Editing a flashing box or cable parameters

To edit a flashing box or cable parameters, proceed as follows:

1. Select the device.
2. In the **Device details** area, click the **Edit the parameter** button . A window displaying the parameters of the device appears with one `Configuration` folder. It contains the pages and their parameters listed in Table 11, depending on the selected device.

GROUP	PARAMETER	DESCRIPTION	FLASHING BOX	CABLE
Security	PIN code	The PIN code of the smart card of the flashing box	X	
	Smart card serial number	The serial number of the smart card of the flashing box	X	

GROUP	PARAMETER	DESCRIPTION	FLASHING BOX	CABLE
Common	Port Number	Defines the port the device is connected to *		X
	Enable log file writing	Defines whether the log file is written or not	X	
	Power	The type of the power supply: *Internal*: for flashing box/ cable *External*: to be used later **Note**: This option is available only when the cable is added under the adapter. The option is not available if the adapter type is TH1n.	X	X
Connectivity	Serial number	The serial number of the flashing box **Note:** Use the capital letters when writing the serial number.	X	
	First slot	The slot the parametering cable is connected to. **Note**: This option is available only when a parametering/ flashing cable is added under the 8-slot adapter.	X	X
	Last slot	The last slot you want to use with the same parametering cable. **Note**: This option is available only when a parametering/ flashing box is added under the 8-slot adapter.	X	X
* The port is defined in the **Control panel** settings of the PC. Usually the path is **Start** -> **Control panel** -> **System** and security -> **Device manager** -> **Ports**.				

Table 11 Editing the flashing box or cable parameters in the System Management

GROUP	PARAMETER	DESCRIPTION	FLASHING BOX	CABLE
Connectivity	Automatic configuration reading	On the connectivity page you can disable the automatic configuration reading for this connection point. Selecting this means that any device connected to this connection point is never read.	X	X
Terminal mode settings	Inherit terminal mode in idle/reading/ writing/ flashing operations for terminal	Defines whether to use a parent terminal mode settings or its own setting.	X	X
	Terminal mode in idle/ reading/writing/flashing/ when ejected operations for terminal	Defines which mode the terminal uses while managed with Taqto if the terminal mode settings for these modes is not inherited from the Taqto server settings.	X	X
	Inherit auto eject after successful operation	Defines whether to use a parent auto eject setting or its own setting.	X	X
	Auto eject after successful operation	Defines if the terminal connected to this connection point will be automatically ejected after successful configuration operation or if there is no operation waiting for terminal.	X	X

Table 12 Parameters shared with multiple devices

3. Click **Save**.
4. When returning back to the **System Management** window, click the **Save** button to confirm the changes.

The system restarts the modified parts automatically. If the IP address has been changed, the whole system is restarted.

Editing server parameters

To edit server parameters, proceed as follows:

1. Select the server in the database.
2. In the **Device details** area, click the **Edit the parameter** button  . A window displaying the server parameters is shown with one `Configuration` folder. It contains the pages and parameters listed in Table 13.

GROUP	PARAMETER	DESCRIPTION
Services	Local log port	Defines the port for the local log service.
	System log port	Defines the port for the system log service.
	Maximum retrieve count	Defines the maximum amount of logs that can be retrieved from the server.
	Server IP	Defines the IP address of the Taqto Server. **Note:** Modifying the Taqto Server IP address causes the Taqto Server to restart.
	RMI Registry port	Defines the port for communication services between the TM-API and the Taqto Server.
	WEB service port	Defines the port for user interface services.
	NS Port	Defines the port for network security services.
	LS Port	Defines the port for local security services
	Licensing port	Defines the port for the Licensing service.
	Configuration port	Defines the port for the Configuration service.
	Localization port	Defines the port for the localization service.
	Localization service language	Defines the language used in localization.
	Terminal connectivity port	Defines the port for the terminal connectivity service.
	Monitoring port	Defines the port for the monitoring service.
	Fileshare port	Defines the port for the file share.
	Taqto control service	Defines the port for the Taqto control service.
Common	Local Certificate Common Name	Defined the name for the local certificate used e.g. with AKES connection.
Connectivity	Wait terminal to wake up	The time how long the Taqto Server Software tries to recognise the terminal when the terminal is inserted into the slot and connected to the system.
	Sleep time after scan	The time cycle how often the Taqto Server Software scans if there are changes in terminal connections (new terminals inserted into or terminals removed from the slot(s)). **Note**: If the time is very short, the handling of the system becomes slower.
	Sleep after flash	The time the Taqto Server Software waits between the flashing operations of images of the firmware file to the terminal. The value range is 1000-10 000 ms.
ITSI Management	Conversion format	Defines the format used for ITSI-REF files.

GROUP	PARAMETER	DESCRIPTION
Terminal Management	Read configuration when connected	Defines if the server reads the terminal configuration values automatically when the terminal is connected to the system. If this option is selected, the server always knows the latest terminal configuration. However, the terminal connection to the system becomes a little slower. Selecting this option is recommended if terminal configurations are programmed with several Taqto systems or together with Taqto and previous programming tools.
	Allow user to force re-write all parameters	Defines if force writing of all parameters to the terminal is allowed. If this is enabled, the end user can decide whether Taqto writes only the changes or all the parameters displayed to the user when making parameter changes.
	Validate configuration after reading	Defines if the server validates automatically the terminal configuration after reading. If this option is selected, the configuration errors are shown automatically in the User Interface. However, the terminal connection is a little slower.
	Restore old configuration if programming fails	Defines if the server restores automatically the latest terminal configuration, if there are errors when programming the terminal.
	Restore messages after flashing	Defines if the status and text messages stored in the radio terminal's message folders are restored after a new SW is flashed to the terminal. If this options is selected, the messages are restored. However, terminal flashing process is a little slower. If this option is not selected, the message folders are emptied in the terminal after SW flashing.
	Proceed flashing even if message reading fails	Defines whether SW flashing is stopped or not if message reading from the radio terminal fails. Message reading is done if 'Restore messages after flashing' is selected.
	Local log file language	Sets the language that the server uses to write the local file log of operations.
	Use automatic SC authentication key programming	Defines whether the SC authentication key is automatically programmed to the terminal when the terminal is connected to Taqto.
	Use automatic MS feature license key programming	Defines whether the features are automatically programmed to the terminal according to the license keys in the imported license files when the terminal is connected to Taqto (see Chapter "Importing terminal feature license files").
	Maximum number of retries allowed for tasks	Defines how many times a task can be retried. Default value is 10. Value 0 means that task retry is not used.
	Allow task retry after detecting terminal configuration differences	When using Home Client, defines whether task retry is allowed when there are configuration differences between actual terminal configuration when read from the terminal and last known terminal configuration by Taqto. Default value is false.
	Eject terminal after successful programming	Default value for eject terminal after successful task programming. If the selected terminal will always be automatically ejected after the created task is successfully programmed to the terminal. **Note:** If the connection point auto eject is configured, it always overrides this task-related auto eject setting.
	Allow eject terminal after program selection for the user	Defines if the terminal user can define the eject after program value when the task is created. If selected, the "eject after programmed" selection is shown in the task comment dialog when the task is being created for the terminal user. (see Terminal Management / Programming a terminal) **Note:** If the connection point auto eject is configured ,it always overrides this user given task-related auto eject setting.
Validation	Group mnemonic uniqueness	Defines the level to validate Tthe MO talk group mnemonic uniqueness. Available selections: - None: mnemonic uniqueness not validated - Folder: mnemonic uniqueness is validated for each folder separately - Global: mnemonic uniqueness is validated globally for group management.
HomeClient	Default HomeClient terminal configuration method	Defines the default HomeClient terminal configuration method in Taqto. Selectable values are 'Compare and configure' and 'Configure only'. If 'Compare and configure' is selected, the existing terminal configuration is read and it is compared to the configuration in the task before the task programming is performed. 'Configure only' selection only executes the task configuration without comparison.
	Allow HomeClient terminal configuration method selection	Defines whether the user can change HomeClient terminal configuration method manually when creating the task.
Session	Login session's inactivity timeout (min)	Defines timeout for end user sessions to log out if inactive.

GROUP	PARAMETER	DESCRIPTION
Monitoring	Alert when	Defines the triggering condition for the monitoring.
	Quantity type	Defines the reference unit for the monitoring.
	Alert level	Defines the alert threshold for the monitoring.
	Warning level	Defines the warning threshold for the monitoring.
Terminal mode settings	Inherit terminal mode in idle/ reading/ writing//when ejected operations for terminal	Defines the default value of which mode the terminal uses while managed with Taqto if the terminal mode settings for these modes is not defined in the flashing bar, adapter or cable specific parameters. This setting can be overwritten in the connection point specific settings.
	Inherit Auto eject after successful operation	Defines the default value of auto eject settings for the connection points under this device. If checked, the terminal connected to the connection point will be automatically ejected after successful configuration operation or if there is no operation waiting for terminal. This setting can be overwritten in the connection point specific settings.

Table 13 Editing server parameters in the System Management

Note: It is recommended NOT to change server parameters without a proper reason.

Note: The device monitoring information is available in the top left corner of the server configuration window. Information on Taqto server's connectivity to Taqto system is provided (connected , not connected or connection unknown) as well as monitoring status information of Taqto server's Hard Drive and database size .

Editing device information

To edit device information in the **Device details** area, proceed as follows:

1. Select the device in the database. The details of the selected device are shown in the **Details area** of the main window.
2. Edit the details of the device.
3. Click **Save**.

The database contents of the device are updated according to the changes.

Deleting a device

To delete the device, proceed as follows:

1. Select the device in the database.
2. Click the **Delete the device** button in the toolbar, or select **Commands** -> **Delete the device**.
3. Click **Ok** to confirm.

The database contents of the devices are updated according to the changes.

Note: In case you are deleting a device that has "child" devices connected to it, an additional confirmation is shown for the deletion.

Configuration Management

The **Configuration Management** application is used to manage the firmware files and configuration files of the terminal. The information is shown in a table containing all firmware and configuration files. The following information is shown in the table: he file type, the file name, the platform, the last modified date and the import date when the file is imported to the Taqto database (see Figure 15).

The first column on the table is used to group the files with following grouping options available: File type, File name, Platform, Last modified and Import date.

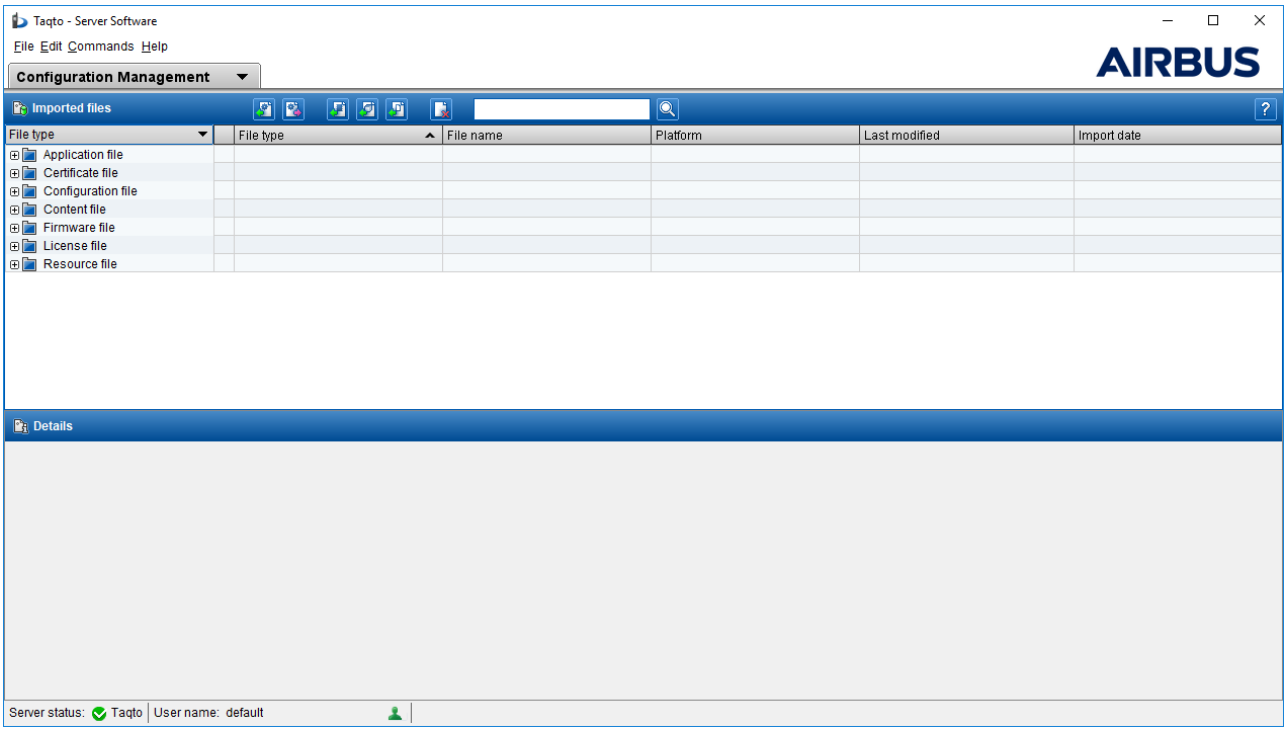


Figure 15 Main view of the Configuration Management application

The toolbar buttons shown in Table 14 are available in the Configuration Management. You can find the same functions under the option **Commands** of the main menu.

BUTTON	DESCRIPTION
	Used for importing a configuration file
	Used for exporting a configuration file
	Used for importing a firmware file
	Used for importing a content file
	Used for importing terminal feature license file
	Used for deleting a file

Table 14 Toolbar buttons in the main view of the Configuration Management

Configuration files

The configuration files list shows all the configurations imported or saved to the Taqto database. It also contains the files saved in the terminal parameter editor view. So the configuration file can contain either the whole configuration or a configuration of a particular group.

Importing a configuration file

Configuration files can be imported to the Taqto database from the selected location of the local hard disk.

To import a configuration file, proceed as follows:

1. Click the **Import a configuration file** button  in the toolbar, or select **Commands** -> **Import a configuration file**.
2. Select the file you want to import.
   It is possible to enter a description for the Configuration file.
3. Click **Ok**.
4. The list of the configuration files is updated according to the changes.

Exporting a configuration file

The configuration files can be exported to the selected location of the local hard disk.

To export a configuration file, proceed as follows:

1. Select the configuration file you want to export.
2. Click the **Export a configuration file** button  in the toolbar, or select **Commands** -> **Export a configuration file**.
3. Select the location you want to export the file to.
4. Click **Ok**.

Editing a configuration file

To edit a configuration file, proceed as follows:

1. Select the configuration file.
2. Click the **Edit** button  in the configuration **Details** view. The details of the current configuration file are shown in a separate window in the tree containing the configurable parameter groups and current values of each parameter.
3. Select the parameter group to be changed. The current values of the group are shown on the right side of the tree.
4. Change the parameter values or remove the parameters from the configuration file.
5. Click **Ok** to return to the **Configuration Management** application.
6. Click **Save** to save the new configuration file information.

Firmware files

A firmware file is a crypted file that contains flash images, parameter descriptions and localisations.

The firmware files list shows all the firmware files imported to the Taqto Server database.

Note: The Taqto Server Software can recognize the terminal only if also the software version of the terminal exists in the list of the firmware files.To see the software version of the terminal, enter *#0000# when the terminal is in IDLE mode. You can also open the Log Viewer from the Taqto UI and search for the text "unsupported" to find any log events about unsupported terminals.

Importing a firmware file

The firmware files can be imported to Taqto Server's database from the selected location of the local hard disk.

To import a firmware file, proceed as follows:

1. Click the **Import a firmware file** button  in the toolbar, or select **Commands** -> **Import a firmware file**
2. Select the file you want to import.

   It is possible to enter a description for the Firmware file.
3. Click **Ok**.

Note: The importing process may take a while.

Note: The firmware import may remove parameters from the existing configurations. You are prompted to continue or cancel in the case any existing tasks are affected. This may also affect the enrollment tasks, which are also automatically removed similar to the affected tasks.

Note: The firmware import may update the internal firmware data structure, which may lead to a situation where older Home Client versions are not supported. In this case a Home Client update is required.

The firmware files list is updated according to the changes.

Details of a firmware file

You can only view the details of the firmware files, but you CANNOT change them. When a firmware file is selected, the details listed in Table 15 are shown in the **Details** area.

INFORMATION	DESCRIPTION
Name	The name of the firmware file
Product names	The products compatible with this firmware file
Images	The flash images included in the firmware file. These files are saved to the terminal during the flashing operation.
TEA	An algorithm, a security setting
Time when created	The time when the firmware file was created.
SW options	Software options of the firmware, for example, JAVA support
Description	Description of the firmware file given by the user
Related entities	Amount of enrollments where selected firmware file is used.

Table 15 Details of the firmware file in the Configuration Management

Content files

The content files list the imported applications (`*.jar`, `*.jad`), certification files and resource files (e.g. `*.png`, `*.jpg`). It also contains the content files saved in the terminal content editor view. A content file can contain either the whole content or a content of a particular content folder only.

Importing a content file

To import a content file, proceed as follows:

1. Click the **Import a content file** button  in the toolbar, or select **Commands -> Import a content file**. A new dialog for importing a content file opens.
2. Select which content type (application, certificate, resource) you want to import from the **Content type** field in the dialog.
3. Enter **Application name** and click **Add** button to select the content files.
4. Click **Import**.

Details of a content file

You can view the details of the content files, when a content file is selected. The details listed in Table 16 are shown in the Details area.

INFORMATION	DESCRIPTION	VALIDITY
Name	The name of the application/certification/resource/content	Application file Certification file Resource file Content file
Platform	Device platform	Application file Certification file Resource file Content file
Files	Application	Application file
File info	Additional information (for example, file size)	Application file Certification file Resource file
Related entities	Amount of terminals where selected content is installed	Application file Certification file Resource file Content file
Description	Description of the content given by the user	Application file Certification file Resource file Content file

Table 16 Details of the content files in the Configuration Management

Importing terminal feature license files

The license files for the activation of terminal features can be imported to Taqto, so that they can be automatically programmed to the terminal when the terminal is connected. If the automatic feature license key programming is turned on, the feature license key is programmed to the terminal before any other parameterization operation.

There can be multiple feature license files to be imported to Taqto and the feature license keys for one terminal can be in multiple files. In this case the feature license keys are programmed from each of these files to the terminal before any other parameters.

After the feature license key programming, Taqto automatically reads the updated feature license key status from the terminal.

The automatic feature license key programming is visible in the terminal history in the terminal management. The parameters related to the feature license keys in the terminal configuration show the status of the latest feature license key programmed to the terminal.

The automatic feature license key programming can be turned on/off from the System Management Server settings (see Chapter "Editing server parameters").

Terminal Connection Monitor

Main User Interface

The Terminal Connection Monitor displays the list of all the connection points and connected terminals and devices in the Taqto server and clients.

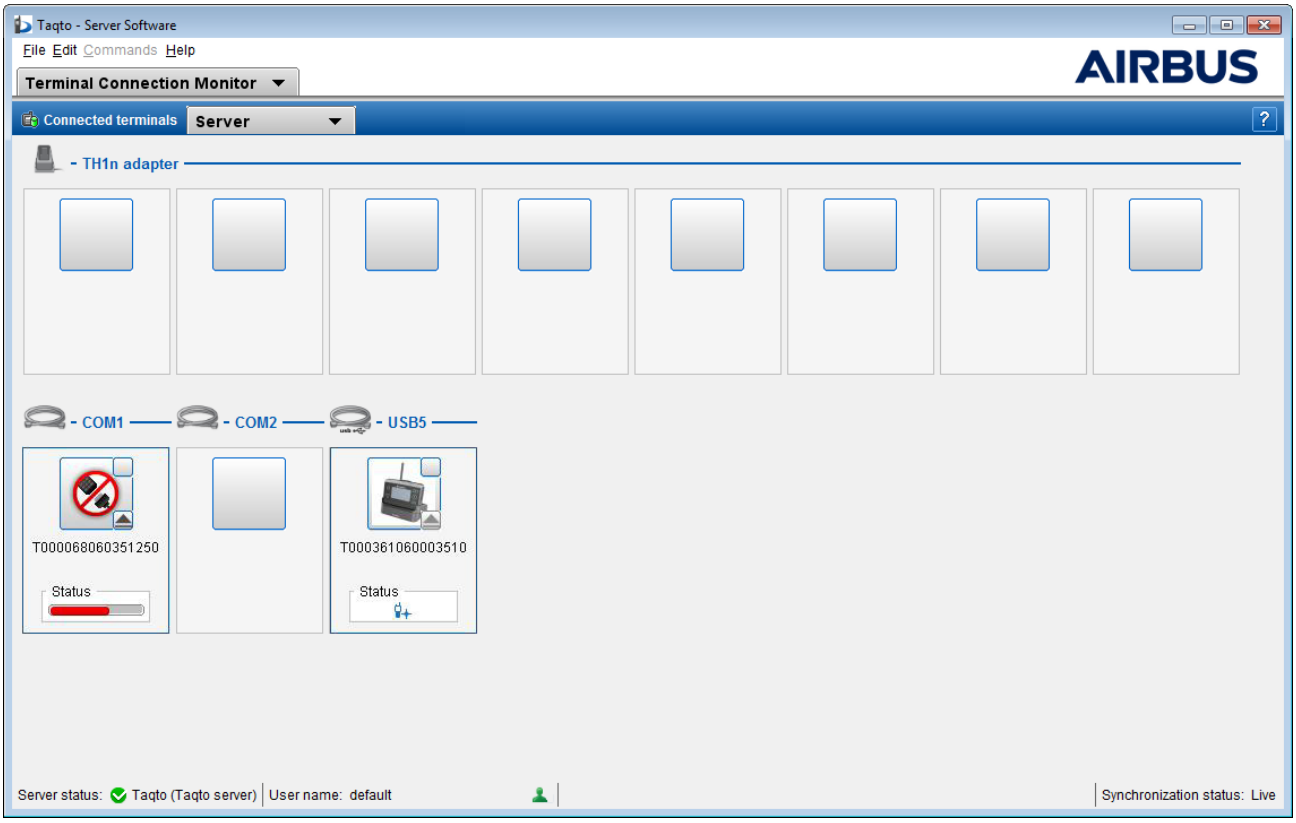


Figure 16 Main view of the Terminal Connection Monitor

The main view of the Terminal Connection Monitor is divided into two areas:

- **Connected terminals**
- **Status bar**

Connected terminals view

The **Connected terminals** view lists all the connected terminals with the information shown in Table 17.

TEXT	DESCRIPTION
Terminal	The unique ID number of the terminal
Terminals user's name	The name of the person who uses the terminal
Status	The connection status of the terminal

Table 17 Connected terminals view of the Terminal Connection Monitor

Status bar

The **Status bar** contains information on status of the Terminal Connection Monitor and on error situations.

The status bar also shows information on the user that has logged in to the Terminal Connection Monitor.

Terminal Status

The status of the terminal is indicated with the color codes of the progress bars as well as status icons shown in Table Columns in the Terminal database view in the Terminal Management application on page 67.

Force flashing of a terminal

1. To force flash a terminal, click the blank button.
   Force flash can also be initiated if there is a terminal icon in this view.

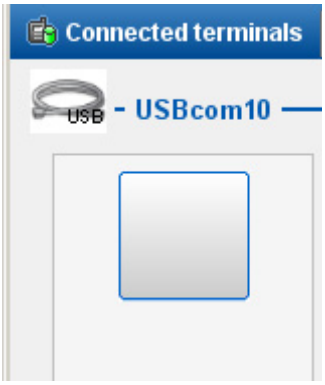


Figure 17 Blank button

2. Enter **Terminal Type**, **SW1** and **Language Package**.

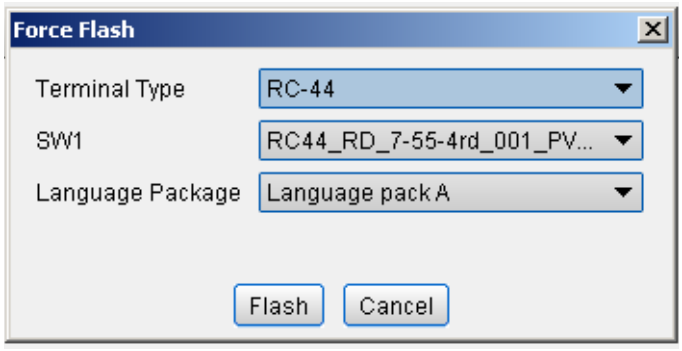


Figure 18 Force flash dialogue box

3. **Flash** button is activated. Click **Flash** to continue.
4. Click **OK** to confirm the operation.

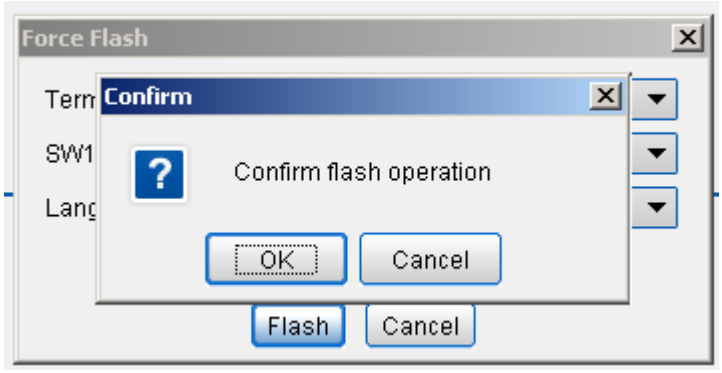


Figure 19 Confirm flash operation dialogue box

User Management

The **User Management** application is used to manage the contents of the Taqto users' database.

Select the **User Management** application from the application drop-down list. The main view of the **User Management** opens (see Figure 20).

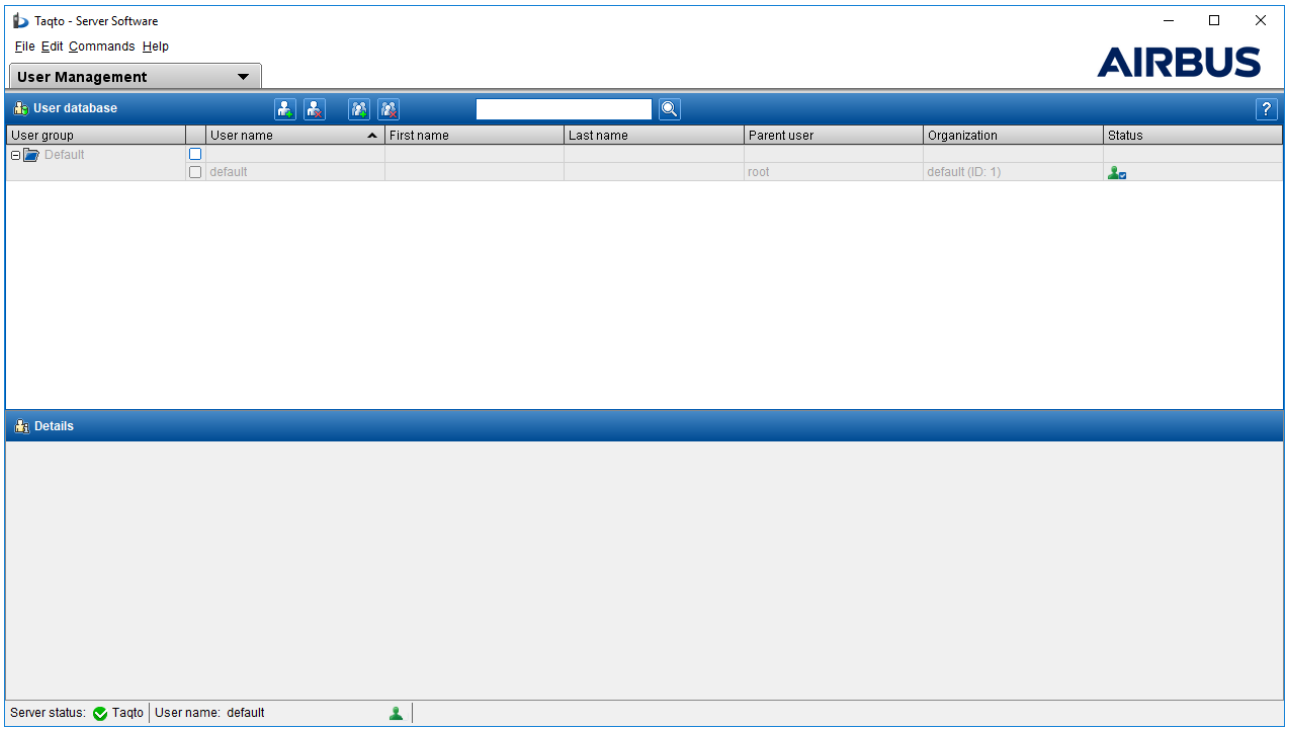


Figure 20 Main view of the User Management application

The **User Management** application lists all the user groups and users in a table. The available details of the user/ user group are shown in **User details**/**Group details** area.

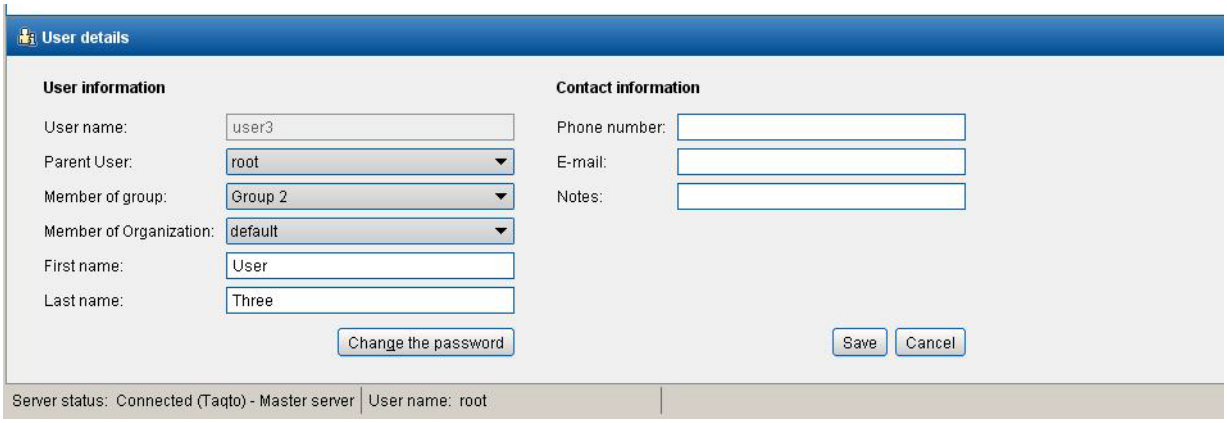


Figure 21 User Management - user belonging to an organization

Changes to user management are limited to the new user information input. A user can be set to an organization with the organization selector.

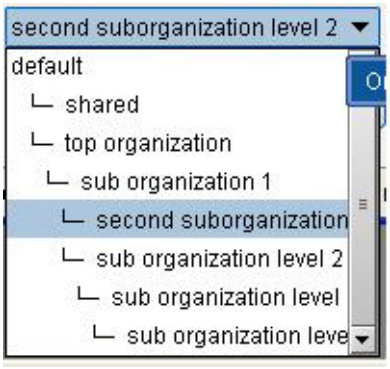


Figure 22 Organization selector

User organization info is used to limit the visibility of the terminals for the user.

Details of the user

A user can also have the following information in the database (see Figure 15):

- user name (unique)
- name of the group the user belongs to
- first name (of the user)
- last name
- phone number
- e-mail address
- possible extra notes
- parent user

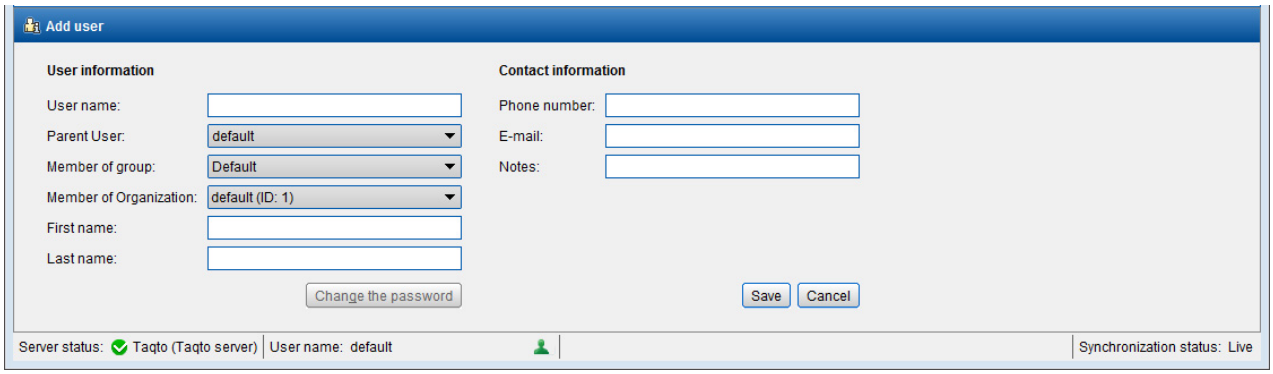


Figure 23 User details in the User Management application

Details of a user group

A user group can have its own information in the database (see Figure 24):

- group name
- group permissions for Taqto applications (Terminal Management, System Management, Configuration Management, and Log Viewer).

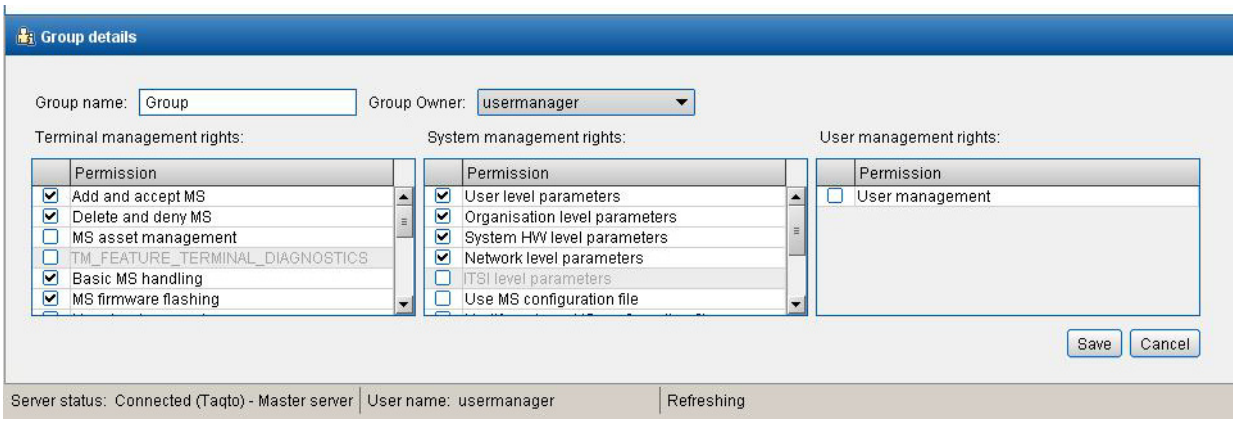


Figure 24 User group details in the User Management application

Explanations of different access rights in each application:

APPLICATION	PERMISSION	ACCESS RIGHTS
Terminal management	Add and accept MS	Rights to add and accept new devices to Taqto. Required together with "MS firmware flashing" and "Terminal ITSI level parameters" to access enrollment management.
	Delete and deny MS	Rights to delete and deny devices from Taqto.
	MS asset management	Rights to have access to terminal asset management data.
	Export terminal system log	Rights to export diagnostics data from the terminal (supported currently by P8GR only).
	Create terminal baseline	Rights to create terminal configuration baseline.
	Apply terminal baseline	Rights to apply terminal configuration baseline.
	Basic terminal handling	Rights to see terminals.
	MS firmware flashing	Rights to perform terminal SW update. Required together with "Add and Accept MS" and "Terminal ITSI level parameters" to access enrollment management.
	User level parameters	Rights to see and configure user level parameters of the terminal.
	Organization level parameters	Rights to see and configure organization level parameters of the terminal.
	Network level parameters	Rights to see and configure network level parameters of the terminal.
	System level parameters	Rights to see and configure system level parameters of the terminal.
	OPERATORONLY level parameters	Rights to see and configure OPERATORONLY level parameters of the terminal.
	ITSI level parameters	Rights to see and configure ITSI level parameters of the terminal. Required together with "Add and accept MS" and "MS firmware flashing" to access enrollment management.
	User role 1 level parameters	Rights to see and configure User role 1 level parameters of the terminal.
	User role 2 level parameters	Rights to see and configure User role 2 level parameters of the terminal.
	User role 3 level parameters	Rights to see and configure User role 3 level parameters of the terminal

	User role 4 level parameters	Rights to see and configure User role 4 level parameters of the terminal.
	User role common level parameters	Rights to see and configure User role common level parameters of the terminal.
	SCK level parameters	Rights to see and configure SCK level parameters of the terminal.
	MS-SC authentication level parameters	Rights to see and configure MS-SC authentication level parameters of the terminal.
System management	User level parameters	Rights to see and modify user level parameters for Taqto system and devices in system management application.
	Organization level parameters	Rights to see and modify organization level parameters for Taqto system and devices in system management application.
	System HW level parameters	Rights to see and modify system HW level parameters for Taqto system and devices in system management application.
	Network level parameters	Rights to see and modify network level parameters for Taqto system and devices in system management application.
	ITSI level parameters	Rights to see and modify ITSI level parameters for Server in system management application.
	MS-SC authentication level parameters	Rights to see and modify MS-SC authentication level parameters for Server in system management application.
	Use MS configuration file	Rights to load configuration files to devices.
	Modify and use MS configuration file	Rights to modify and program configuration files to devices.
	MS firmware package	Rights to import firmware packages in configuration management application.
	System log	Rights to access log viewer application.
	ITSI management	Rights to access ITSI management.
	Organization management	Rights to access organization management application.
	Terminal virtual link management	Rights to create and manage virtual links (secondary organizations) for the terminals in terminal management application.
User management	User management	Access to user management application.

Table 18 Access rights

The current user's user right status for the selected application is shown on the status bar, next to the user name.

ICON	DESCRIPTION
	User has full user rights.
	User has limited rights.

Table 19 User rights status indicated on the status bar

The buttons shown in Table 20 are available in the toolbar to add or delete users and user groups.

BUTTON	DESCRIPTION
	Used for adding a user
	Used for deleting users
	Used for adding user groups
	Used for deleting user groups

Table 20 Toolbar buttons in the main view of the User Management application

The database contents of the users and user groups are updated when you save the changes after editing, adding, or removing users or user groups.

Note: You must first create user groups because you can add users only to user groups.

Adding a new user group

To add a new user group, proceed as follows:

1. Click the **Add a group** button in the toolbar, or select **Commands** -> **Add a group**. The empty values are shown in the **User details** area.
2. Enter the details of the new user group.
3. Click **Save**.

Editing user group details

To edit user group details, proceed as follows:

1. Select the user group. The details of the selected user group are shown in the **Group details** area of main window.
2. Edit the details of the user group.
3. Click **Save**.

Deleting a user group

Note: Only empty user groups can be deleted.

To delete a user group, proceed as follows:

1. Select the user group.
2. Click the **Delete the group** button in the toolbar, or select **Commands** -> **Delete the group**.
3. Click **Ok**.

Adding a new user

To add a new user, proceed as follows:

1. Click the **Add a user** button in the toolbar, or select **Commands** -> **Add a user**. Empty values are shown in the **User details** area.
2. Enter the details of the new user.
3. Click **Save**.

4. The dialogue box for defining the password is shown. Enter the password (8-16 characters) and click **Ok**.

Note: The maximum number of users in the Taqto database is 64 including the administrator.

Note: The password must contain capital letters, small letters, numbers, and special characters: ! " # $ % & ' ( ) * + , - . / : ; < = > ? @.

Note: A new user can only see the users and user or group details to which he/she has given the rights.

Editing user details

Note: The maximum number of users in the Taqto database is 64 including the administrator.

To edit user details, proceed as follows:

1. Select the user in the **User Database**.
2. The details of the selected user are shown in the **Details** area of the main window. Edit the necessary user details. Note that you can also change the user group of the user.
3. Click **Save**.

Deleting a user

To delete a user, proceed as follows:

1. Select the user in the **User Database**.
2. Click the **Delete the user** button  in the toolbar, or select **Commands** -> **Delete the user**.
3. Click **Yes** to confirm.

Note: The default user can also be deleted.

Changing the PIN code of the administrator

The administrator can change the PIN code of the smart card.

To change the PIN code, proceed as follows:

1. Select **Commands** -> **Change the PIN code**.
2. Enter the old PIN code, and then the new PIN code twice to confirm.

Note: The new PIN code must differ form the old PIN code. It may contain max. 8 characters.

3. Click **Ok** to save the changes.

The PIN code of the smart card is required when logging in as an administrator or when backing up or restoring the database (see section Backing up/restoring the Taqto Server database on page 103).

Organization Management

The **Organization Management** application is used to manage the organization hierarchy of the Taqto's organization structure.

Select the **Organization Management** application from the application drop-down list. The main view of the **Organization Management** opens (see Figure 25).

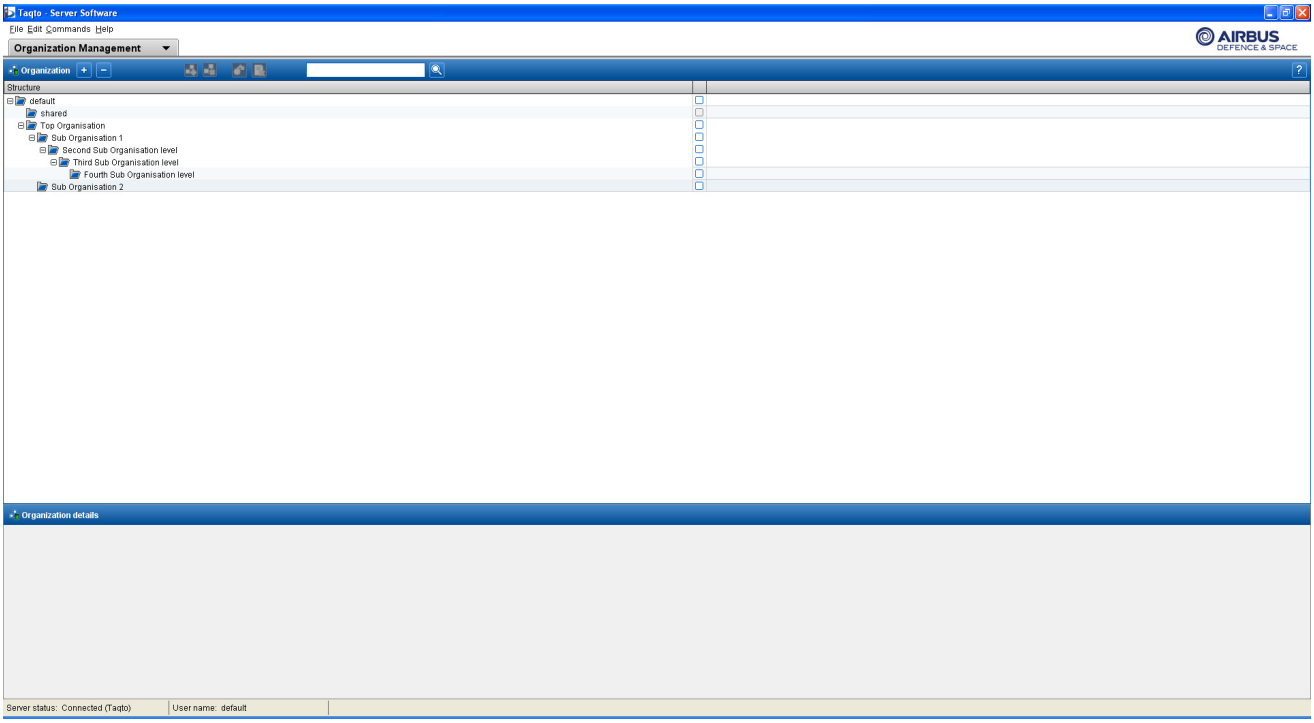


Figure 25 Main view of the Organization Management application

The **Organization Management** application lists all the organizations and the organization hierarchy in a table. The available details of the organization are shown in the **Organization details** area.

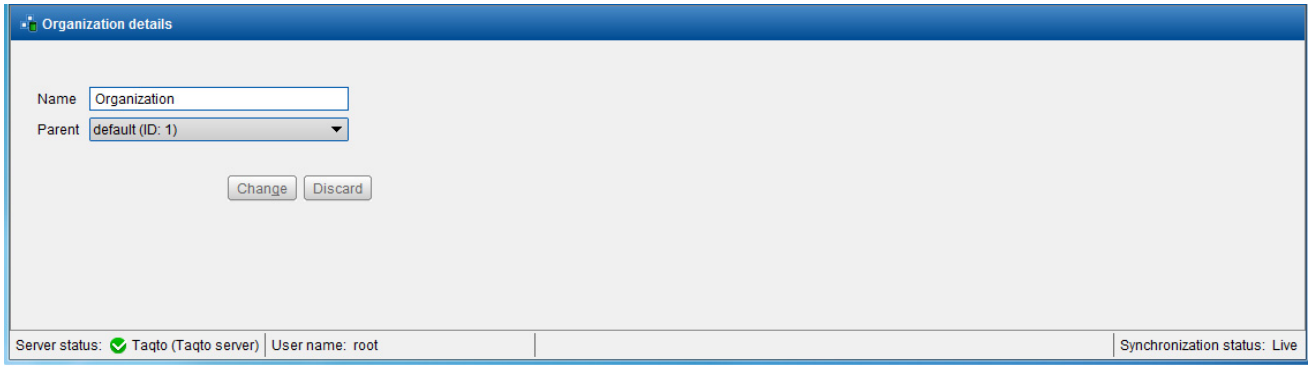


Figure 26 Organization details in the Organization Management application

Details of the Organization

An organization has the following information in the database (see Figure 26):

- name of the organization
- parent (parent organization for the organization)

The buttons shown in Table 21 are available in the toolbar to add or delete organizations.

BUTTON	DESCRIPTION
	Used for adding new organization
	Used deleting a selected organization
	Used for applying changes in organization structure
	Used for discarding changes in organization structure

Table 21 Toolbar buttons in the main view of the Organization Management application

Note that you do not need to apply an organization change after every change. You can also click the **Apply** button  after several or all of the organization changes that you want to do. The **Apply** button  saves the structure changes.

Adding an organization

1. Select the organization for which you want to create a sub-organization.
2. Click the **Add organization** button  in the toolbar.
3. Write the new name for the organization in the **Organization details** area.
4. Click the **Add** button in the **Organization details** area.

(*) Apply the organization structure by clicking the **Apply organization structure** button in the toolbar.

 **Note:** Taqto automatically generates an unique ID reference number for the new organization. This ID reference number is shown on Taqto UI.

Removing an organization

1. Select the organization that you want to delete.
2. Click the **Delete organization** button  in the toolbar.

(*) Apply the organization structure by clicking the **Apply organization structure** button in the toolbar.

Renaming an organization

1. Select the organization that you want to rename.
2. Write the new name for the organization in the **Organization details** area.
3. Click the **Change** button in the details area.

(*) Apply the organization structure by clicking the **Apply organization structure** button in the toolbar.

Moving an organization

1. Select the organization you want to move under a new parent.
2. Select the new parent organization from the organization selector of the **Organization details** area.
3. Click the **change** button in **Organization details** area.

(*) Apply the organization structure by clicking the **Apply organization structure** button in the toolbar.

Reverting changes to organization

As long as you have not clicked the **Apply organization structure** button, the organization changes have not been stored to the system. You can revert to the original structure by clicking the **Revert organization changes** button  .

Limitations of organization management

The default user cannot modify the first level organizations (top level). To modify them, they need to be created by the root first, and only the root can modify them.

The maximum amount of organizations in the organization tree is 6528. The organisation tree structure has the following limitations:

- Maximum depth is 5 levels.
- Maximum amount of organizations:
  - On the first level: 16.
  - On levels 2 to 5: there can be 32 sub-organization under one organization.
- Each level from 3 to 5 in the organization tree may contain a maximum of 2000 organizations.

Enrollment Management

The **Enrollment Management** application is used to manage the contents of the subscriber enrollments in the Taqto system. Select the **Enrollment Management** application from the application drop-down list. The main view of the **Enrollment Management** opens (see Figure 27).

The **Enrollment Management** application lists all the enrollment sets and enrollment entries in a table. The available data and details of the enrollment sets / enrollment entries are shown in **Enrollment set details**/ **Enrollment entry database view and details** area.

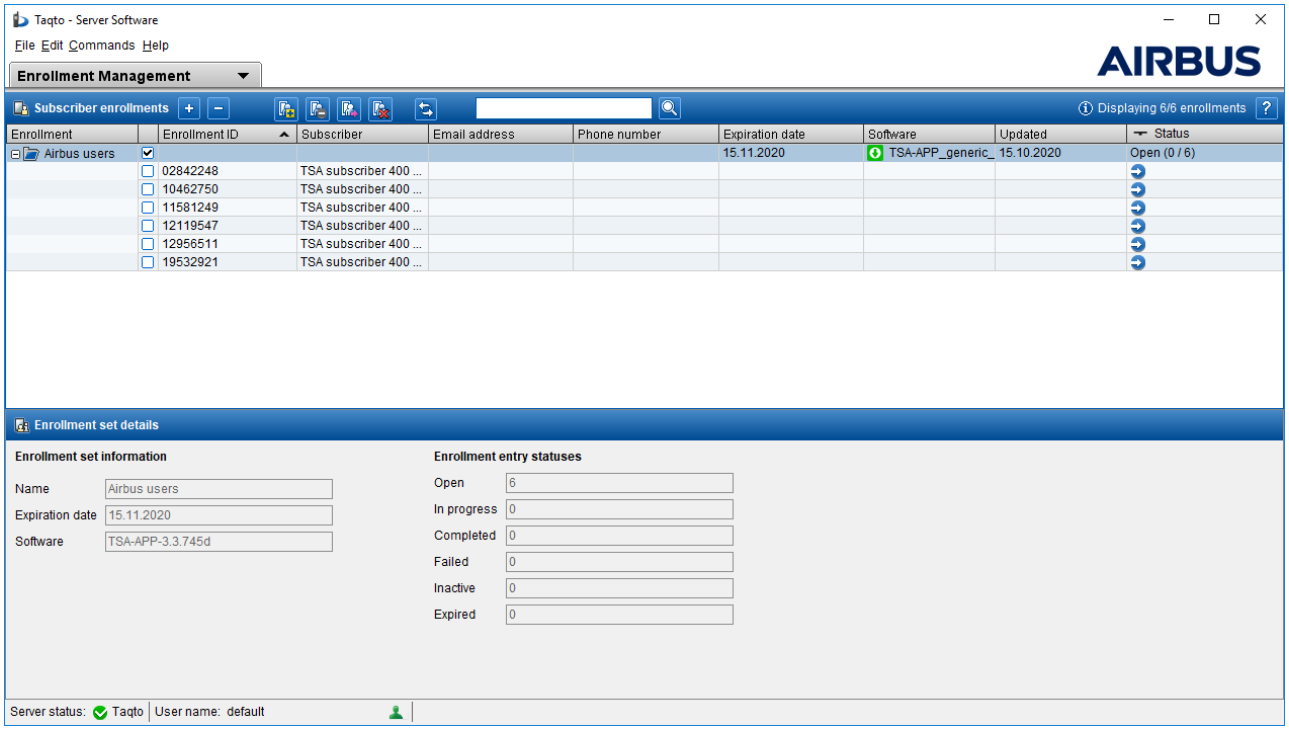


Figure 27 Main view of the Enrollment Management application

Data of the enrollment set in database view

An enrollment set can have the following information in the database (see Figure 28):

- Name
- Expiration date
- Software
- Updated
- Status

The enrollment set can have the following statuses:

STATUS	DESCRIPTION
Open	Enrollment set is open as long as there is at least one open enrollment entry in the set waiting for its registration and completion.
Closed	Enrollment set is closed when all enrollment entries have been handled. Individial enrollment entry can be successfully registrated and completed, failed, expired or deactivated.

Table 22 Enrollment set status

Details of the enrollment set in details panel

The following enrollment set information is shown on the details panel:

- Name
- Expiration date
- Software
- Enrollment ID statuses
- Amount of open/in progress/completed/failed/expired/not activate enrollments in the enrollment set.

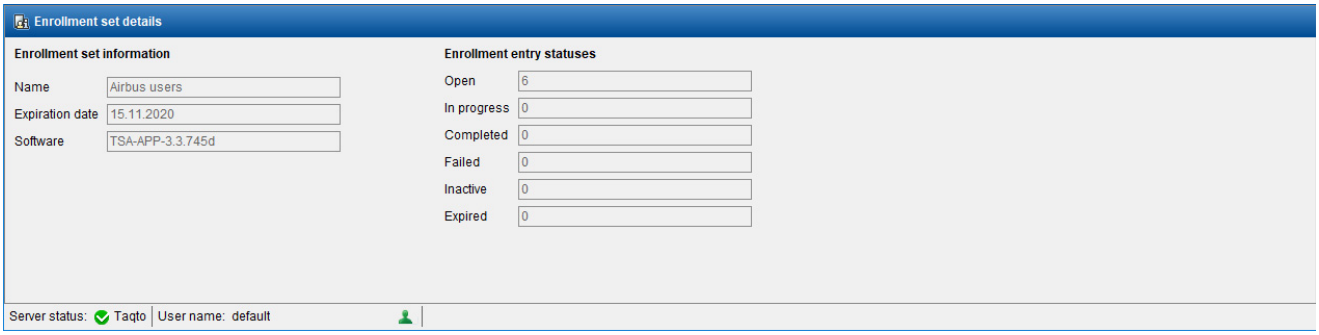


Figure 28 Enrollment set details in the Enrollment Management application

Data of an enrollment entry in database view

An enrollment entry can have its own information in the database (see Figure 29):

- Enrollment ID (unique)
- Subscriber
- Email address
- Phone number
- Updated
- Status

The enrollment entry can have the following statuses:

STATUS	DESCRIPTION
Open	Enrollment entry has not yet registered nor completed in Taqto.
In progress	Enrollment entry registration and completion is in progress. This status is also used when enrollment completion has first failed but the related terminal programming task is still active and can be retried.
Completed	Enrollment entry has been registered and completed successfully in Taqto.
Failed	Enrollment entry registration and completion has failed and cannot be used anymore.

Expired	Expiration date of enrollment entry has passed and enrollment entry cannot be registered nor completed anymore.
Not active	Enrollment entry has been deactivated. It is not possible to register or complete it anymore.

Table 23 Enrollment entry status

Details of an enrollment entry in details panel

The following enrollment entry information is shown on details panel:

- Enrollment ID (unique)
- Associated device
- Subscriber
- Email address
- Phone number
- Post address
- MCC
- MNC
- SSI

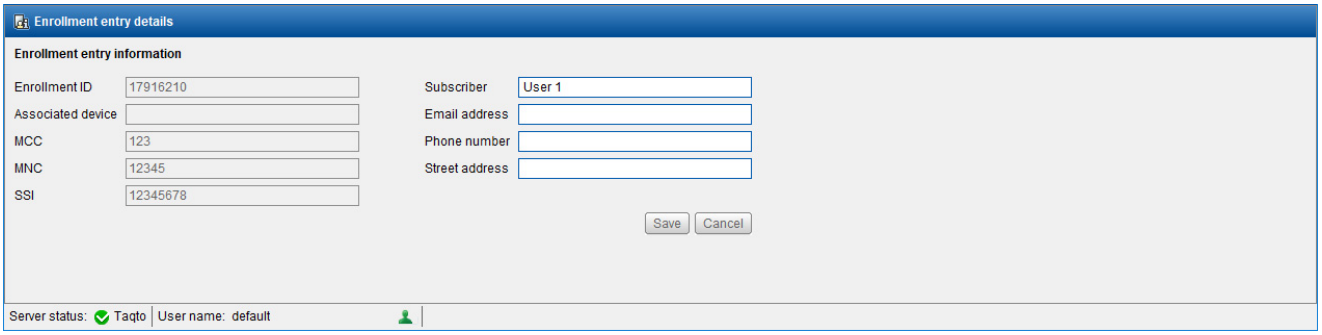


Figure 29 Enrollment entry details in the Enrollment Management application

The buttons shown in Table 24 are available in the toolbar to create and export enrollment sets, and to add new enrollment entries.

BUTTON	DESCRIPTION
	Used for expanding all nodes in the view.
	Used for collapsing all nodes in the view.
	Used for creating an enrollment set.
	Used for deactivating an enrollment set or enrollment entry
	Used for exporting enrollment set data to an Excel file (.csv).
	Used for deleting enrollment set or enrollment entry.
	Used for refreshing information shown on the Enrollment Management application.

Table 24 Toolbar buttons in the main view of the Enrollment Management application

Creating a new enrollment set

To create a new enrollment set, proceed as follows:

1. Click the **Create** button  in the toolbar, or select **Commands** -> **Create**. The new dialog is opened for creating new enrollment set. See Figure 30.

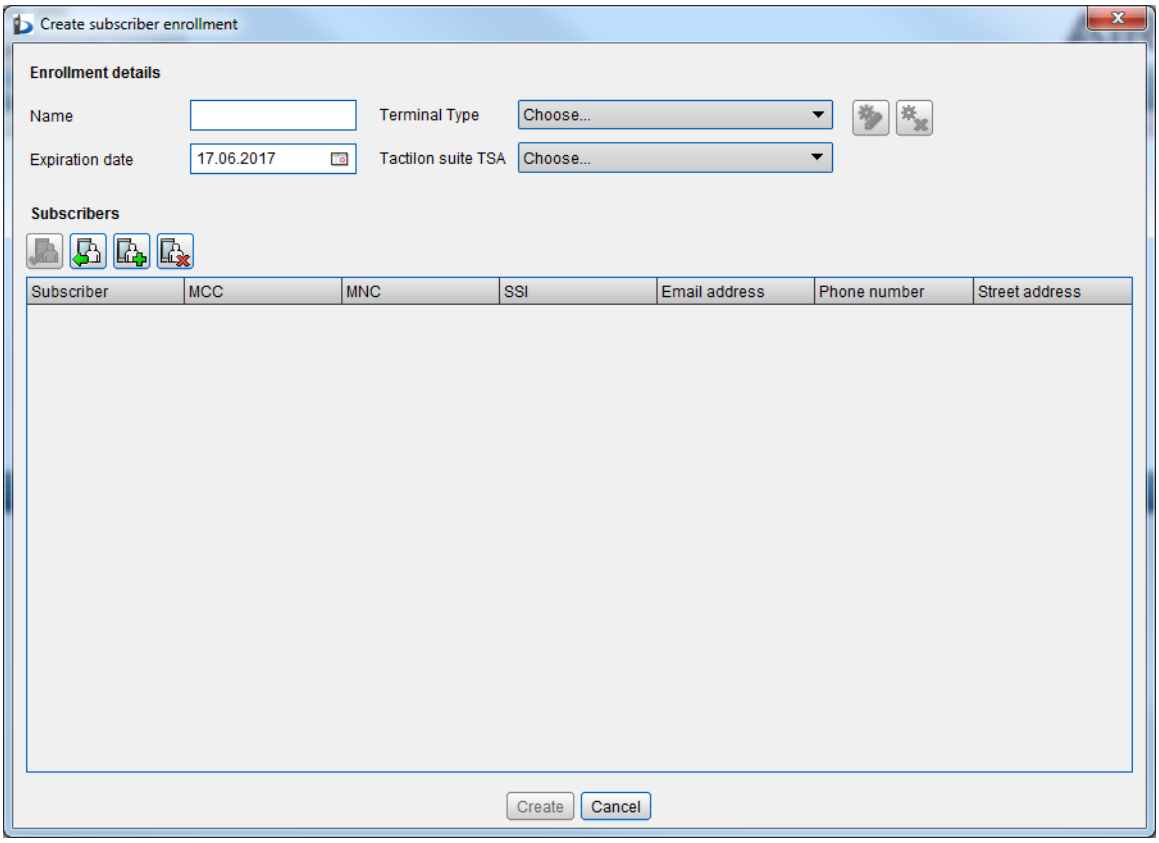


Figure 30 Create subscriber enrollment

2. Enter **name** and **expiration date** for the new enrollment set in the dialog.
3. Select **Terminal Type** and **Software** for the new enrollment set in the dialog.
4. Click the **Edit** button  to create the needed configuration for the software settings.
   If you need to return the settings to their default values, click the **Reset** button  .
5. Click **Import** button  in the dialog to add new subscribers to the enrollment set.
   Select a .csv file in the new **File open** dialog and click **Open**. The subscriber information is shown in the table on the dialog.

 **Note:** If you want to manually add a new subscriber to the enrollment set, click the **Insert** button  in the dialog.

 **Note:** Click the table's fields to edit the subscriber information in the table.

 **Note:** If you want to delete the selected subscriber rows from the enrollment set, select the rows by using the **Ctrl+Shift** selection and click the **Remove Selected** button  .

6. Click the Validate button  to validate the enrollment set data.
   A separate warning dialog lists individual enrollments with erroneous data.
7. Click **Create** on the dialog.
   After clicking **Create**, a separate **Subscriber enrollment summary** dialog is shown. Click the **Export** button  to open the **Export enrollment** dialog and to export the created subscriber enrollment set to Excel (`.xlsx`).

Exporting an enrollment set

To export an enrollment set, proceed as follows:

1. Select the enrollment set.
2. Click the **Export**  button in the toolbar, or select **Commands** -> **Export**.
3. Click the **Export** button in the **Export enrollment set** dialog.
4. Click **Ok**.

Deactivating an enrollment set or an enrollment entry

To deactivate an enrollment set or enrollment entry, proceed as follows:

1. Select the enrollment set or enrollment entry.
2. Select **Commands** -> **Deactivate**.
3. **Confirm** deactivation.
   Deactivated enrollment sets and enrollment entries are set to 'not active' status and cannot be registered or completed anymore.

Filtering enrollment entries based on status

To filter enrollment entries based on their status:

1. Click the filter icon in the header of the Status column. The dialogue box for setting the filters opens..

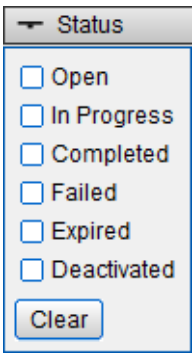


Figure 31 Enrollment filter

2. Select the status filters in the dialog box.
3. Apply the selected filters by clicking outside the dialog box. Only enrollment entries matching the filters are displayed in the enrollment management view.

To clear the applied filters, click the filter icon in the header of the Status column. Then click the **Clear** button in the dialogue box.

Terminal Management

The **Terminal Management** application is used to manage the contents of the terminal database (see Figure 32).

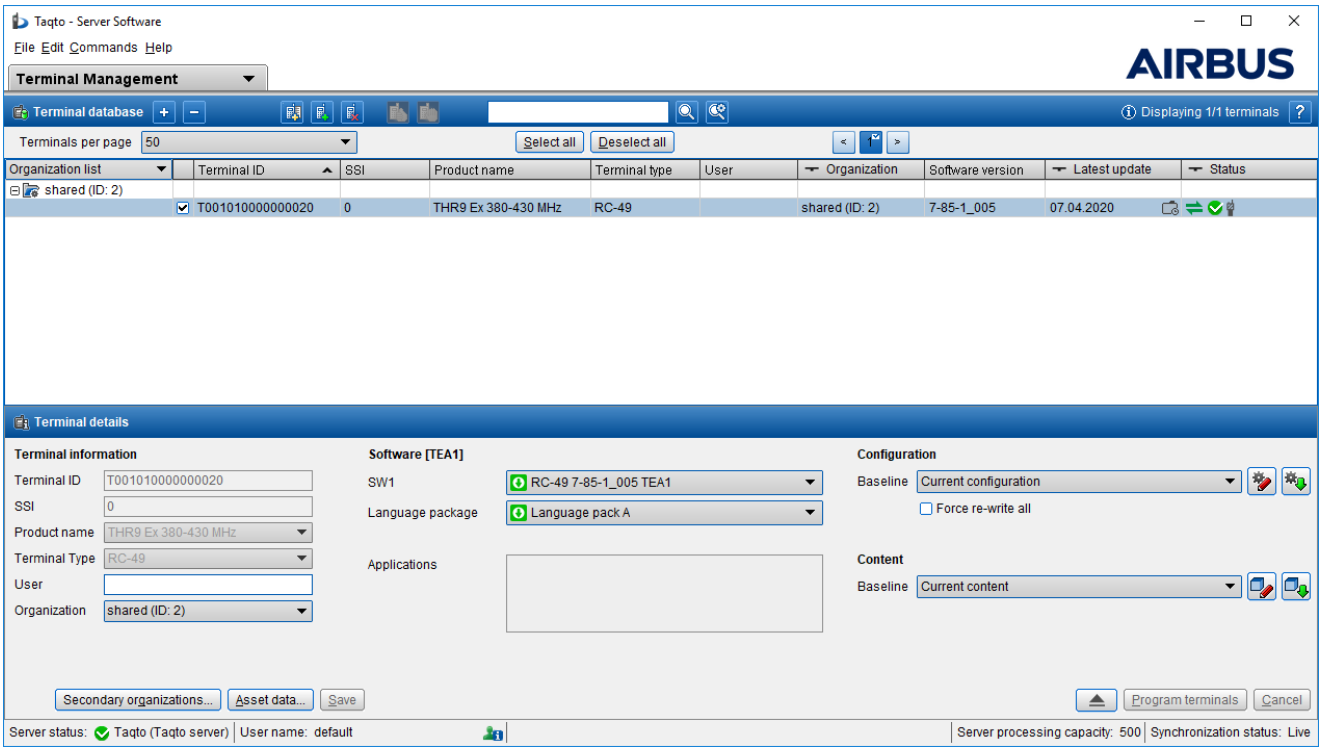


Figure 32 Main view of the Terminal Management application

The **Terminal Management** application lists as a table all the terminals added to the Taqto system. The first column in the table is used to group the information with the following grouping options available: Organization list, Product name, User, Software version, Status, Latest update, Organization tree and IMEI.

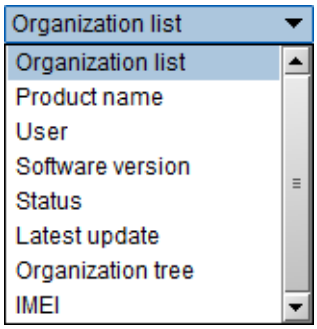


Figure 33 Terminal Management filter

All terminals belong to one organization branch defined in **Organization management.** Each Taqto user also belongs to the same organization hierarchy. Users can only view and operate on terminals that belong to the same organization branch.

The table in the **Terminal database** view contains the columns listed in Table 25.

COLUMNS	DESCRIPTION
Organization	The name of the organization of the user/terminal in the Taqto Server Software
Terminal ID	The unique ID number of the terminal (TEI in TETRA)
SSI	Subscriber identity
IMEI	Terminal IMEI (for those terminals which uses IMEI)
Product Name	The name/model of the terminal, for example THR880i, THR9
Terminal Type	Type of the terminal, for example, RC-2, RC-20
User	The user name of the terminal defined in the Taqto Server Software
Organization	The organization of the user
Software Version	The software version of the terminal
Latest update	The latest update of the terminal

COLUMNS	DESCRIPTION
Status for a new terminal Status for an existing terminal	• New  The terminal is new but not approved yet. • Rejected  The terminal is rejected. • Not connected  The terminal is not connected to the Taqto Server Software. • Connected  The terminal is connected to the Taqto Server Software. • Connected but not synchronized  The terminal is connected to the Taqto Server Software, but it latest configuration has not been read to Taqto database. • Unsupported terminal  Terminal has unsupported SW version (the terminal model is known, but the existing SW does not have suitable firmware package in Taqto). • Ejected  The terminal is ejected from the Taqto system. • Error  Possible errors in terminal parameterisation or in last terminal operation. Click the icon to get more details on the error. • Warning  Possible warnings in last terminal operation. Click the icon to get more details on the warning. Note! If an interrupted programming session is discovered, it can be canceled by selecting **Terminal Management** -> **Commands** -> **End terminal interrupted session...**. • Last operation ok  The last operation for the terminal was successful • Terminal configuration or content unknown  The terminal configuration and/or content is unknown or only partly known. • Task  or Task retry  The server is waiting terminal to connect Taqto in order to start the programming. • Task with notification  Task notification has been delivered to terminal user on pending task on the Server. • Task active  There is a TASK in progress for the device and the device is offline. For example the network connection between the client and server is broken.
Mode of the existing terminal	• In normal mode  The radio is in normal mode and in service. • In normal mode but not in service  The radio is in normal mode but not in service. • In local mode  The radio is in local mode.

COLUMNS	DESCRIPTION
	• +Progress bar Shows the progress of the terminal update: • Green The server is processing the operation result. The terminal can be ejected and taken into use. **Note**: Before removing the terminal, make sure that the status LED of the adapter is green. • Yellow There is an update task available for this terminal, but the download to the terminal has not been started. If you disconnect the terminal from the Taqto Client Software, this update task will not be downloaded to the terminal, and the old configuration remains in the terminal. If you do not disconnect the terminal from the Taqto Client Software, the update tasks will be downloaded to the terminal when the time slot is available. • Red There is an update task or a connection ongoing in this terminal. If the update task has been completed successfully, the color code turns into green (or into state Connected) to indicate that the terminal can be ejected and taken into use. • Blue The terminal is ejecting.
Programming history	Shows the programming history of the terminal in a table with columns: • Operation Status: XXX Indicates the result of the last terminal management operation (success/fail) • Operation type: Indicates if the last operation performed to the terminal was an online operation or performed programming TASK • Comment: A comment concerning the programming operation written by the user. • Time: The date and the time when the terminal has been programmed • User: The user that has performed the programming activity

Table 25 Columns in the Terminal database view in the Terminal Management application

The buttons shown in Table 26 are available for adding and deleting terminals.

BUTTON	DESCRIPTION
	Used for adding a new terminal
	Used for deleting the selected terminal
	Used for approving a new terminal
	Used for rejecting a terminal
	Used for adding multiple terminals
	Used for finding the string entered to the text field next to this button
	Used for searching terminals having specific parameter values.

Table 26 Toolbar buttons in the main view of the Terminal management application

Adding a new terminal

When you insert a new terminal into the adapter connected to the Taqto Server Software, the system automatically recognizes it after a while. The terminal is shown in the list of the terminals with the status **New**.

Optionally you can add a new terminal manually. To add it, proceed as follows:

1. Click the **Add a terminal**  button, or select **Commands** -> **Add a terminal**.

2. The details of the new terminal are shown in the **Terminal details** area of the main window.
3. Edit details of the new terminal. They are shown in the **Details** area of the main window. Depending on the terminal type, you can find the ID number of the terminal (15 numbers) in the sticker fixed to the terminal's battery base or from the terminal menu. In Tactilon Dabat this information can be found by selecting **Settings** -> **About phone** -> **Status**. In other terminal types the information can be found by typing *#06# when the terminal is in the idle mode. When adding a new terminal manually, you only need the terminal ID definition. The other terminal details are read from the terminal when it is successfully connected to the Taqto Software.
4. Click **Save**.

Note: Be careful to avoid errors when adding terminals manually. Terminal ID must start with letter 'T', TSIM ID must start with letter 'S' and Tactilon Agnet App ID must start with letter 'A'.

Note: The Taqto Server Software can recognize the terminal only if the software version of the terminal also exists in the list of the firmware files.To see the software version of the terminal, enter *#0000# when the terminal is in IDLE mode.

Note: The **Asset data** dialogue box of the terminal is not usable when creating a new terminal. Asset data can be entered after creating the terminal.

Approving a new terminal

When a new terminal is connected to the Taqto Server Software, it is added as a new terminal. However, you must approve it before you can read its parameters.

To approve the terminal, proceed as follows:

1. Select the terminal. The details of the selected terminal are shown in the **Terminal details** area of the main window. Some of the details may be empty.
2. Edit details, if needed.
3. Click the **Approve the terminal** button , or select **Commands** -> **Approve the terminal** to save the new terminal.
4. Click **Confirm** in the next dialogue box.
5. The status of the terminal starts to update from **New** to **Connected**.

Note: You do not need to approve the terminal if it is added manually.

Note: When a new TSIM card is provisioned in the Taqto system, it must be initialized by selecting **Full Reset** as the new baseline for the TSIM card.

Reprovisioning a terminal in Taqto

Reprovisioning a terminal resets the terminal configuration in the Taqto database and returns the terminal to *Approved* status, for example when the terminal has become inoperative in Taqto. Reprovisioning a terminal also enables you to change Taqto to use other matching firmware for the terminal if such a firmware is available.

To reprovision the terminal, proceed as follows:

1. Select the terminal.
2. Select **Commands -> Reprovision terminal**.

   A new dialogue box opens for terminal reprovisioning (see Figure 34).
3. If you want to change the terminal to match to other available firmware, tick the **Change firmware** checkbox. Define the new firmware files in the corresponding fields. Only those firmware files are visible in the fields that match to the selected terminal.

4. Click the **Reprovision** button.

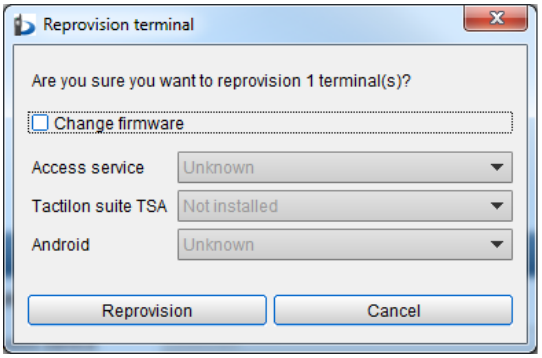


Figure 34 Terminal reprovisioning

Placing a terminal to an organization when approving a new terminal

1. Select the terminal to be approved.
2. Select the organization for the approved terminal and click the **Approve the terminal** button. . The terminal is moved to the selected organization.

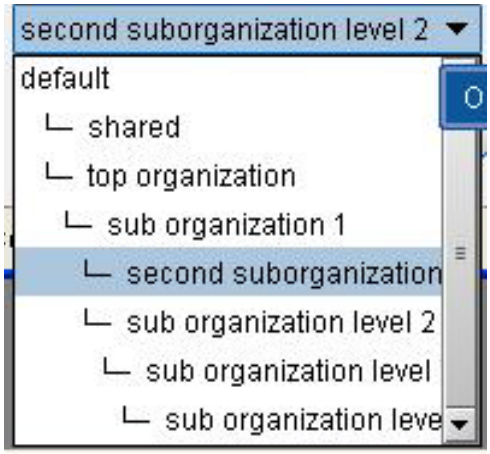


Figure 35 Select the organization for the approved terminal

Adding secondary organization links to a terminal

A virtual organization can be created for the terminals belonging to different organizations for a need or a situation (typically temporary). This allows simultaneous programming of the terminals in a virtual organization. The terminals in a virtual organization have limited cases for programming. The restrictions are defined by the user role of the secondary organization link.

Note: Only three virtual links can be created simultaneously to a terminal.

Creating a virtual link

1. Click the **Secondary organizations...** button to open the dialogue box for creating secondary organizations.
2. Add a new secondary organization using the dialogue box. The added organizations are shown in the list on the right of the dialogue box.

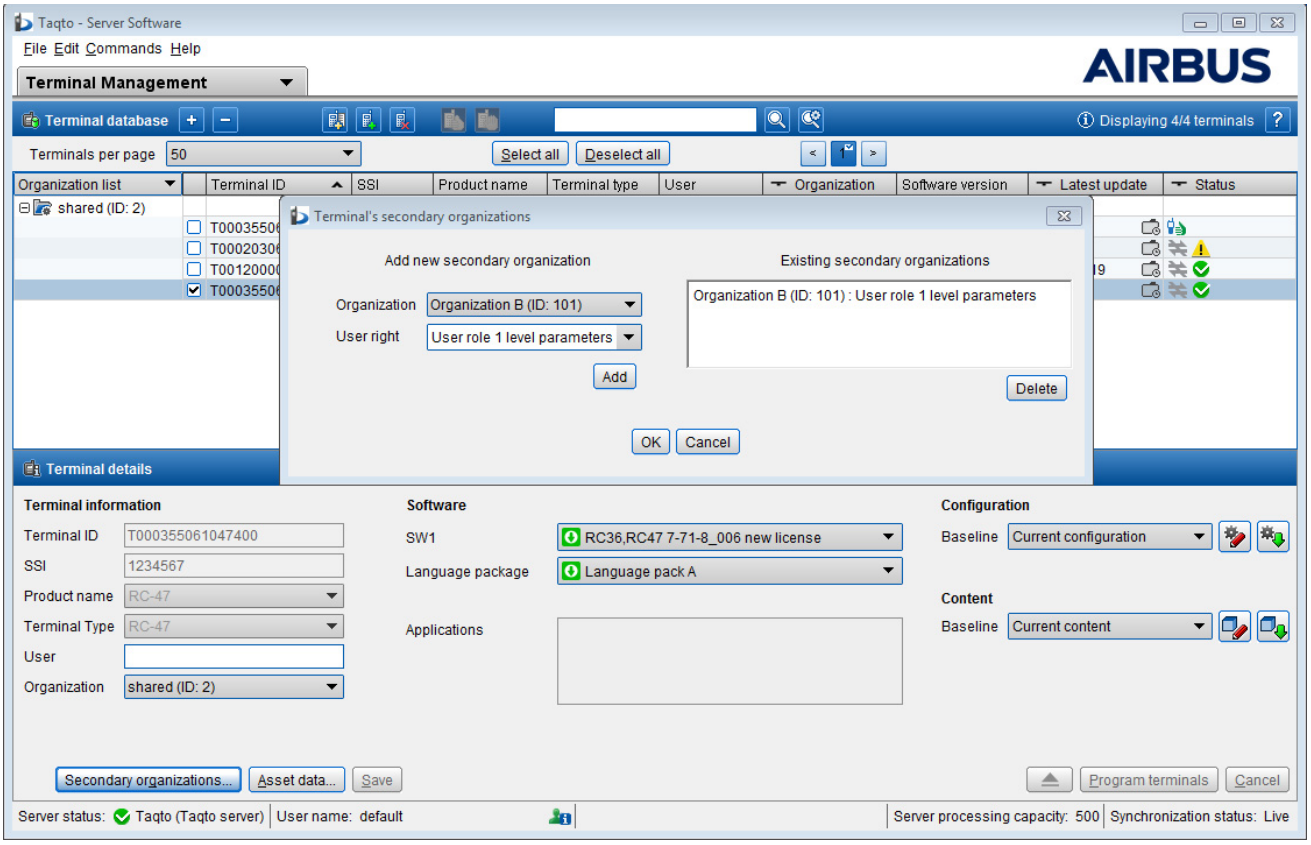


Figure 36 Secondary organizations dialogue box

3. Select **Commands** -> **Manage secondary organizations**. In the **Virtual links from organization** dialogue box you can select the organization. In the list below, the secondary organization links in the organization are shown in the following order from left to right:
   - organization of the terminal: name of the terminal: secondary organization: user role

In the list are shown all the links of all the terminals in the organization selected and in its suborganizations.

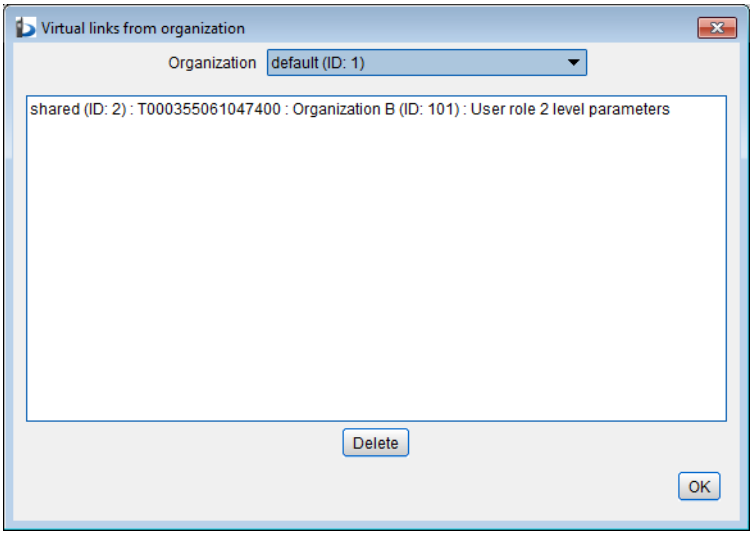


Figure 37 Virtual links from organization dialogue box

A virtually linked terminal is shown in the **Virtual** folder in the **Terminal Management**. The original organization of the terminal is not shown, and its information cannot be changed. Only the configuration of the terminal can be changed. See Figure 38.

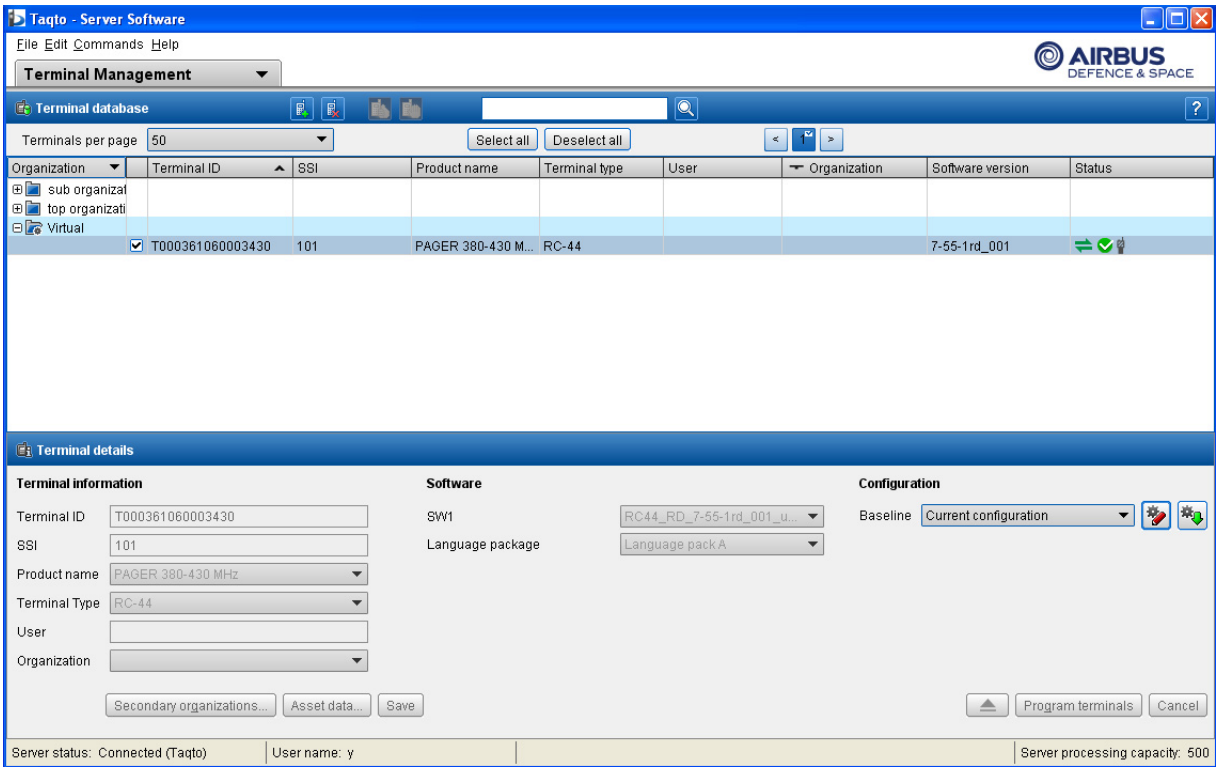


Figure 38 Virtually linked terminal in the Terminal Management

Figure 39 shows an example of the parameters in a virtually linked terminal. In the example Secondary organization link has been created using User role 1. When selecting **Group addressed filtering**, you can see a list of addresses but you cannot change them. In addition, you can see a User Role parameter depending on your user role. You can add addresses to this parameter.

If you do not have the user role defined in the secondary organization link, you cannot find any parameters in the configuration.

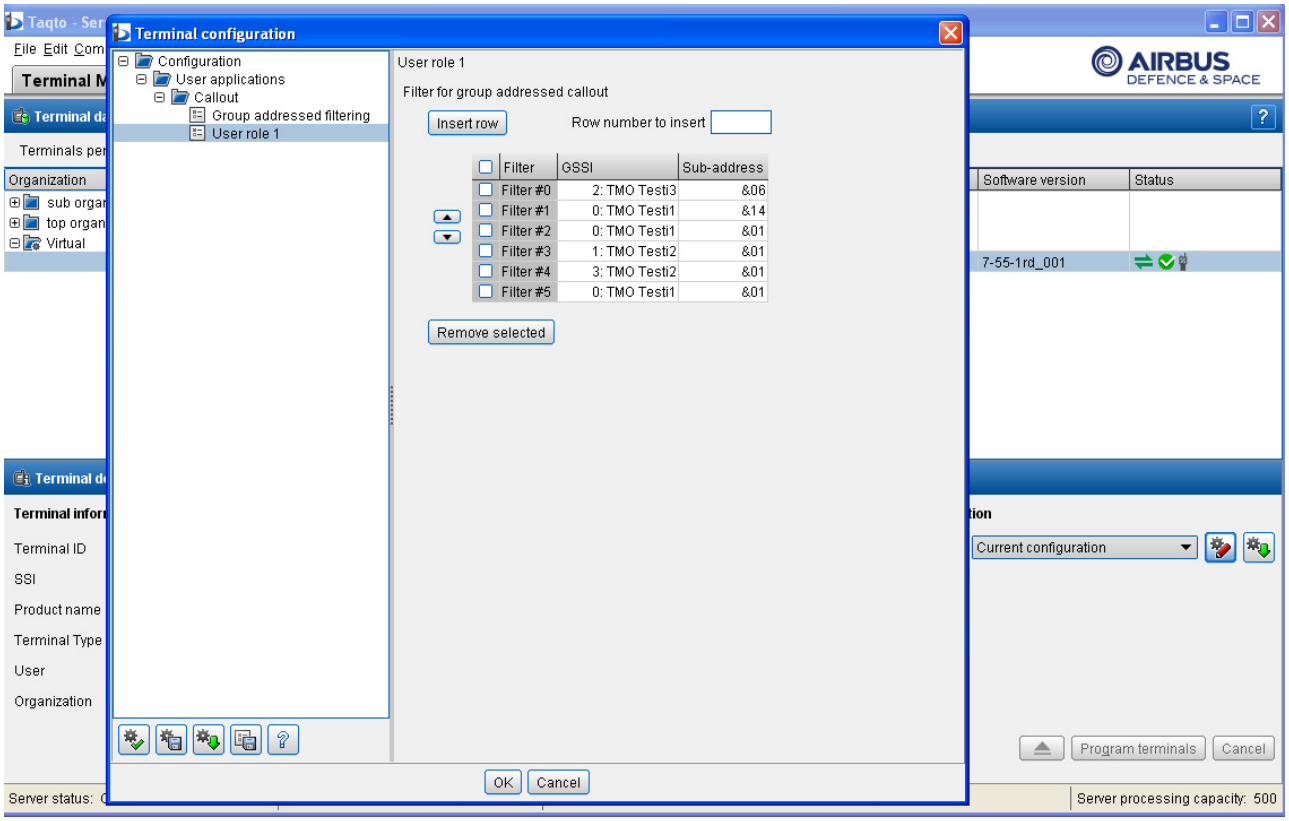


Figure 39 Virtually linked terminal configuration

Rejecting a new terminal

A new terminal (connected to the adapter/cable or not) can also be rejected from the database.

To reject the terminal, proceed as follows:

1. Select the terminal. The details of the selected terminal are shown in the **Terminal details** area of the main window.
2. Click the **Reject the terminal** button in the toolbar, or select **Commands** -> **Reject the terminal**.
3. Click **Yes** to confirm.

Deleting a terminal

To delete a terminal, proceed as follows:

1. Select the terminal. The details of the selected terminal are shown in the **Terminal details** area of the main window.
2. Click the **Delete a terminal** button in the toolbar, or select **Commands** -> **Delete a terminal**.
3. Click **Yes** to confirm.

Note: It is not recommended to delete a terminal during its programming (i.e. when the Taqto User Interface indicates with a progress bar that programming is still ongoing).

Adding multiple terminals

To add multiple terminals, proceed as follows:

1. Click **Add multiple terminals** button in the toolbar. **Open file** dialogue box opens.

2. Select a file from where you want to add the terminals.
3. Click **Open**.

Devices with correct input are imported to the Taqto database. Summary of the operation's succeeded/total is shown.

Searching for terminals

To search terminals with certain configuration values, proceed as follows:

1. Click **Open search dialogue** button  in the toolbar. **Search** dialogue box opens.

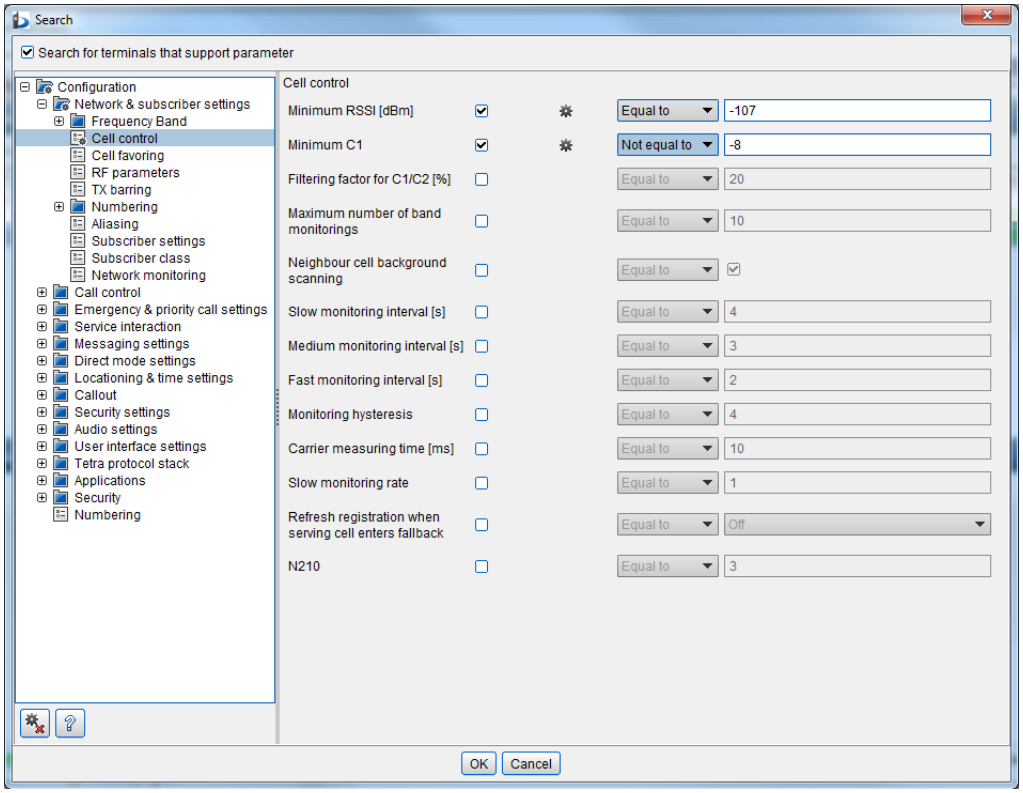


Figure 40 Search dialogue box

2. Select parameters from the parameter tree based on for which parameter you want to make the search.
3. Define search criteria for the parameter (value equals / not equals to certain value).
4. Click **Ok**.
5. Terminals matching search criteria are shown on terminal database view.

If you want to revert to full terminal list in terminal database view, click **Clear search results** button  .

When you open the **Search** dialogue again, the previous search criteria is still valid. Click **Reset search criteria** button  to reset search criteria and to define new search criteria.

Creating terminal report

The terminal report file contains basic information (terminal ID, SSI, product name, terminal type, user, organization, software version and latest update time) on each terminal that was visible on the terminal database view.

To create terminal report, proceed as follows:

1. Select **Commands** -> **Create terminal report** from the menu. **Save file** dialogue box opens.
2. Define a file to which you want to create the terminal report.
3. Click **Save**.

The terminal report file (.xlsx) is now created in Excel format.

Filtering a terminal based on terminal status

You can filter terminals based on their status and whether they have any errors or pending tasks.

1. Click the filter icon the header of the **Status** column. The dialogue box for setting **filters** opens.

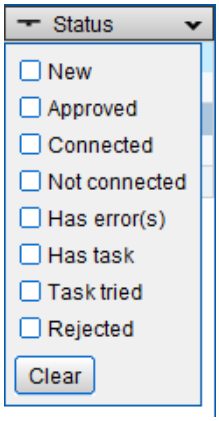


Figure 41 Dialogue for setting filters

2. Select the status filters in the dialog box.
3. Apply the selected filters by clicking outside the dialog box. Only terminals matching the filters are displayed in the terminal view.

To clear the applied filters, click the filter icon in the header of the **Status** column. Then click the **Clear** button in the dialogue box.

Filtering a terminal based on latest update information

You can filter terminals based on the time of the latest update. Only terminals with the latest update can be visible.

1. Click the filter icon in the header of the **Latest update** column. The dialogue box for setting **Start date** and **End date** opens.

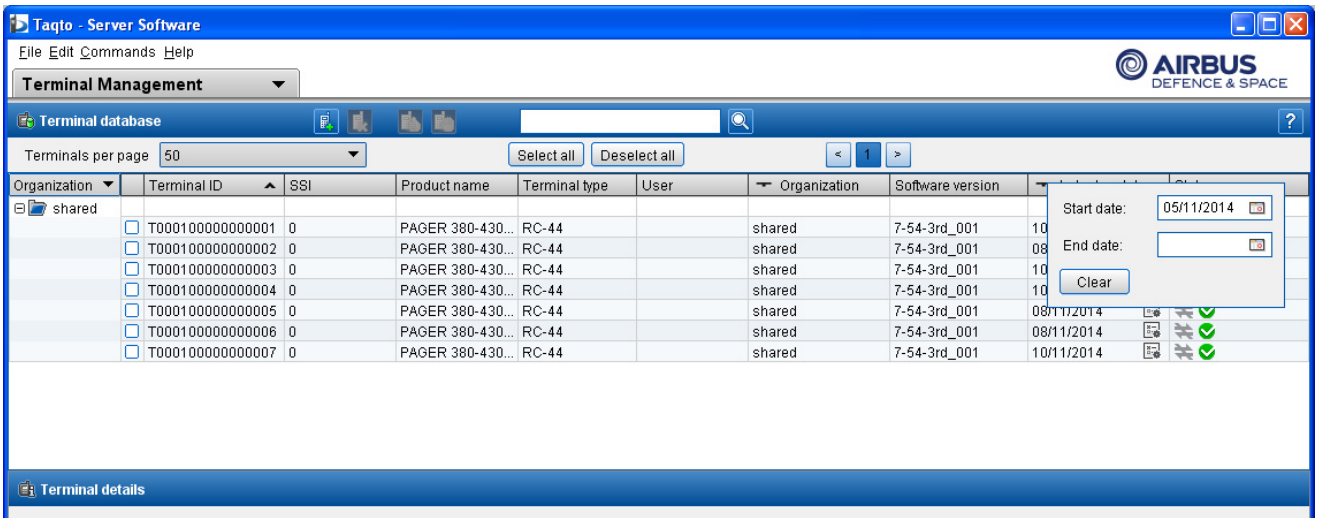


Figure 42 Filtering a terminal according the updates, Start date - End date dialogue box

2. Select the start and the end date.

When you click the icon  on the right of the **Start update** or **End update** option, **Date chooser** dialogue box opens.

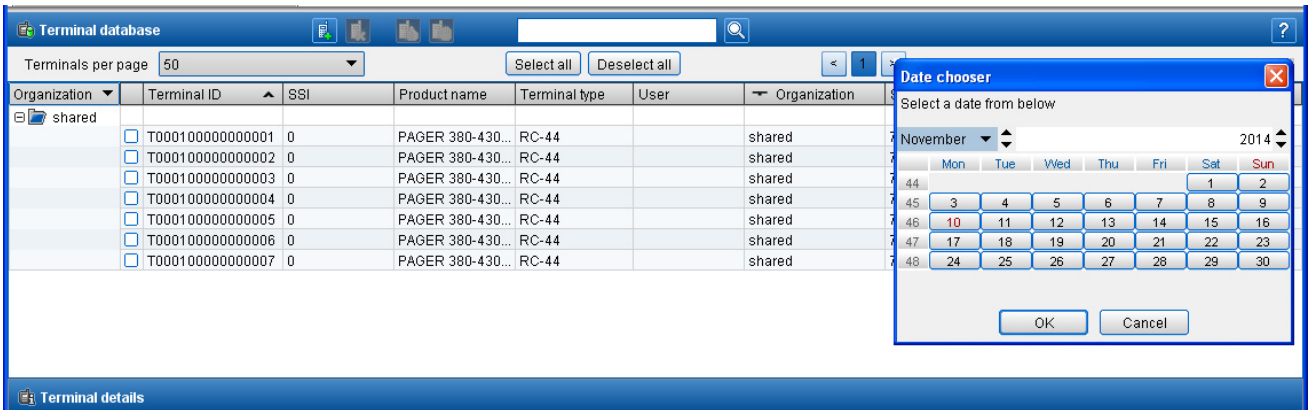


Figure 43 Filtering a terminal according the updates, Date chooser dialogue box

3. Click the icon in the **Latest update** column for the wanted terminal. The **Terminal Information** dialogue box opens.

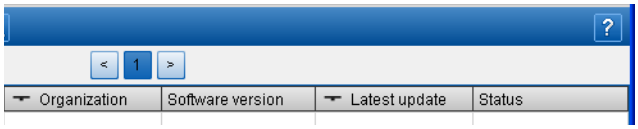


Figure 44 Latest update selection

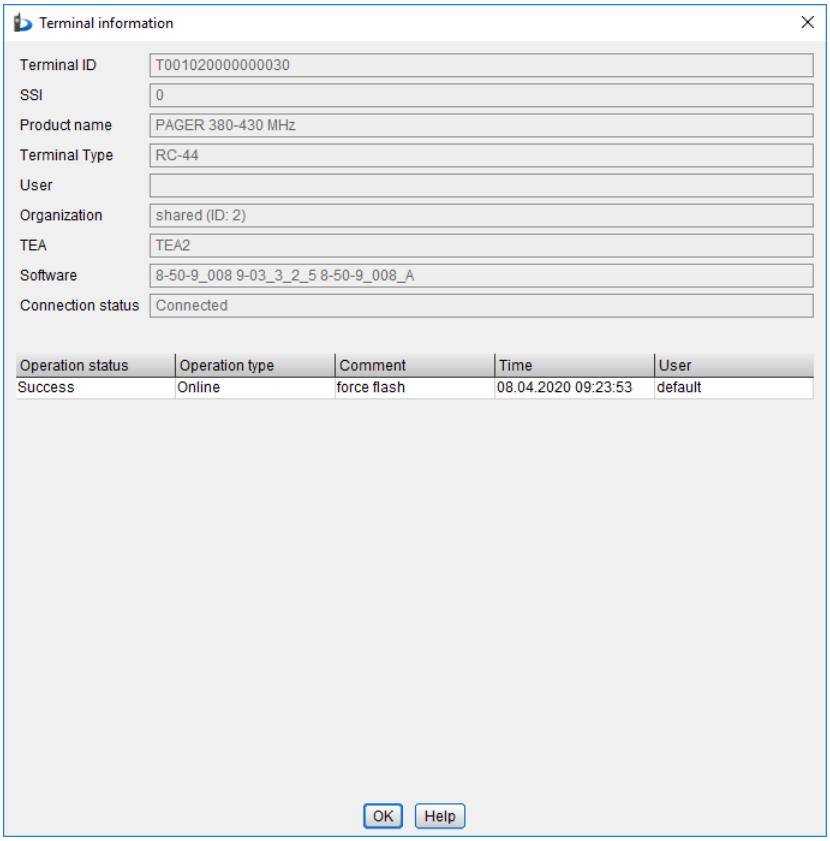


Figure 45 Terminal information dialogue box

Terminal details, parameters and content

The details of the selected terminal are shown in the **Terminal details** area of the main window.

If several terminals of the same model have been selected, the details of the selected terminals (software and configuration) are shown in the **Terminal details** area of the main window, if they have the same software version.

If the model or the software of the terminals selected at the same time is not the same, only asset data and organization information are shown in **Details**.

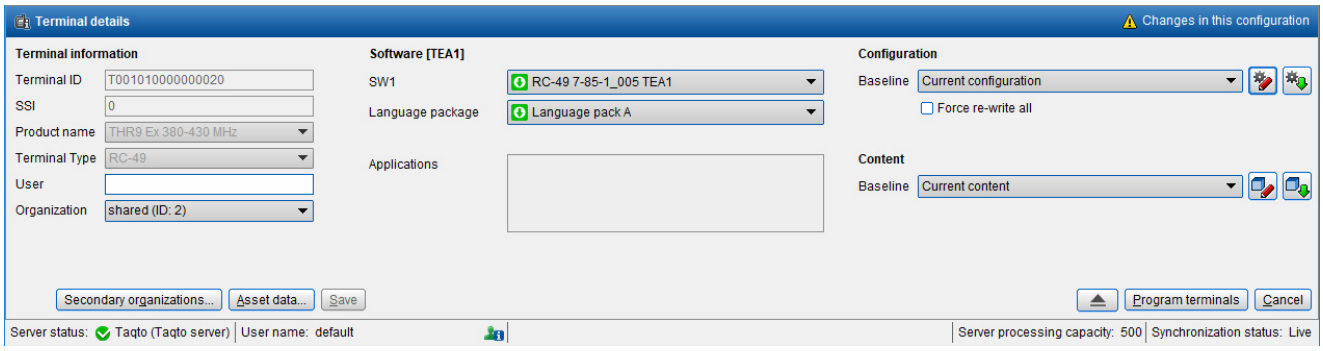


Figure 46 Details of the selected terminal in Terminal Management application

Terminal details shows the following information:

- terminal ID
- terminal IMEI (for those terminals which use IMEI)
- subscriber identity (SSI)
- product name
- terminal model
- user name
- name of the organization

A more detailed description of each piece of information can be found in Table Columns in the Terminal database view in the Terminal Management application on page 67.

In the **Software**, you can see the terminal TEA and current software (if they are available). You can define the used software versions for all available software elements and devices. The software list shows this information based on all firmware files imported to the Configuration Management application. For TETRA terminals, the language package list shows all language packages found in those files. For the Tactilon Agnet App, the Software list shows the version of Tactilon Agnet App, its access service and information on the used Android platform.

Note: Deleted firmware files are greyed out in the Software lists. This means that the corresponding firmware files cannot be programmed to the terminals, but terminals with this firmware can still be managed by Taqto and programmed to use any other available firmware. If the TEA information is available, firmware with matching TEA are shown in the list.

Note: It is possible that some Tactilon Dabat software versions cannot be downgraded from Taqto 3.2 onwards. In this case the software versions that cannot be used for the terminal are indicated with a red icon. When you hover the mouse on top of such software, the text *Terminal firmware update prevented by security policy* is displayed.

In the **Configuration** you can either select current parameter values or use the factory default values, or you can load parameters from a configuration file by clicking the **Load terminal configurations** button. You can also make your own changes to the selected configuration in the parameter editor view. To open the editor, click the **Edit the parameter** button . If you have selected multiple terminals, only the common parameters for them are shown.

By selecting force re-write all parameters, you can force to write all parameters to the terminal instead of normal way of writing only changed parameters.

In the case Taqto supports editing the content of your terminal, **Content area** is shown. In this area you can either select the current content or use clean content, or you can load content from a content file by clicking the **Load terminal content** button. You can also make your own changes to the selected content in the content editor view. To open the editor, click the **Edit the content** button  .

The notification in the second split bar area of the view informs if there are any errors or changes in the terminal software or configuration.

The available buttons in the **Terminal details** area are listed in Table 27.

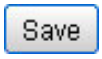
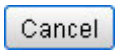
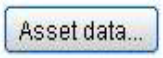
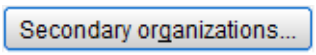
BUTTON	DESCRIPTION
	Used for editing the terminal configuration.
	Used for loading the terminal configuration file. The file can be loaded either from the Taqto Server's database or from the local hard disk.
	Used for editing the terminal content (for example, applications)
	Used for load the terminal content file (for example, applications) from the Taqto Server's database.
	Used for saving changes on terminal details to the Taqto Server's database.
	Used for canceling changes on terminal details or parameters.
	Used for programming current parameters to terminal(s).
	Used to eject a radio terminal (this selected radio terminal is turned to normal mode and put in service).
	Used to manage asset data of the selected devices.
	Used to check and edit the virtual organizations of terminals.

Table 27 Buttons in the Terminal details area

Editing terminal details

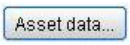
1. Select the terminal.
2. Select the new organization from the organization selector component in the **Terminal details** area.
3. Click the **Save** button to change the terminal organization. The terminal is moved to the selected organization.

Editing terminal information

The details in the Terminal information column are only in the Taqto Server Software's use. The changes in these columns do not affect the information in the terminal.

When editing details in the **Terminal information** column, you can save the changes to the Taqto database by clicking the **Save** button.

Editing terminal asset data

1. Select the terminal(s) in the Terminal database.
2. Click the **Asset data** button  . The **Asset data** window is shown.

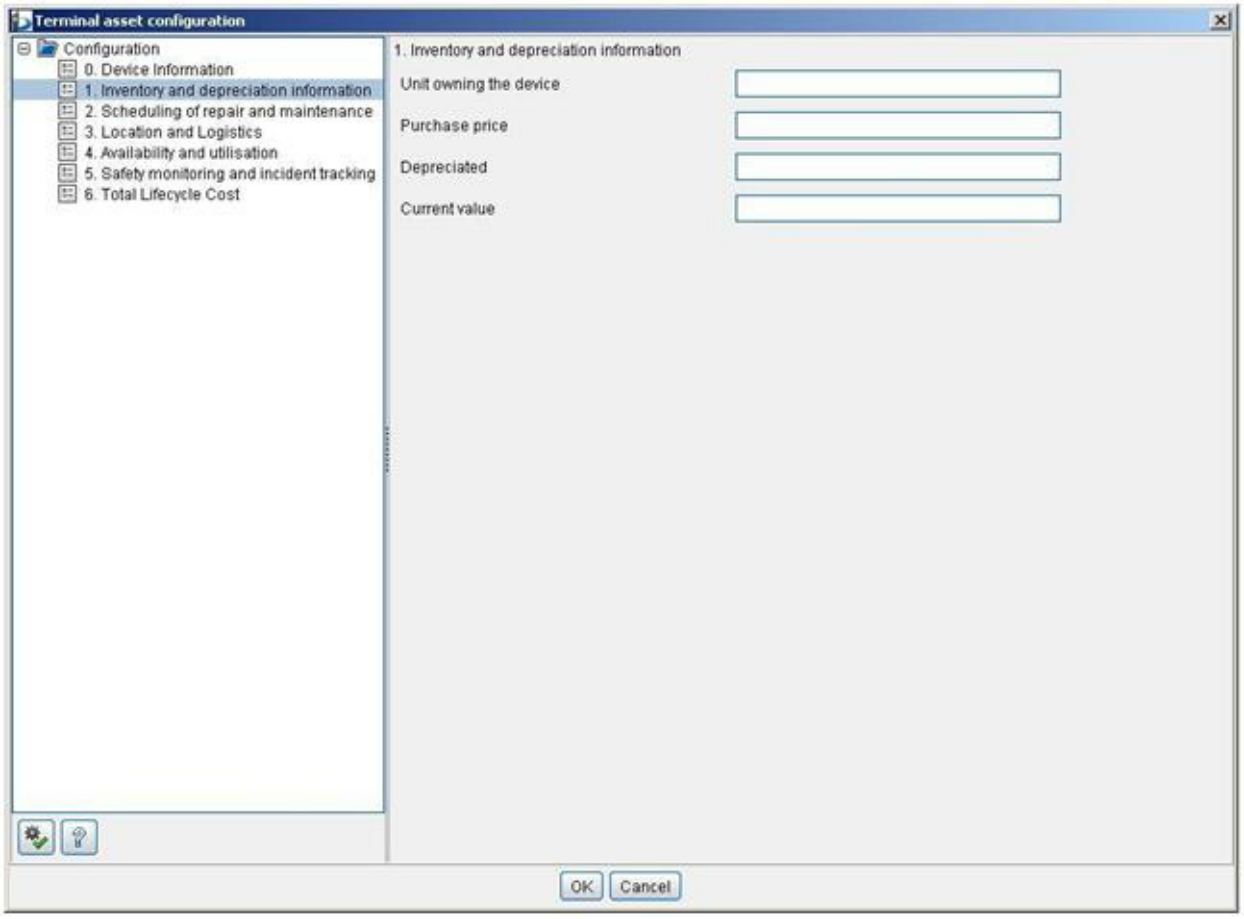


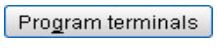
Figure 47 Terminal asset configuration

3. Modify the asset data.
4. Accept the changes with **OK**, or reject the changes with **Cancel**.
5. After you have edited asset data in the **Asset data** dialogue box, you can save the changes to the Taqto database by clicking the **Save** button.

Programming a terminal

When configuring the terminal software, terminal content or configuration, you need to have the appropriate system devices configured in system management. For more information, see section System Management on page 30.

To edit terminal details or program a terminal, proceed as follows:

1. Select the terminal(s) in the **Terminal database**.
2. Change the software version or the configuration (see Changing parameters on page 88).
3. Click the **Program terminals** button  to download the new values to the terminal.
4. A **Program terminals** window is shown. Enter the comment and click **Ok**.

   The red progress bar is shown in the status field of the terminal. After a successful download, the color of the bar turns into green for a while. After that the text **Programmed** is shown in the status field.

Note: If `Allow HomeClient terminal configuration` method selection is enabled in the Taqto system settings, select `HomeClient terminal configuration` method. Available options are `Compare and configure` and `Configure only`.

Note: If `Allow eject after program selection for the user` is enabled in the Taqto system settings, you can also define if the terminal is automatically ejected after the task is programmed. For more information, see Editing server parameters on page 42.

If there are any parameter related errors when parametering/flashing:

1. If there are only few errors, open the parameter editor and change the parameter values to correspond to the required value range.
2. If there are too many errors to correct them manually, apply the factory default settings from the **Baseline** drop-down list in **Terminal details** area.

   If any error still persists, correct it manually, see Step 1.

Note: The **Status** field in the **Terminal database** contains information on the phase of the software and/or downloading the configuration file.

Status of LED indicators during programming

During terminal programming, the following LED indicators are used for indicating the terminal programming status:

STATUS	TERMINAL LED	ADAPTER STATUS LED
Terminal not connected	LED is OFF.	LED is OFF.
Terminal connected	Orange	Orange
Force flash starting	Blinking Orange (if the terminal is working)	Blinking Orange
Show selected terminal	Blinking Orange	Blinking Orange
Terminal reading / programming ongoing or: Connection lost to terminal while reading / programming	Red	Red
Terminal reading / programming fails	Blinking Red	Blinking Red
Terminal connected to adapter but Taqto can not communicate with terminal	LED is OFF.	Blinking Red
Terminal successfully ejected	Green	Green

Table 28 LED indicators during terminal programming

Note: These LED indicators are not used in Tactilon Dabat, Agnet or P8GR type of terminals.

Note: During USB flashing the terminal LED indicators are controlled by the terminal. The LED indicator color may differ from the colors described above.

Status of LED indicators for P8GR during programming

During terminal programming, the following LED indicators are used for indicating the terminal programming status for P8GR.

STATUS	P8GR LED
Terminal not connected	LED is OFF.
Terminal connected	LED is OFF.
Force flash starting	Blinking Yellow (if the terminal is working)
Show selected terminal	Blinking Yellow
Terminal programming ongoing	Blinking Yellow
Connection lost to terminal while reading / programming	Blinking Yellow

Terminal programming fails	Red
Terminal successfully ejected	LED is OFF.

Table 29 Programming status LED indicators for P8GR

Programming tasks

If the terminal is not connected to Taqto, Taqto creates a programming task for the terminal. The task is indicated with the **Task** button in the terminal's status field in the main window. If task programming has failed, task may still remain active and can be retried. In this case task button is .

When you click the **Task** button, the task management window is displayed (see Figure 48).

Note: If the Tactilon Agnet App is connected to Taqto by using OTA connectivity, all programming operations need confirmation from the end user of the application. The end user may accept or reject these programming operations. If the user rejects the programming operations through the OTA connectivity, the task remains active and the task notification information is updated accordingly.

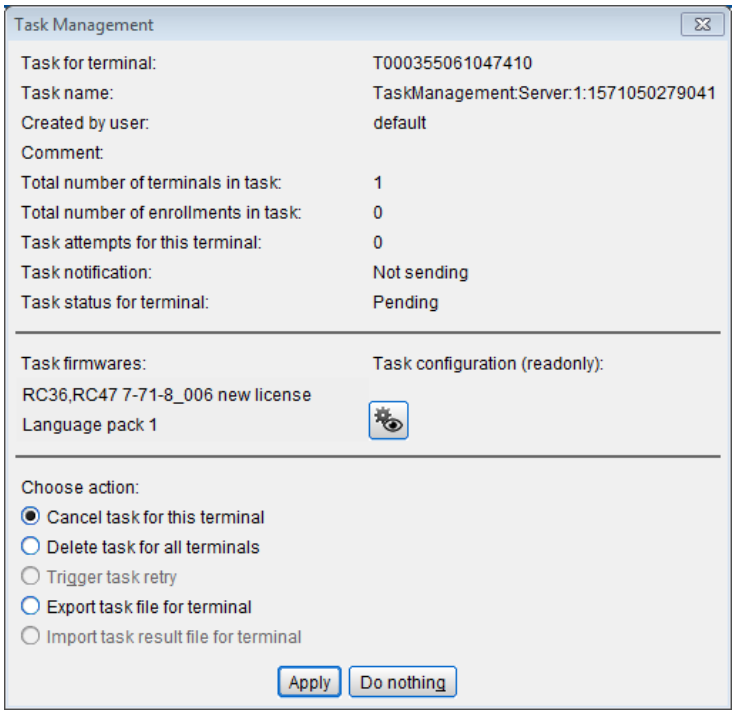


Figure 48 Task Management window

The upper part of the Task Management window contains general task information:

- **Task for terminal**: <Terminal ID>
- **Task name**: <autogenerated task name used by the system>
- **Created by user**: <username>
- **Comment**: <User's freeform description>
- **Terminal firmwares:** <List of firmwares included in this task (if the task contains some firmware changes).>
- **Task configuration (readonly):** <Opens the task configuration in the Terminal configuration dialog in view mode. You can view, validate and save task configuration to server or local file in this view (see **Parameter editor on page 86**).
- **Total number of terminals in task**: <Number of terminals to which the task is assigned>
- **Total number of enrollments in task:** <Number of enrollments to which the task is assigned>
- **Task attempts for this terminal:** <Number of remaining task retries for the terminal>
- **Task notification**: <Notification's SDS sending status or Notifications for OTA programming status.>

- **Task status for terminal**: <Describes the life cycle of the task: pending/exported offline/exported online/ expired> (Only part of the task statuses are visible in the Task Management window)

The lower part of the window contains the following functions for managing the existing task:

- **Cancel task for this terminal**: This task is removed from this particular terminal's queue (but the task still exists for other terminals, if assigned for several).
- **Delete task for all terminals**: The task is removed from all the terminals to which it was originally assigned.
- **Trigger task retry:** This task is retried for this terminal. The terminal must be connected to Taqto in order to trigger task retry.
- **Export task file for terminal**: The task can be written to a file for delivering it separately to Home Client (offline mode).
- **Import task result file for terminal**: Import the result file written by the Home Client in offline mode.

Note: The connected radio terminal can be ejected from the Taqto system by clicking . This means that the radio is turned to the mode that is configured in the Taqto system, and that the radio terminal is not connected to theTaqto system anymore (no additional radio programming can be configured to this radio).

Programming the terminal baseline

The terminal baseline (baseline SW version and parameter configuration) is a client setting, and it can be defined for every terminal. If you have to restore baseline settings to the terminal, proceed as follows:

1. Select the terminal(s) in the **Terminal database**.

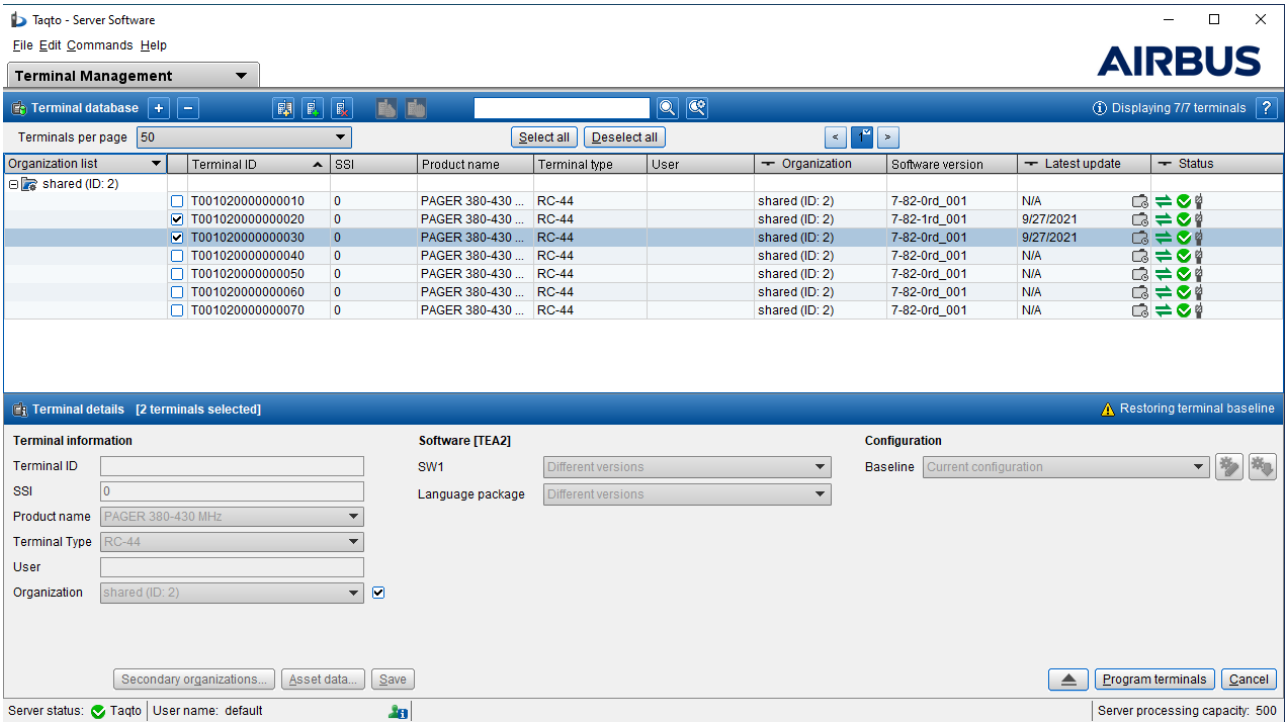


Figure 49 Terminal Management including baseline

2. Select **Commands ->Terminal baseline -> Apply terminal baseline**.

   The Baseline configuration of the selected terminals is visible in **Terminal details** area. If the baseline setting is different for the selected terminals, the text 'different versions' is shown in the corresponding field.

3. Click the **Program terminals** button Program terminals to restore the baseline settings to the terminal.

Note: To create the terminal baseline for the selected terminals, select **Commands** ->**Terminal baseline** -> **Create terminal baseline**.

Terminal management with a large organization structure

If the organization hierarchy is very large, it is sometimes easier to find the wanted terminals for operation by filtering terminals. So the terminal management application shows only the terminals from the selected organization nodes.

This is done with the organization filter component (icon in the header) available from the header of the organization column in the **Terminal management**. When clicking the icon, a popup dialogue box opens.

There are two boxes in front of the levels. The first box selects the full subtree, that is, the selected organization and all organizations below it in the organization hierarchy. The second box selects the selected organization but no sub-level organizations.

The following popup dialogue box shows that only *suborganization level 3* terminals are selected.

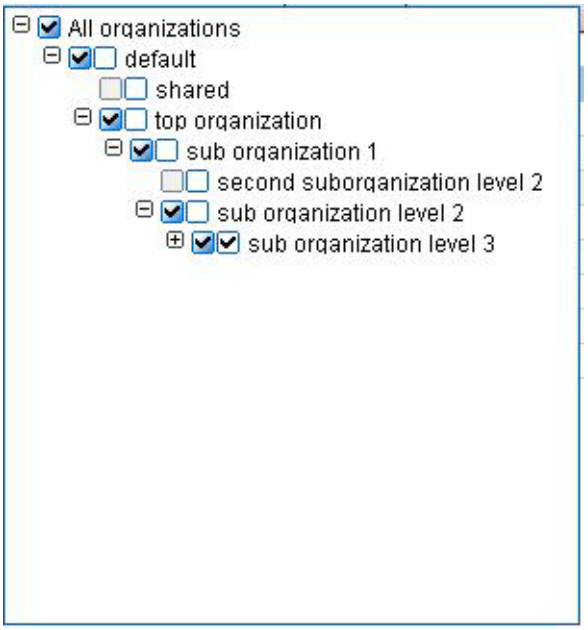


Figure 50 Organization filter, sub-organization level 3 selected

When you have filtered terminals, the organization column icon is *. If you click this icon, the dialogue box opens again. You can select and deselect organizations in the filter. The filter is applied when you click outside the filter area. The terminals shown in the table are now limited to the organizations that you have selected. To clear filters, open the filter area and click the root select box named **All organizations**.

The following popup dialogue box shows that all organizations are selected for the terminal filter. All terminals in the database are shown.

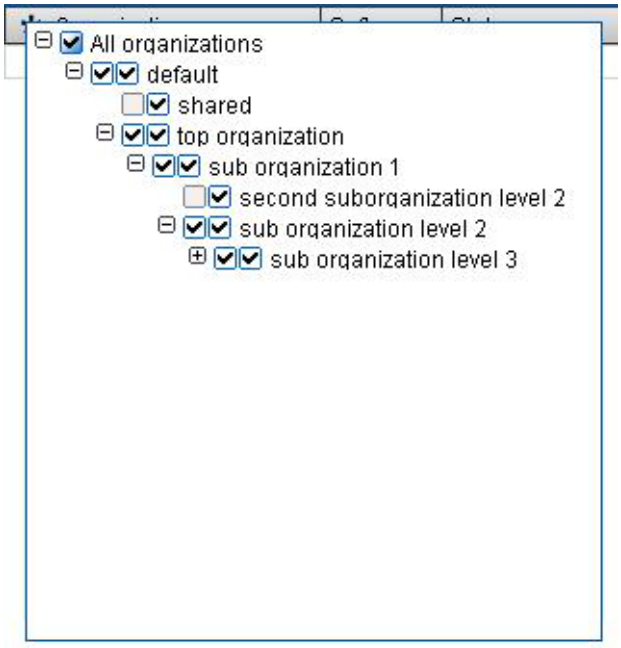


Figure 51 Organization filter, all organizations selected

Terminals in different organizations

Users high enough in the organization hierarchy can access terminals from several organizations. There are some limitations what operations can be performed on multiple terminals at once:

- Terminal asset data can always be modified.
- Terminal organization data can be changed. The selected terminals are moved to the selected organization.
- The **Save** button saves the changes both to the asset data and to the organization.
- Different hardware terminals can be selected and common parameters modified.

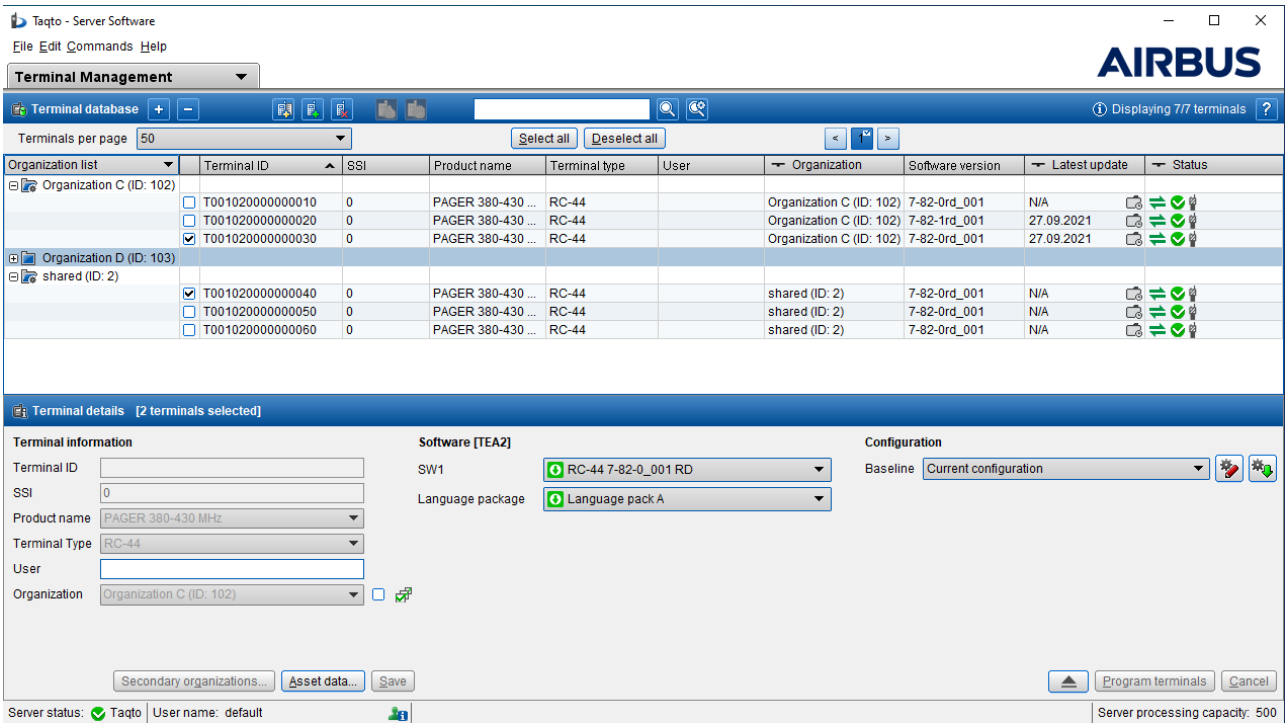


Figure 52 Multiple terminals selected for organization change

Handling unsupported terminals

The improved handling of unsupported terminals provides users more operation options to perform. This makes it easier to recover from error situations regarding terminal operations and enables more straightforward paths for programming unsupported terminals to a supported and functional state.

The following functions are available for unsupported terminals:

- Reprovisiong the terminal
- Resetting the MS-SC authentication master key
- Restoring the terminal baseline
- Performing a terminal factory reset on Tactilon Dabat device's Android software

The following functions are prohibited for unsupported terminals:

- Exporting diagnostic data
- Programming the K-key with K-Taqto
- Reading the terminal
- Creating the terminal baseline.

An unsupported terminal can be identified by the Unsupported terminal icon in the Terminal Management device list, as shown in the following picture.

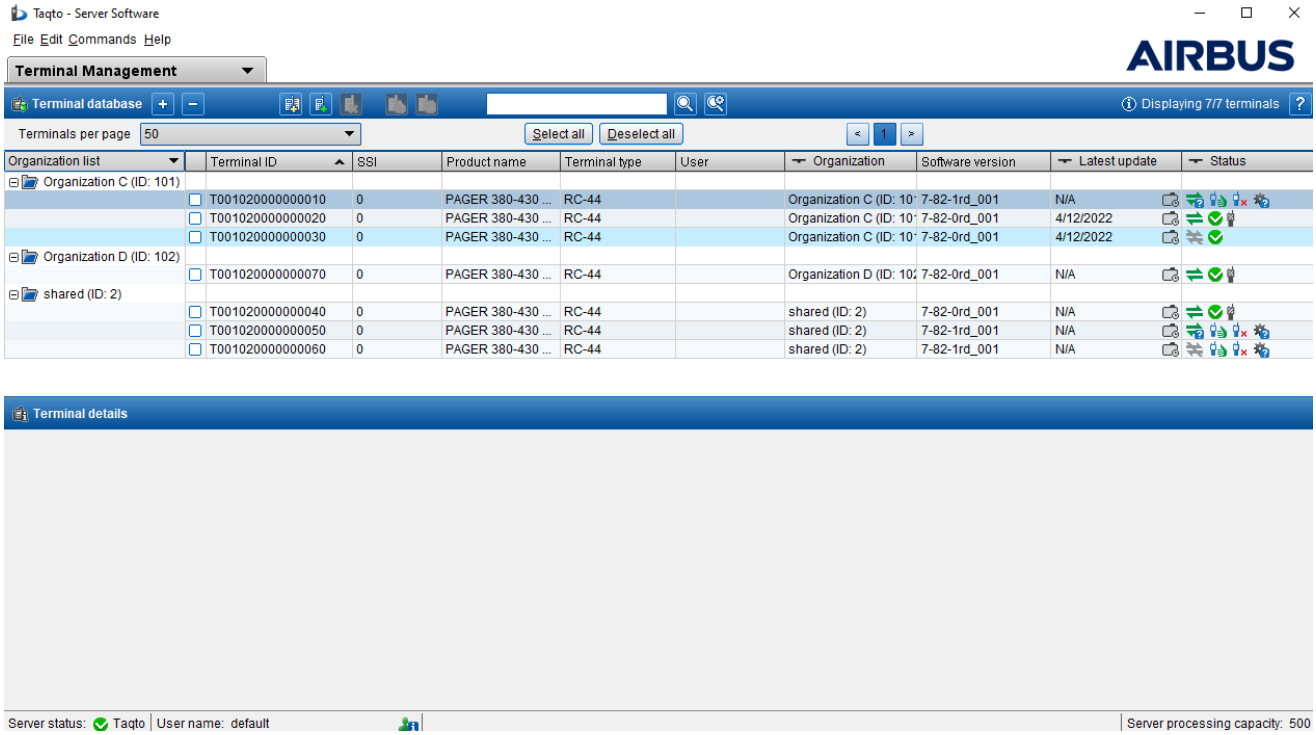


Figure 53 Identifying an unsupported terminal

In the following picture, the user has selected an unsupported terminal, which activates the terminal details information in the lower part of the Terminal Management window. Select the **SW1** version to be flashed for the terminal to become supported.

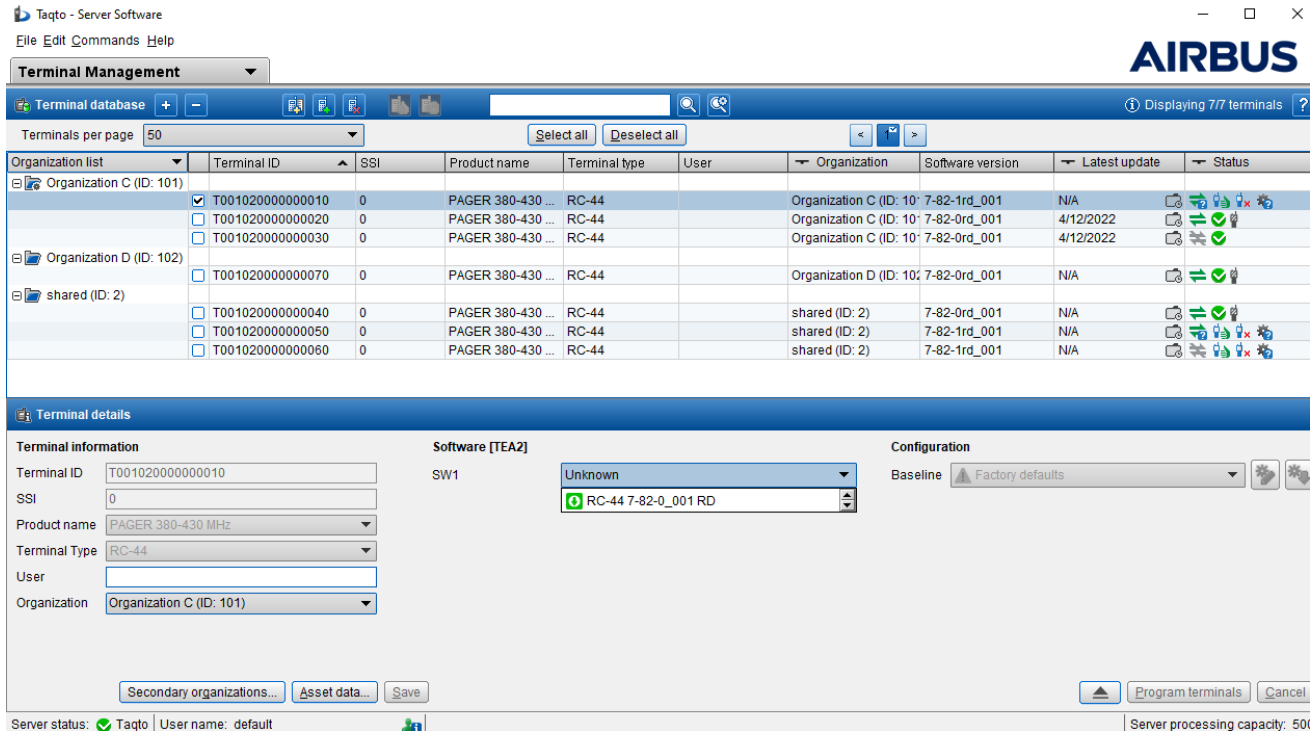


Figure 54 Unsupported terminal selected

Exporting diagnostic data

Taqto can export terminal diagnostic data from online terminals that are connected to Taqto server software or client software. Data is stored as UTF-8 encoded text file.

To export diagnostic data:

1. In the Taqto **Terminal Management**, select the terminal where you want to export diagnostic data from.
2. Select **Commands** -> **Export terminal diagnostic data**.
3. Select the folder and give the file name for storing the diagnostic data.

Parameter editor

You can open the terminal parameter/configuration editor by clicking the **Edit the parameter** button  in the **Terminal details** area.

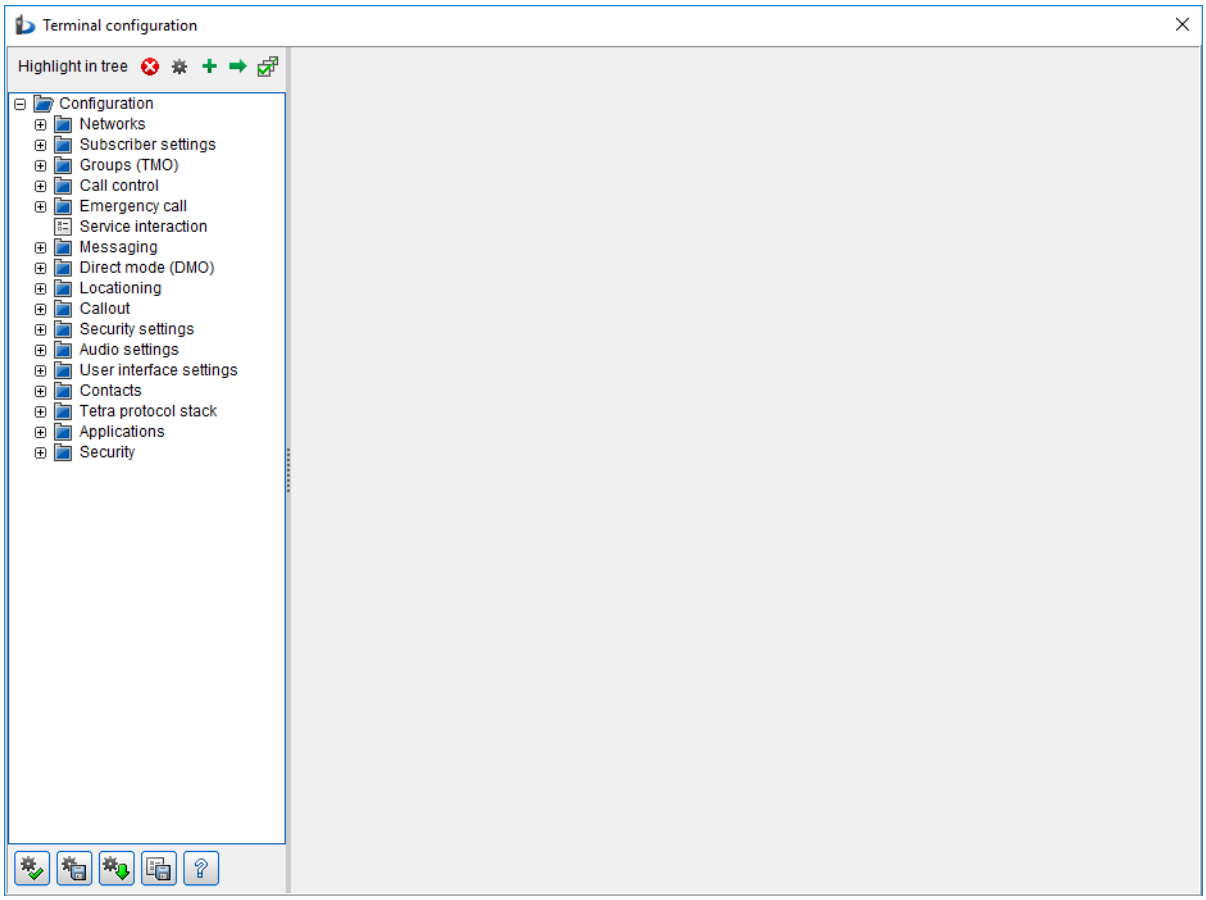


Figure 55 Parameter editor in the main view

The left side of the configuration editor window contains a **Highlight in tree** section showing:

- Error icon
- Change icon
- New parameter icon
- Different parameter value icon in case of multiple terminals is selected

Figure 56 Highlight in tree section

By default all icons are enabled which means that corresponding parameters (erroneous, changed, new, with different value in different terminals in multi-selection) are highlighted with small icons in the parameter tree.

By pressing the corresponding icon button in the **Highlight in tree** section, see Figure 56, icons can be disabled and made invisible in the tree.

The right side of the window contains a list of the parameters in each group. The `Configuration group` folder itself does not necessarily contain parameters. They can be found in the groups under the folder.

All the parameter editors have certain common features, that is, a label, a notification area and a parameter value (see Figure 57).

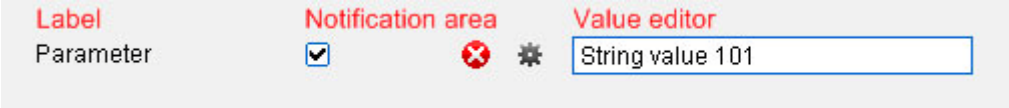


Figure 57 Features in the parameter editor

The **Label** is the name of the parameter. A more descriptive text of each parameter is included in a tooltip.

The **Notification area** contains the status icons of the parameter (see Table 30).

ICON	MEANING	DESCRIPTION
	Apply a parameter	If multiple terminals are selected, the parameter next to this checkbox (for example, the terminal configuration parameter) is applied only if this checkbox is checked.
	Select item	The item next to this checkbox (in the table) is selected only if this checkbox is checked.
	Multiple terminals	If multiple terminals are selected and this icon is shown, the respective parameter has different values for different terminals.
	Dependence mark	If this icon is shown in front of the parameter, the parameter has a dependence to another parameter. The tooltip of the icon shows more information.
	Invalid value	If this icon is visible, the value of the parameter is invalid - for example, strings are too long, numbers are out of limit.
	Changed value	If this icon is visible, the value of the parameter has been changed, or the user has changed a parameter that has a dependence to the marked parameter. The tooltip of the icon shows more information
	Converted value	If this icon is visible, the value of the parameter has been automatically converted because the content of imported parameter had changed between terminal SW versions.
	Unset value	If this icon is visible, the value of the parameter has not been set.

Table 30 Notification icons in the parameter editor

Each parameter type has its own unique **Value** editor (for example, a string parameter has a text field). The **Value** editor can also have a tooltip with a valid value description.

Note: If you have the rights to view a parameter but not the rights to edit it, it is displayed as disabled. If you do not have the rights to view a parameter, it is not displayed.

Note: When configuring terminal parameters:
if multiple terminals are selected, the default value of the parameter is shown if the values differ from each other. Parameters that differ are shown with a particular icon (see Table 30). If the parameter is selected, modified and saved, it is changed in both terminals. If the parameter remains unselected, both terminals retain their original values.

The functions listed in Table 31 are available in the configuration editor.

BUTTON	DESCRIPTION
	Used for validating the changes to parameters
	Used for saving the whole configuration tree to a file
	Used for saving the selected group/folder of parameters as a configuration file
	Used for loading a configuration file

Table 31 Toolbar buttons in the main view of the parameter editor

Changing parameters

To change parameters, proceed as follows:

1. Select the configuration group/folder in the configuration group tree.
2. Change the values of parameters in the corresponding fields.

   The value changes are indicated with an icon  next to the parameter. The new value is also validated, and possible errors and dependences are shown with the icons  and  .

   Icons are also used in the parameter group tree to indicate which tree members include changes or errors ( , ).

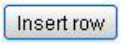
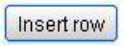
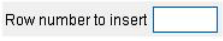
3. Click the **Validate** button  to validate changes in the Taqto Server.

 **Note:** In the case there are multiple terminals selected, validation is done for all the selected terminals. Icons on the Taqto UI indicate possible errors only in one of the selected terminals, so it may happen that there are no errors shown on the UI, but validation still fails.

4. When you have made all changes and validations, click **Ok**.
5. The **Terminal Management** view is shown. Now you can program the terminal, if there are no errors in the configuration.

Dynamic arrays and relation parameters

In the **Dynamic array** it is possible to add/remove or edit parameters in a table-like presentation.

- To add a parameter value to array, click  .
- To insert a parameter to a specific row:
  - select first the row and click  , or
  - give explicitely a row number and click  .

 **Note:** There are two dynamic array types: sparse and dense arrays.
For sparse arrays it is not allowed to add a row where the parameter row exists.

Dense dynamic arrays parameter(s) can be inserted to anywhere. An inserted parameter row is empty, and valid values must be given in the inserted row. Dynamic array rows can be ordered using the and buttons.

Relation parameter values can be selected from the user-defined values. There are two major relation parameter definitions:

- talk group relation parameter:
  - For Talk group relation parameter the user must first define talk groups to pick up relation parameter values (either trunked mode or direct mode talk groups can be applied). **TMO group** selection shows further icons  for groups that are not included in the scanning list and  icon for groups included in the scanning list.

- normal relation parameter:
  - Normal relation parameters selection list requires a definition of parameter values to the relation source array. In the parameter validation the relation parameter values are validated for the referential integrity.

Saving the whole configuration or a parameter group

It is possible to save either the whole configuration or the selected parameter group (or folder).

The system does not make any difference between a whole configuration and a parameter group. You have to make a distinction between them by giving them their own names. It is also possible to save the whole configuration or a parameter group even if there are errors in some parameters.

To save the whole configuration, proceed as follows:

1. Click the **Save configuration** button  .
2. Select the location you want to save the file to, either to the Taqto database or to the local hard disk.
3. Enter the name of the configuration, and click **Ok**.

To save a parameter group, proceed as follows:

1. Select the parameter group folder or a parameter group.
2. Click the **Save a group** button  .
3. Select the location you want to save the file to, either to the Taqto database or to the local hard disk.
4. Enter the name of the group, and click **Ok**.

Note: You can also save the configuration files to the Taqto database by importing them to the **Configuration Management** application.

Loading a configuration file

When loading a configuration, it is possible to load either the whole configuration or just a parameter group (or folder).

To load the configuration, proceed as follows:

1. Click the **Load the configuration** button  .
2. Select the location you want to load the file from, either from the Taqto database or the local hard disk.
3. Select the file you want to download.

Note: Only the configuration files that are compatible with the software version of the selected terminal are shown.

4. Click **Ok**.
5. If content of the imported parameters has been changed between terminal SW versions, the parameter value is automatically converted and parameter is indicated with icon. In the case the conversion fails, you will be informed and you can choose to set the parameter either to the factory default or NULL value. If NULL is selected, you can see the errors in the parameter editor and manually fix the situation.

Exporting and importing terminal parameters to a file

To allow management of TETRA terminal parameters, for example, in the Microsoft Excel tool, Taqto can export and import terminal definitions to and from a .csv file or/and excel (.xlsx) or/and .xml file. To do this, proceed as follows:

1. In the Taqto **Terminal Management**, select a terminal that you want to use to export the terminal definitions to a file.
2. Click the **Edit the parameter** button  in the **Device details** area.

3. Select the **Group settings** parameter group.
4. Click the **Save configuration group** button  .
5. In the **local file system** tab, select .csv/.xlsx/.xml as a format for the configuration file
6. Click the **Save** button.

   Now the file is available for editing in the Excel. Once you have done the editing of the talkgroup information, you can import the file in Taqto and program it to the terminal.
7. In the Taqto **Terminal Management** view, select a terminal to which you want to import the terminal configuration.
8. Click the **Edit the parameter** button  in the **Device details** area.
9. Click the **Load configuration** button  .
10. In the **local file system** tab, select .csv/.xlsx/.xml as a format for the configuration file and select the .csv/.xlsx/.xml file to be imported.

Note: There are a few reserved keywords that must not be used in the text-type parameter values. These values are internally used by the Taqto system. Using them may lead to errors in configuration file exports and imports. The keywords not to be used: "<UNSET>" and "<NO_VALUE>"

11. Click the **Load** button.

Note: In order to use this .csv/.xlsx/.xml editing, the structure of the export file is to be compliant with Taqto, thus it is recommended that the terminal file template is exported in the beginning from the Taqto system.

Content editor

In the case Taqto supports editing the content of your terminal, you can open the terminal content editor by clicking the **Edit the content** button  in the **Terminal details** area.

The left side of the content editor window contains the folder structure for the content files in the terminal including the installed contents of the terminals. The right side of the content editor window contains list of available content files (for example, application files) that can be programmed to the terminals.

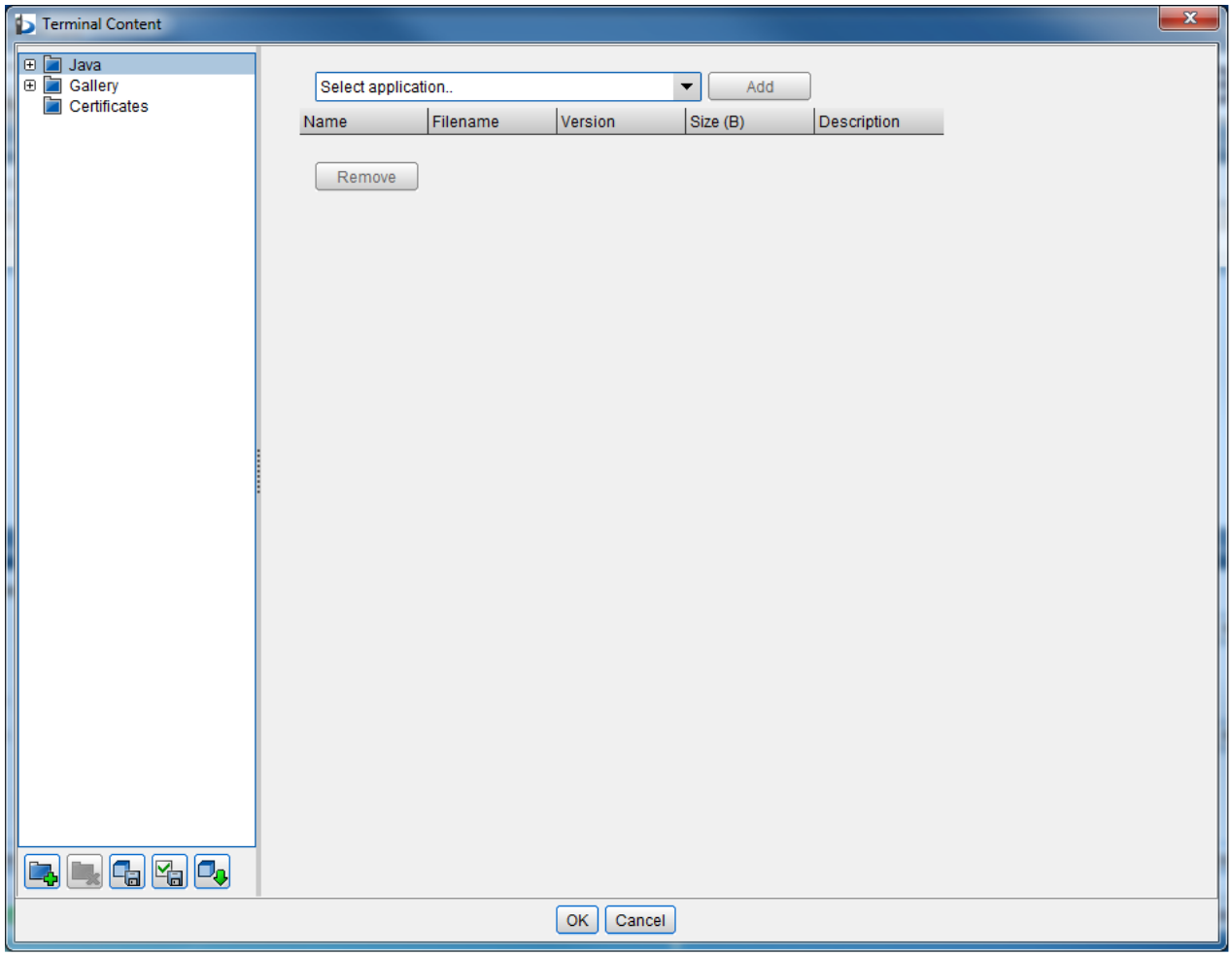


Figure 58 Content editor in the main view

The functions listed in Table 32 are available in the left side of the content editor.

BUTTON	DESCRIPTION
	Used for creating a folder to the content structure
	Used for removing a folder from the content structure
	Used for saving the whole content structure and content to a file
	Used for saving the selected group/folder of parameters as a configuration file
	Used for loading a content file

Table 32 Toolbar buttons in the main view of the content editor

Creating a folder

To create a folder to the content structure, proceed as follows:

1. Select the folder in the folder structure on the left side of the Content editor dialog.
2. Click the **Create folder** button  .
3. Enter the name of the new folder

Removing a folder

To remove a folder from the content structure, proceed as follows:

1. Select the folder in the folder structure on the left side of the Content editor dialog.
2. Click the **Remove folder** button  .

Adding content

To add content to the terminal, proceed as follows:

1. Select the content folder in the folder structure on the left side of the Content editor dialog.
2. Select the application from the drop-down selection list on the right side of Content editor dialog and click **Add**.

   The selected application appears in the list of applications and in the selected content folder in the folder structure.
3. When you have made all changes, click **Ok**.
4. The T**erminal Management** view is shown. Now you can program the terminal.

Removing content

To remove content from the terminal, proceed as follows:

1. Select the content folder in the folder structure on the right side of the Content editor dialog.
2. Select the application in the selection list on the right side of the Content editor dialog and click **Remove**.
3. When you have made all changes, click **Ok**.
4. The Terminal Management view is shown. Now you can program the terminal. The removable applications are uninstalled in the terminal.

Saving a whole content folder structure or a specific content folder only

It is possible to save either the whole content or the selected content folder.

The system does not make any difference between the whole content and a content folder. You must make the distinction between them by giving them their own names. It is also possible to save the whole content structure or only a content folder.

To save the whole content, proceed as follows:

1. Click the **Save Content** button  .
2. Select the location where you want to save the file: either to the Taqto database or the local hard disk.
3. Enter the name of the content, and click **Ok**.

To save a content folder only, proceed as follows:

1. Select the content folder.
2. Click the **Save Content** folder button  .
3. Select the location in the Taqto database where you want to save the file.
4. Enter the name of the group, and click **Ok**.

Loading a content file

When loading a content file, it is possible to load either the whole content folder structure or just a specific content folder.

To load the configuration, proceed as follows:

1. Click the **Load content** button  .
2. Select the location in the Taqto database from where you want to load the file.
3. Select the content file you want to download.
4. Click **Ok**.
5. If a content folder has been selected, Taqto asks for a confirmation that you want to overwrite the existing folder in the tree.

ITSI Management

The ITSI Management application is split into two sub-applications: ITSI List Management and ITSI-REF Management. The ITSI List Management application includes all features for managing ITSI lists. The actual ITSI numbers are programmed to terminals in the Terminal Management application. The ITSI-REF Management application has all features for managing the ITSI-REF transfer between Taqto® and TETRA Infrastructure.

ITSI List Management

The ITSI List Management sub-application provides features to generate, create, and import ITSI lists, to exchange ITSI numbers between ITSI lists, as well as to report ITSI lists' statuses in terms of Free, Reserved, Failed and Programmed ITSI numbers.

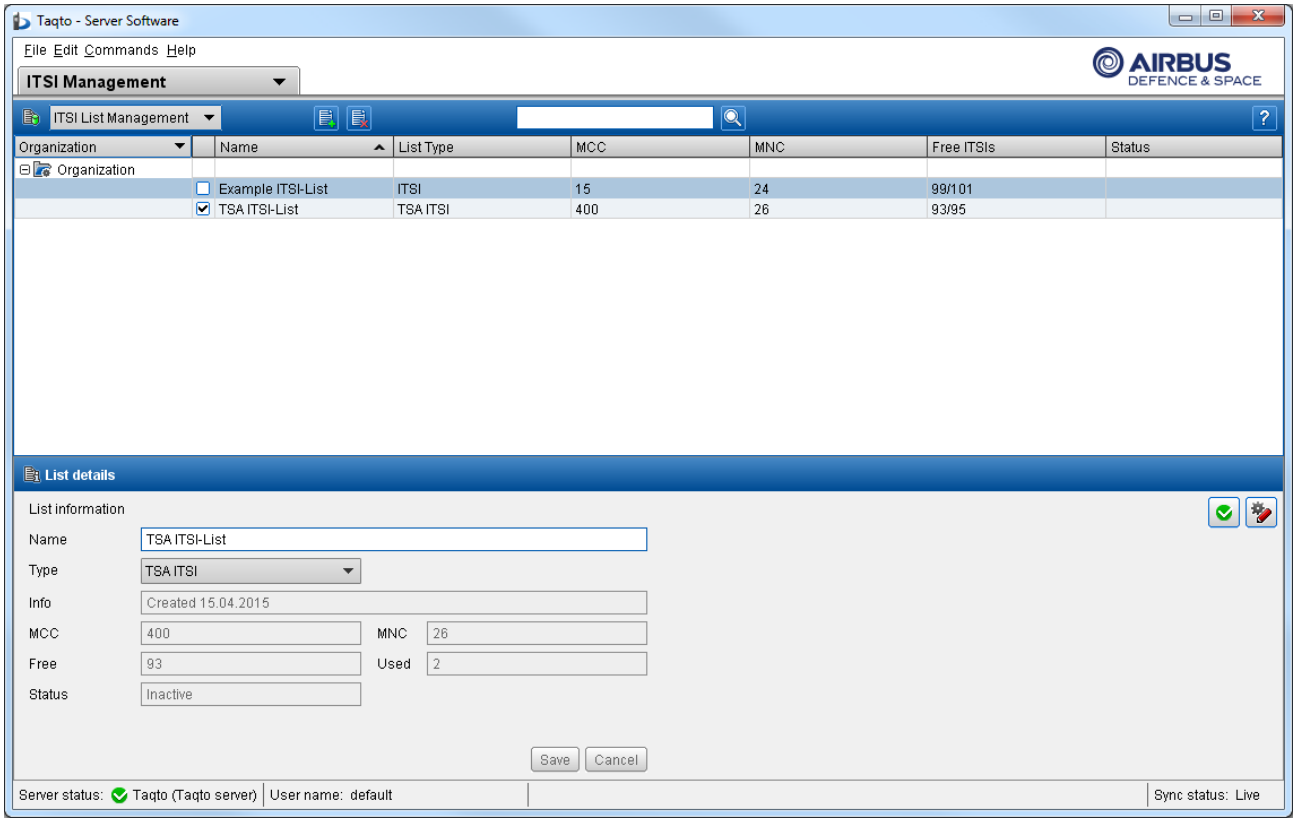


Figure 59 ITSI management, ITSI List management application

Adding a new ITSI list

A new ITSI list is added as follows:

1. Click the **Add ITSI list** button  .
2. Fill in the ITSI list details in the **List details**:
   - **Name** of the ITSI list
   - Additional **Info** on the ITSI list
   - **MCC** for the ITSI list
   - **MNC** for the ITSI list
   - **List type (Tactilon Agnet, terminal list)** for the ITSI list
3. Save the details by clicking the **Save** button below.

Removing an existing ITSI list

An existing ITSI list is removed as follows:

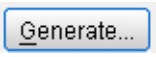
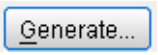
1. Select ITSI list(s) to be removed
2. Click the **Remove selected ITSI list(s)** button  .

Note: Only empty ITSI lists can be removed.

Note: An active ITSI list cannot be removed

Generating ITSI numbers to an ITSI list

ITSI numbers can be automatically generated to the list as follows:

1. For the selected ITSI list, click the **Edit**  button.
2. In the **Operations - Add/Remove** parameter group, click the **Generate**  button.
3. Enter the **SSI range** for ITSI number generation.
4. Click the **Generate**  button.

Note: Generating ITSI numbers to an ITSI list is possible only if list type is set to 'terminal list'.

Setting ITSI list active

The active ITSI list (used for ITSI numbering in the **Terminal Management application**) is defined by clicking **Set active**  button for the selected ITSI list.

Note: Only one ITSI list can be active at a time for each ITSI list type.

Importing external ITSI numbers to an ITSI list

ITSI numbers can be imported from external ITSI list files as follows:

1. For the selected ITSI list, click the **Edit**  button.
2. In the **Operations - Add/Remove** parameter group, click the **Import**  button.
3. Select the ITSI list file (`.LST` for DCT4 type of ITSI lists or `.CSV` for Agnet type of ITSI list) to be imported.

4. Click the **OK** button to confirm the ITSI number importing.

Note: The ITSI list does not allow the reserved character * to be used.

Note: The LST file lists the ITSIs on separate rows. Each ITSI consists of a total of 17 digits: the ISSI (the first 8 digits), MCC (4 digits) and MNC (5 digits).

Example:

```
01230001023400073
01230002023400073
01230003023400073
```

The given MCC and MNC values must match the MCC and MNC values on the ITSI list, otherwise the importing of the ITSI file fails.

CSV is a semicolon separated data file containing the following data per line:

```
mcc;mnc;ssi;primaryProfile;activeProfileIndex;password;organisation;name;mnemonic;comment;eMail;phoneNumber;postalAddress
```

Inserting ITSI numbers manually to an ITSI list

ITSI numbers can be entered also manually in the selected ITSI list as follows:

1. For the selected ITSI list, click the **Edit** button.
2. In the **Operations - Add/Remove** parameter group, click the **Insert** Insert... button.
3. Enter the SSI to be inserted.
4. Click the **OK** button to add the entered SSI to the selected ITSI list.

Note: The ITSI list does not allow the reserved character * to be used.

Moving ITSI numbers between ITSI lists

ITSI numbers can be moved from/to the selected ITSI list to another one as follows:

1. For the selected ITSI list, click the **Edit** button.
2. In the **Operations - Move** parameter group, select in the source ITSI list those ITSI numbers that are to be moved to another ITSI list.
3. Select in the **To** drop box those ITSI lists where the selected ITSI numbers are to be moved.
4. Click either << or >> to define the direction of the ITSI number transfer.

Note: List type must be set to the same type in all lists when moving ITSI numbers between ITSI lists.

Creating ITSI list reports

The ITSI lists status can be prepared as a report as follows:

1. For the selected ITSI list, click the **Edit** button.
2. In the **Operations - Reporting** parameter group, select which ITSI numbers shall be reported from the selected ITSI list.
   - Free
   - Reserved

- Programmed
- Failed

3. Show the report by clicking the **View report** View report button.
4. An ITSI list report is shown with the default Web browser.

ITSI-REF management

The ITSI-REF Management sub-application provides features to review, report, and export ITSI-REF information in the Taqto system.

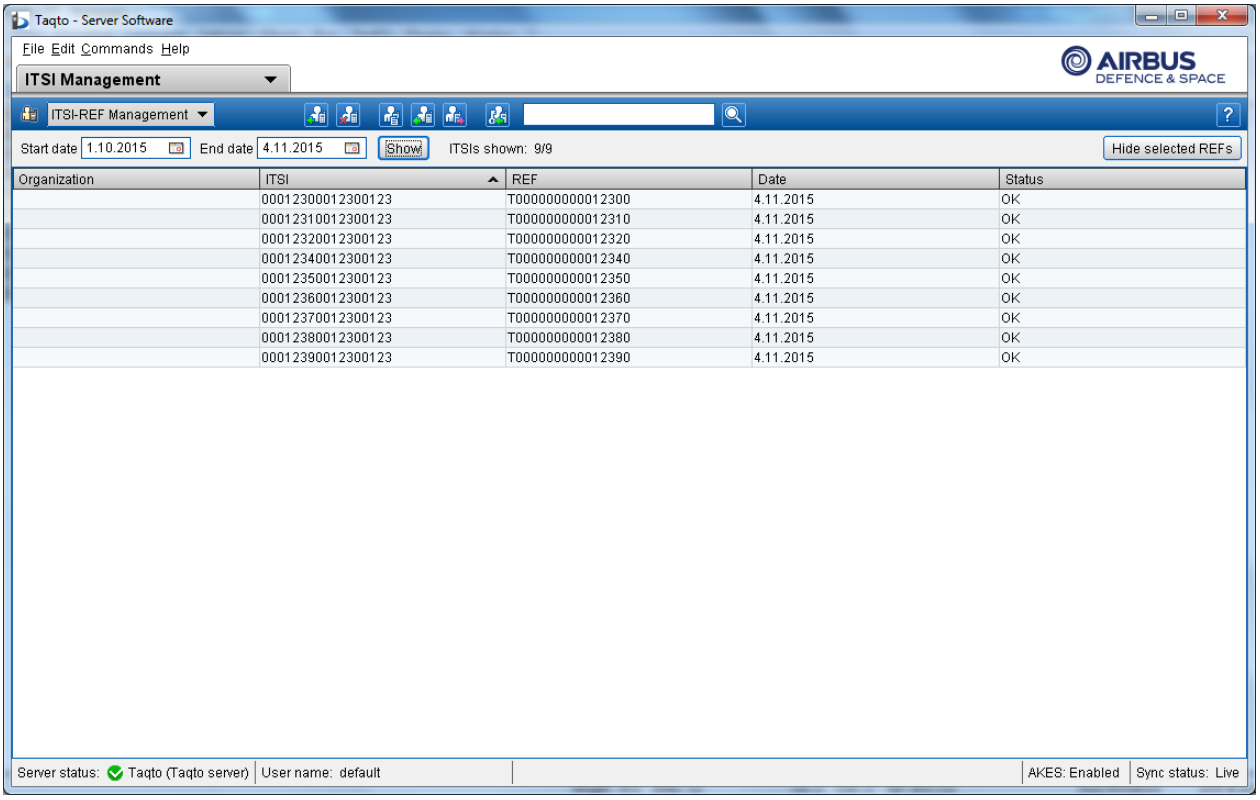


Figure 60 ITSI Management, ITSI-REF Management

Adding ITSI-REF

New ITSI-REF information can be added as follows:

1. Click the **Add** button in the toolbar or select menu item **Commands - Add REFs**. Add ITSI-REF dialogue opens..

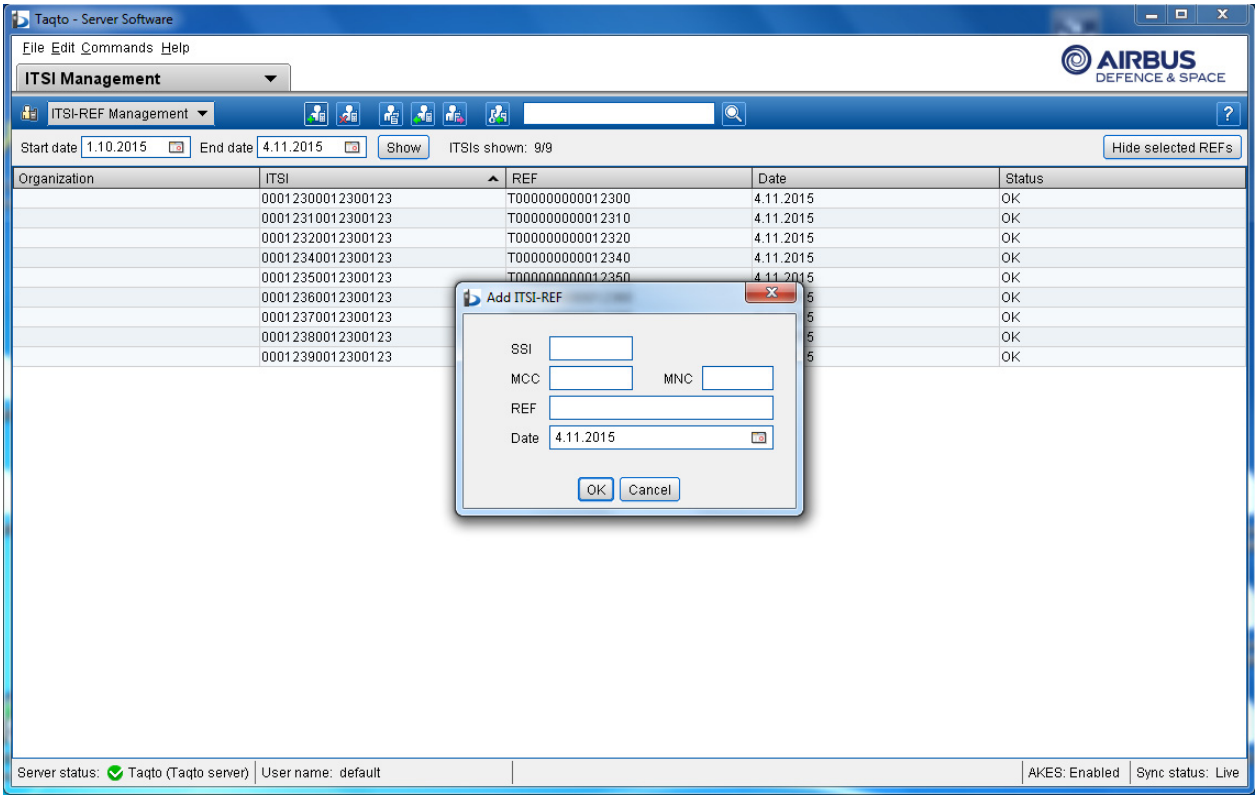


Figure 61 ITSI Management, Add ITSI-REF dialogue

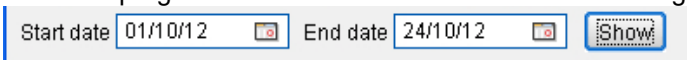
2. Enter SSI, MCC, MNC and REF fields in the **Add ITSI-REF** dialogue. Current date is shown as default in the date field, but it can be changed by clicking the **Calendar** button on the right side of the date field.
3. Click the **OK** button.

Note: Added ITSI-REF information is automatically sent to AKES if AKES connectivity is configured and enabled.

Removing ITSI-REF

The ITSI-REF information can be removed as follows:

1. Define the programming date range for ITSI-REFs that are to be removed by defining the **Start date - End date** range in the ITSI-REF Management windows.
2. Show the programmed ITSI-REFs in the selected date range by clicking the **Show** button.



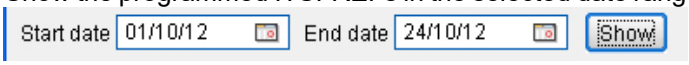
3. Select the ITSI-REFs to be included in the removal by selecting them (with **Ctrl** and **Shift**) in the ITSI-REF list. If nothing has been selected, all shown ITSI-REFs are selected and will be removed.
4. Optionally, hide the ITSI-REFs that are not to be included in the removal by selecting them in the ITSI-REF list and clicking the **Hide selected REFs** 

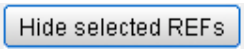
button.
5. Remove the selected ITSI-REFs by clicking the **Remove** button in the toolbar or selecting the menu item **Commands - Remove REFs**.
6. Click the **OK** button to confirm the removal.

ITSI-REF reporting

The ITSI-REF information can be reported as follows:

1. Define the programming date range for ITSI-REFs to be reported by defining the **Start date - End date** range in the ITSI-REF Management windows.
2. Show the programmed ITSI-REFs in the selected date range by clicking the **Show** button.



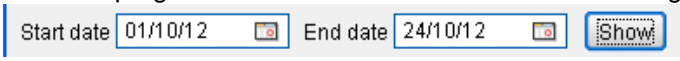
3. Hide the ITSI-REFs not to be included in the report by selecting them in the ITSI-REF list and by clicking the **Hide selected REFs**  button.

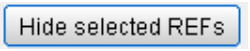
4. Show the ITSI-REF report by clicking the **View report**  button in the toolbar or by selecting the menu item **Commands - View report**.

ITSI-REF exporting

The ITSI-REF information can be exported as follows:

1. Define the programming date range for ITSI-REFs to be reported by defining the **Start date - End date** range in the ITSI-REF Management windows.
2. Show the programmed ITSI-REFs in the selected date range by clicking the **Show** button.



3. Select the ITSI-REFs to be included in the export by selecting (with **Ctrl** and **Shift**) them in the ITSI-REF list. If nothing has been selected, all shown ITSI-REFs are selected and will be exported.
4. Optionally, hide the ITSI-REFs not to be included in the export by selecting them in the ITSI-REF list and by clicking the **Hide selected REFs**  button.

5. Export the selected ITSI-REFs by clicking the **Export**  button in the toolbar or by selecting the menu item **Commands - Export REFs**.
6. Define the export file name and select the export file format from the **Files of type** drop box.
7. Click the **Save** button.

ITSI-REF importing

The ITSI-REF information can be imported as follows:

1. Click the **Import**  button in the toolbar or Select the menu item **Commands - Import REFs**.
2. Select the import file format from the **Files of type** drop box.
3. Click the **Open** button.

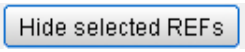
Note: Imported ITSI-REF information is automatically sent to AKES if AKES connectivity is configured and enabled.

Sending ITSI-REF to AKES

The ITSI-REF information can be send to AKES as follows:

Note: The send operation requires that AKES device connection is configured and enabled. AKES device status is visible in the Status bar area of ITSI-REF Management window, see Figure 60.

1. Define the programming date range for ITSI-REFs that are to be sent by defining the **Start date - End date** range in the ITSI-REF Management windows.
2. Show the programmed ITSI-REFs in the selected date range by clicking the **Show** button.

3. Select the ITSI-REFs that are to be sent by selecting (with **Ctrl** and **Shift**) them in the ITSI-REF list. If nothing has been selected, then all shown ITSI-REFs are selected and will be sent.
4. Optionally, hide the ITSI-REFs that are not to be sent by selecting them in the ITSI-REF list and by clicking the **Hide selected REFs** 

button.
5. Send the selected ITSI-REFs by clicking the **Send**  button in the toolbar or selecting the menu item **Commands - Send REFs**.
6. Click the **OK** button to confirm the send operation.

ITSI-REF file conversions

The ITSI-REF transfer files can be converted from one format to another one as follows:

1. Select from the top menu **Command - Convert REF files**.
2. Select the source file to be converted and define the file to where the conversion results are stored.

Note: You can browse both the source file and the target file.by clicking the **Browse...** buttons.

3. Convert the file by clicking the **Convert** button.

Simultaneous access to Taqto Server using multiple remote Taqto Server User Interfaces

Since Taqto system is allowing management of terminals remotely over IP, it allows also remote access to the Taqto Server using remote Taqto server User Interface. The possibility to access the server from multiple user interfaces enables also situations where locking of functionalities is required.

These situations are possible when following operations are done with Taqto system:

- A single Terminal is or same terminals are managed through multiple server UIs
- A single Configuration file is modified through multiple server UIs
- Taqto system configuration is updated simultaneously through multiple server UIs

When this kind of situation occurs, Taqto system indicates this to the user that has the old and not any more valid baseline available for the configuration update, like shown in the following figure.

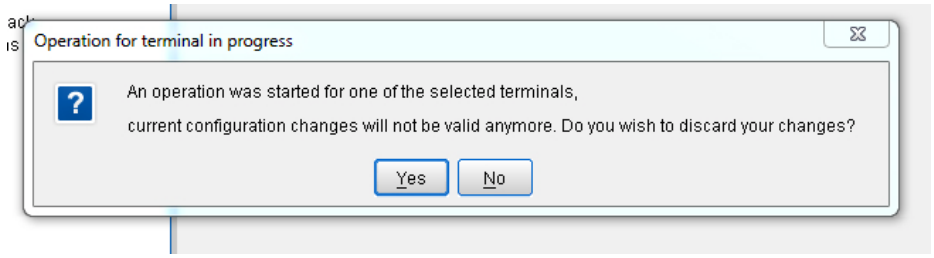


Figure 62 Simultaneous access to Taqto server through multiple server user interfaces

Simultaneous use of asset management with Taqto Server User Interfaces

If another user has saved asset data for same terminal as you with a Taqto server User Interface, the following indication is shown (Figure 63):

Figure 63 Simultaneous use of asset management, overwriting

If you do not want to overwrite your changes, you are asked if the changes should be discarded (Figure 64).

Figure 64 Simultaneous use of asset management, discarding

Log Viewer

The **Log Viewer** management application is used for reporting all the functions made in the **Taqto Server** application (see Figure 65).

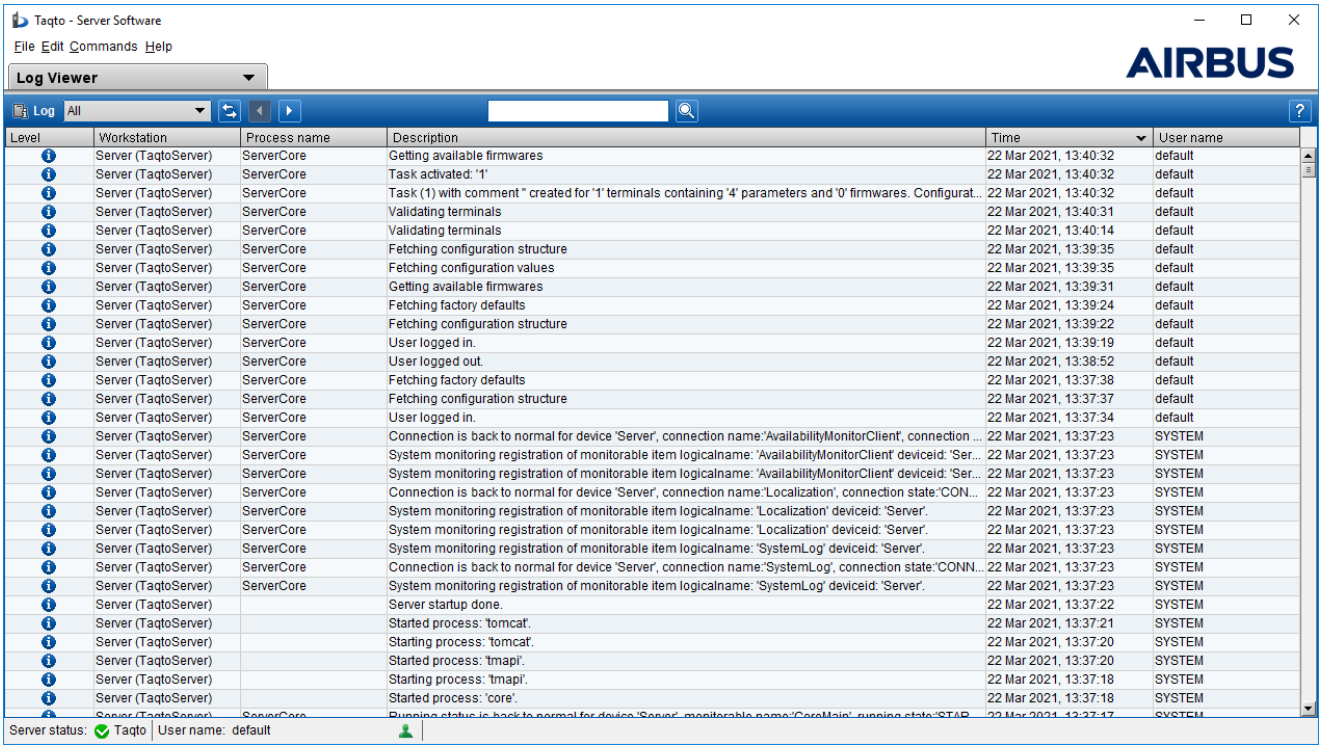


Figure 65 Main view of the Log Viewer application

The information shown in the Log Viewer application is listed in Table 33.

COLUMNS	DESCRIPTION
Level	The level of the log message
Workstation	The name and the IP address of the source workstation for the log event
Process name	The name of the Taqto process sending the log event
Description	A short automatic description about the Taqto Server's operation
Time	The time when the message has been sent. The tooltip shows the time when the message has been received.
User name	The name of the user or system

Table 33 Log table in Log Viewer application

Select the Workstation whose logs you want to see in the toolbar.

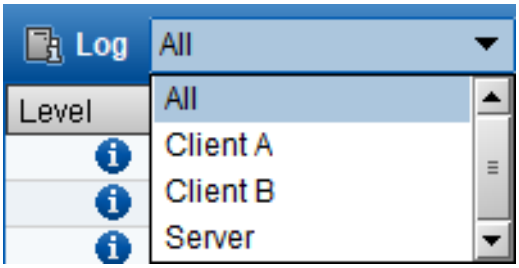


Figure 66 Selecting a Workstation in the Log Viewer application

The content of the log table is not updated automatically. To update the information, click the **Refresh** button or select **Commands** -> **Refresh**.

Use the **Search** field and the **Find** button in the toolbar to make a search for a log entry. Log entries matching the search criteria are highlighted in the Log view.

Use the **Previous** and **Next** buttons to view older and newer logs on the UI. The **Previous** and **Next** actions are also available in the **Commands** menu.

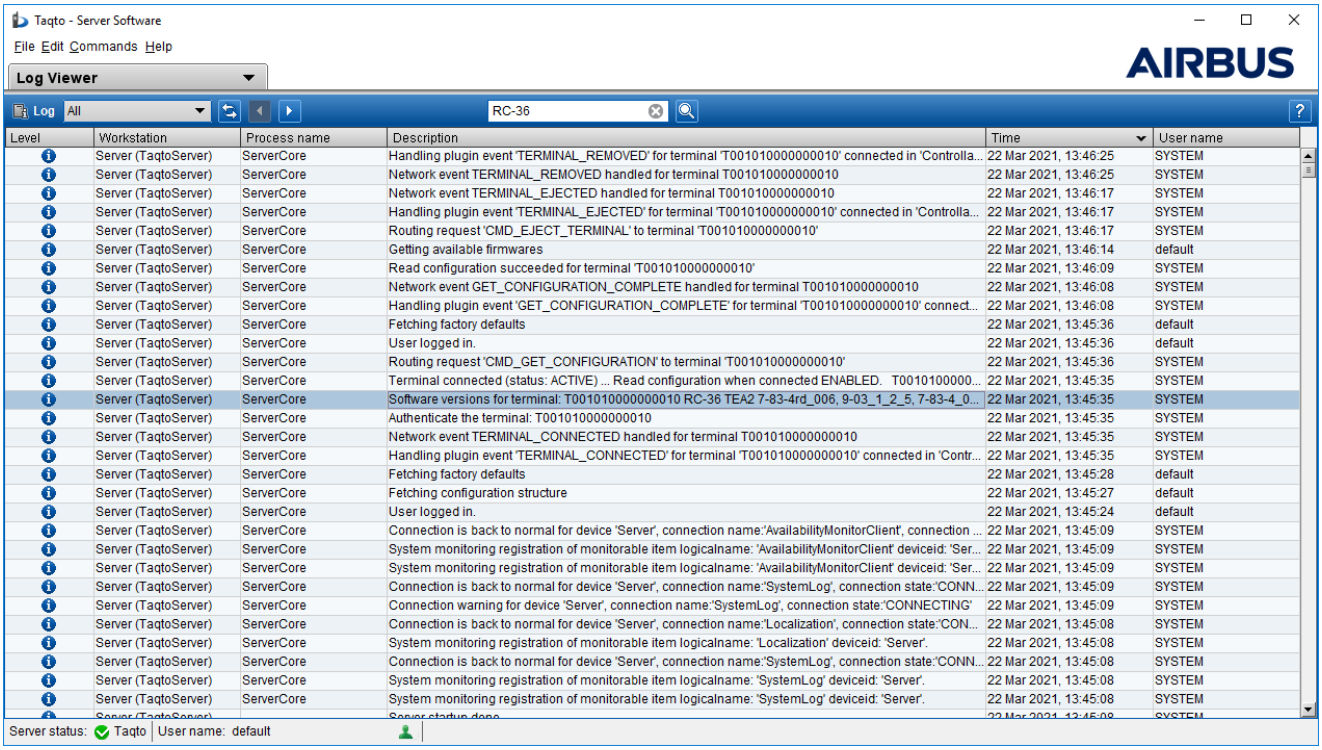


Figure 67 Using the search field in the Log Viewer application

You can also delete logs in the table as follows:

1. Select **Commands** -> **Clear logs**
2. The **Clear logs** window opens.

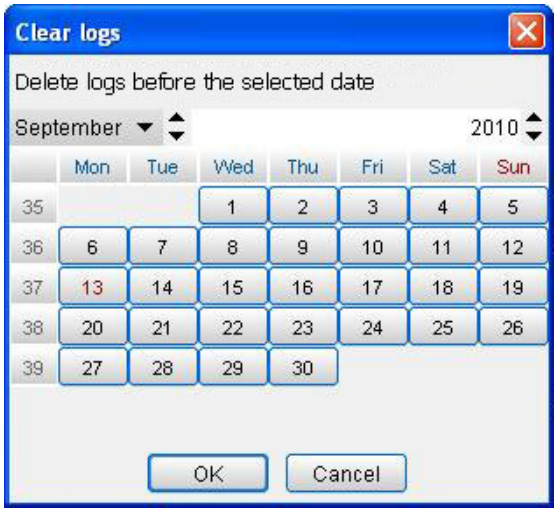


Figure 68 Clear logs window

3. Select the date. The logs dated the selected day and before will be deleted.
4. Click **Ok** and refresh the table of the logs.

Logs on the UI can be exported to file:

1. Select **Commands -> Export**.
2. Input the filename and press **Save**.

Backing up/restoring the Taqto Server database

The administrator of the Taqto Server Software can create a backup file of the Taqto Server database. The file can be made using the command line.

To create the file, proceed as follows:

1. Close all the open Taqto Software applications. The service must NOT be running while making the backup file.
2. Open the command line tool: select **Start** -> **Run** -> **cmd**, and click **Ok**.
3. Open the Taqto Server Software folder: `C:\Program Files(x86)\Cassidian\Taqto Software`.
4. Run the command: `jre_x64\bin\java -jar taqto\TaqtoBackup.jar --backup Taqto_backup`.
5. The PIN code of the Taqto smart card (of the administrator) is requested. Enter the code and click **Enter**.
6. The Taqto Server makes a backup file `Taqto_backup to Taqto Software` folder.
7. Copy/move the backup file to the desired directory.

Note: When creating a new backup file, the old one is overwritten if it exists in the same location.

Note: When Taqto backup is restored, command prompt with admin rights is required to be used in order to have proper Windows access rights to perform this restore.

To restore the Taqto Server database, proceed as follows:

1. Close all the open Taqto Software applications. The service must NOT be running while restoring.
2. Open the command line tool: select **Start** -> **Run** -> **cmd**, and click **Ok**.
3. Open the Taqto Server Software folder: `C:\Program Files(x86)\Cassidian\Taqto Software`.
4. Run the command: `jre_x64\bin\java -jar taqto\TaqtoBackup.jar --restore Taqto_backup`.
5. The PIN code of the Taqto smart card (of the administrator) is requested. Enter the code and click **Enter**. The Taqto Server database is restored.

Log files of Taqto Server Software

The log files of the Taqto Server Software can be found in `C:\Program Files (x86)\Cassidian\Taqto Software\logs`. If you want to take a backup of the log files, you can copy the files to another location.

If you want to save a particular error message or a log text in the User Interface of the Taqto Server Software, you can highlight the text, copy it and paste it wherever you need it.

Database maintenance tool

The Taqto database maintenance tool can be used to optimise the Taqto database performance. The tool is provided as a separate Windows command prompt tool, which must be run in the Taqto installation directory (`C:\Program Files (x86)\Cassidian\Taqto Software`).

The following database maintenance commands are available in the tool:

- Help
  - Run the command: `jre_x64\bin\java.exe -jar taqto\DatabaseMaintenance.jar`
  - Command lists the instructions of the other available commands.
- Vacuum full analysis
  - Before using this command, close Taqto and stop the Taqto service.
  - Run the command: `jre_x64\bin\java.exe -jar taqto\DatabaseMaintenance.jar --full`

Note: Running this command requires that there is as much free hard disk space available as the size of the Taqto database. You can check the size of the Taqto database from the Taqto server configuration details in the System Management application.

- Analyze
  - Run command: `jre_x64\bin\java.exe -jar taqto\DatabaseMaintenance.jar --analyze`

- Vacuum
  - Run the command: `jre_x64\bin\java.exe -jar taqto\DatabaseMaintenance.jar --vacuum`

4. TAQTO CLIENT SOFTWARE

Introduction

The Taqto Client Software is intended for the terminal users. The terminal users may not have the Taqto terminal administration rights, and therefore they cannot modify the parameters or any information in the Taqto Client software.

The terminal users can observe the status of their terminals or their group terminals if the terminal status is new, connected, or programmed.

Starting up

To start the Taqto Client Software in your desktop or Windows, select **Start** -> **All Programs** -> **Airbus DS** -> **Taqto Software** -> **Taqto** -> **Client Software**.

The Taqto Client Software authenticates itself with the Taqto Server Software before starting up. The software User Interface is shown after the authentication.

First login

When you start the Taqto Client Software for the first time, enter the user name and the password and click the **Login** button. You will also have to enter the user name and password if you have logged out or if the login information is no longer valid. The Taqto Client Software User Interface in shown (see Figure 69).

Note: The administrator is not able to log in to the Taqto Client Software.

Note: The user name, the password, and the language are asked only when logging in for the first time. Later on, the User Interface of the Taqto Client Software opens automatically. Note that you cannot change the language that you have selected when logging in for the first time. To change the language, you must log out, change the language, and then log in again.

Note: The user must have at least the System Management rights, System hardware level parameter rights, or Terminal connection monitor rights to use the Taqto Client Software.

Figure 69 Login for the first time in theTaqto Client User Interface

Main User Interface

The Taqto Client Software displays a list of all the connected terminals and devices in the client workstation (see Figure 70).

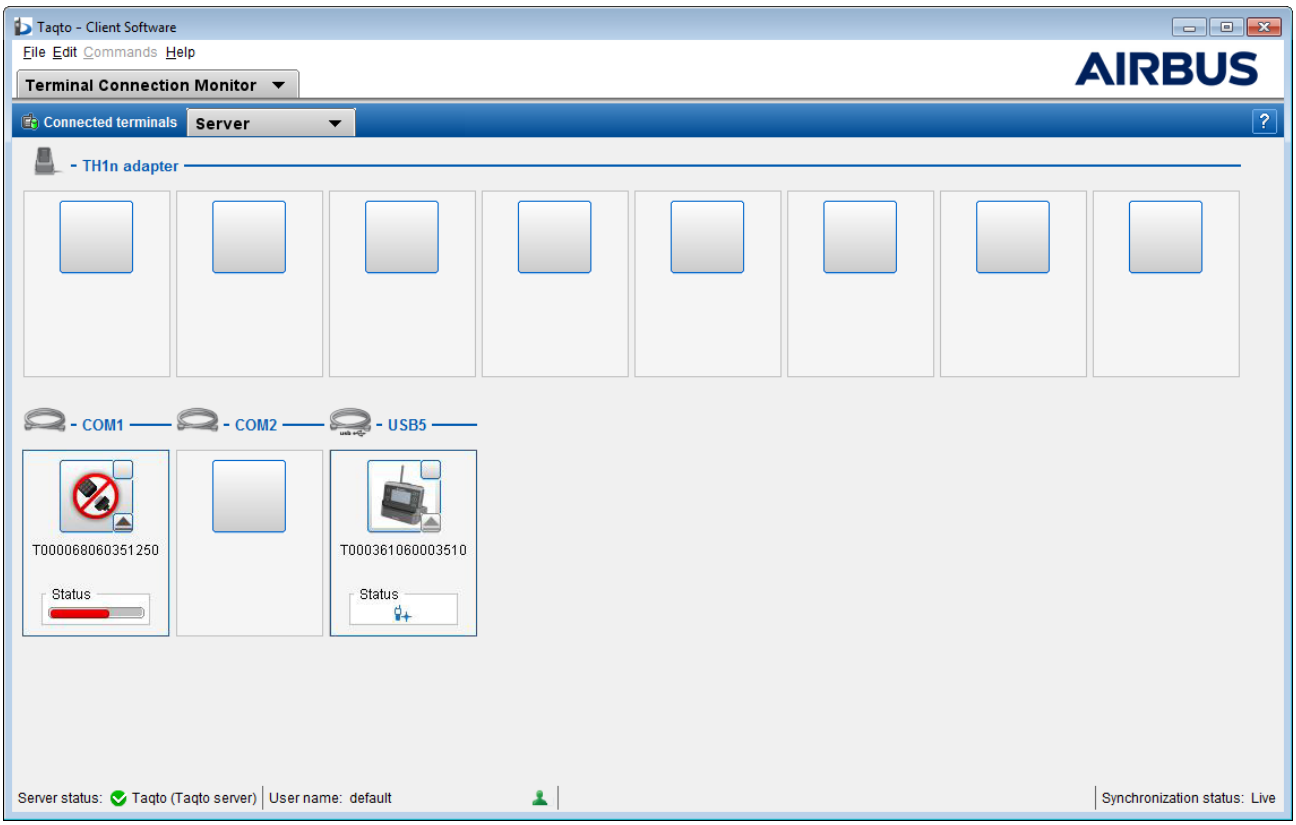


Figure 70 Main view of the Taqto Client User Interface

MENU	FUNCTION	DESCRIPTION
File	Exit	Used to close and exit the Taqto Client Software
Help	Help contents About Taqto	Used to open the Help document of the Taqto Software Shows information on Taqto Client Software

Table 34 Taqto Client Software, main menu functions

The main view of the Taqto Client Software is divided into two areas:

- **Connected terminals**
- **Status bar**

Connected terminals view

The **Connected terminals** view lists all the connected terminals with the information shown in Table 35 below the terminal.

TEXT	DESCRIPTION
Terminal	The unique ID number of the terminal
Terminals user's name	The name of the person who uses the terminal
Status	The connection status of the terminal

Table 35 Connected terminals view of the Taqto Client Software

Status bar

The **Status bar** contains information on status of the Taqto Client Software and on error situations in the Taqto system.

The status bar also shows information on the user that has logged in to the Taqto Client application.

Terminal Status

The status of the terminal is indicated with the color codes of the progress bars as well as status icons shown in Columns in the Terminal database view in the Terminal Management application on page 67. There is also an icon  to indicate that a process is ongoing, and the terminal should not be disconnected.

Showing the terminal information

To show the information of a terminal, proceed as follows:

1. Click the complete radio terminal button  in the **Connected terminals** view.
2. The terminal details are shown in a separate window.

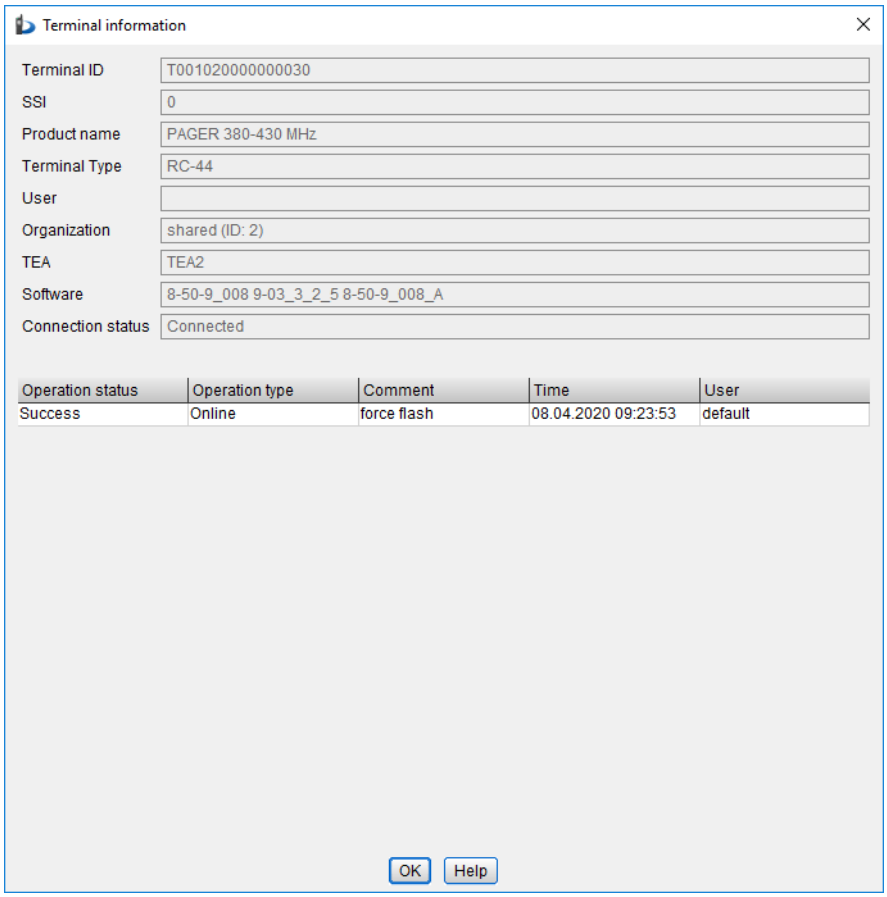


Figure 71 Terminal information in Taqto Client Software

MENU	DESCRIPTION
Terminal ID	The unique ID number of the terminal (TEI in TETRA)
SSI	The subscriber identity
Terminal model	The name/model of the terminal, for example, THR880i, THR9
User	The user name of the terminal defined in the Taqto Server Software
Organization	The name of the organization of the user/terminal in the Taqto Server Software
TEA	An algorithm, a security setting
Software	The software version of the terminal

Identifying the terminal

To identify a terminal, proceed as follows:

1. Click the embedded button in the upper right corner of the terminal icon  in the **Connected terminals** view.
2. The LED starts blinking in the terminal and the terminal adapter where the terminal is inserted. For information about the LED indicators, see Programming a terminal on page 78.

Ejecting the terminal

Terminal that is connected to the Taqto system can be also **ejected** from the Taqto system. This eject functionality puts terminal in the normal mode and to service.

To eject a terminal, proceed as follows:

1. Click the embedded button in the lower right of the terminal icon  in the **Connected terminals** view.
2. Radio terminal is ejected, the terminal button is updated  and the eject button is disabled in the Client UI.

   Also the status information related to this radio terminal is updated as follows 

.

Viewing the terminal errors

To view the terminal configuration errors, proceed as follows:

1. Click the **Error** button  below the terminal.
2. An error history is displayed with the details shown in Table 36.

COLUMN	DESCRIPTION
Source	Gives the incorrect parameter
Path	Gives the path of the parameter
Description	A short description of the error

Table 36 Terminal errors in the Taqto Client Software

To view the last terminal operation related errors and warnings, proceed as follows:

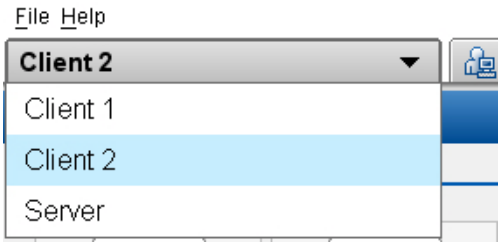
1. Click the **Warning** button  below the terminal.

More detailed information on the last operation related warning is displayed.

Selection of the Client UI

Taqto allows showing both local and remote client's status information in the Client UI. To select the visible Taqto client UI, proceed as follows:

1. Click the Client UI selection dropbox to select a client UI to be shown.



2. Click the local Client selection button  to return to the local client UI.

5. K-TAQTO SERVER AND CLIENT SW

Purpose of K-Taqto

The K-Taqto Solution is an extension on the Taqto system, where TETRA authentication keys can be generated, programmed and managed.

The main features of the K-Taqto Solution are listed in the following table.

FEATURE	K-TAQTO SERVER SOFTWARE	K-TAQTO CLIENT SOFTWARE
Setting of K-key parameters of the radio terminals	X	
Multi-parametering of K-key up to 32 terminals as a single task	X	X
The software runs on a standard desktop or laptop computer using Windows 10 operating system.	X	X
Quick check of the status of the terminals connected to the Taqto Software	X	X
Possibility to manage users for K-key management	X	
A history of updates for each terminal when new software versions and parameter configurations have been downloaded to the terminals.		X
Additional features: connection management, system monitoring and self- diagnostics, event and error logging	X	

Table 37 Main features of the K-Taqto Solution

K-Taqto server software

From the basic functionality point of view, the K-Taqto Software is similar to the Taqto software, however, it provides features and functionality applicable only for K-key Management related actions.

The help for the following basic features can be found elsewhere in this User Guide.

FEATURE	REFERRED IN CHAPTER
Main menu functions	Main menu functions on page 22
Changing the password	Changing the password on page 29
Access to available applications	Applications on page 30
K-Taqto system management	System Management on page 30
Adding clients and device management hardware	Multiple chapters, starting from page 20
Managing of firmware packages and configuration files.	on page 44
Managing Taqto users	User Management on page 51
Managing terminals	Terminal Management on page 64

Table 38 Help for basic features

Note: K-Taqto does not support radio terminal SW upgrades, but allows only K-key related configuration management in a terminal.

K Management

The K Management application is split into two sub-applications: K-key Management and K-REF Management. The K-key Management application includes all features for managing K-keys and K-key files. The actual K-key is programmed to terminals in the Terminal Management application. The K-REF Management application has all features for managing the K-REF transfer between Taqto® and TETRA infrastructure.

K-key Management

The K-key Management sub-application provides features both for managing the K-key files as well as for K-key database management.

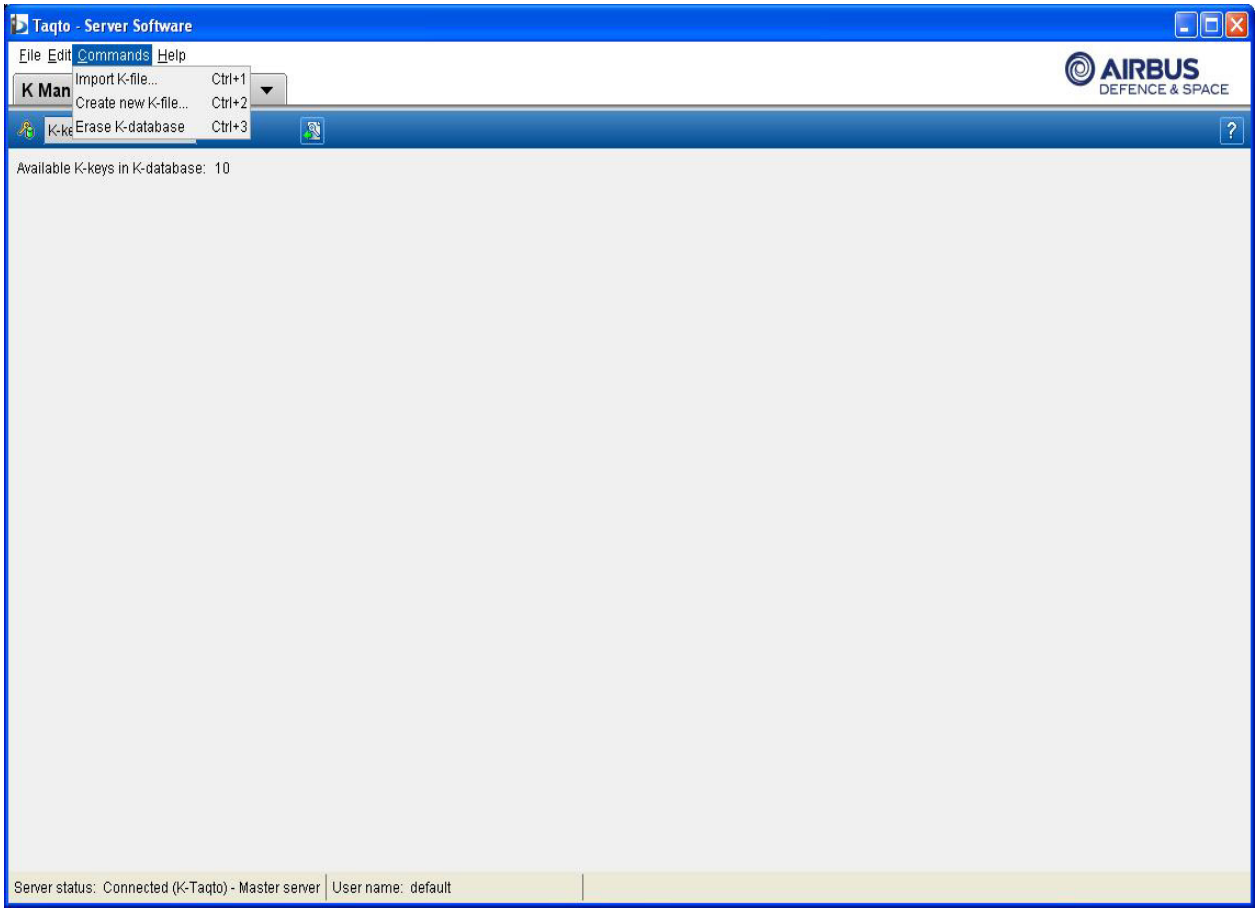


Figure 72 K management, K-key management application

Importing K-file

The K-Taqto application can use previously generated K-key values through an imported K-key files. These files can be imported as follows:

1. Click the **Import K file**… button  or select the **Import K-file ….** Menu.
2. Browse the file to be imported and select whether these K values are imported in the beginning of the K database or in the end of K database.

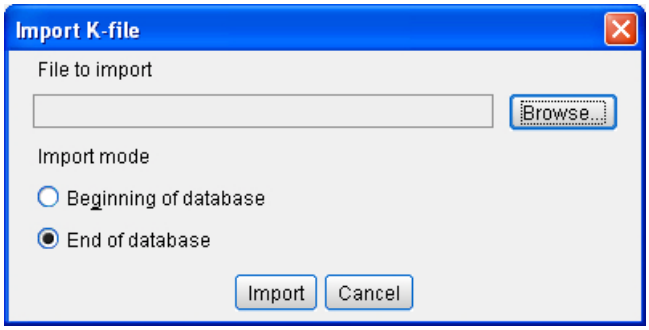


Figure 73 K-file import window

3. Click **Import**  button.

4. The imported K values are added to the K database, and the amount of K values is increased in the upper left corner of the K-key Management view.

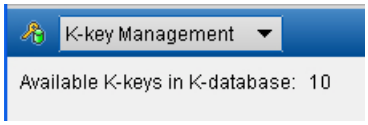


Figure 74 Number of K values in the K database

Creating new K-file

The K-Taqto application allows also generation of new K-values to a new K -file. These key can be generated as follows:

1. Select the **Create new K-file …** menu.
2. Name and browse the file to be generated, and define how many K-keys are to be generated to this file.

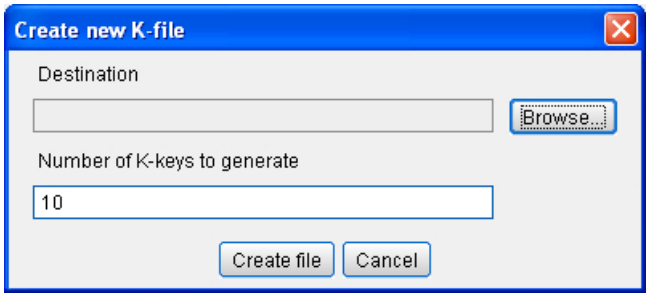
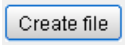


Figure 75 K-file generation window

3. Click **Create file**  button.

4. A new K-key file is generated and can be imported then to K-database.

Erasing K-database

The existing K-key database can be removed by selecting **Erase K-database** menu. When doing this, all K values in the K-database are deleted.

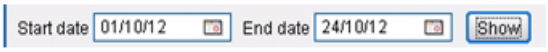
K-REF management

The K-REF Management sub-application provides features to review, report, and export K-REF information in the Taqto system.

K-REF reporting

The K-REF information can be reported as follows:

1. Define the programming date range for K-REFs to be reported by defining the **Start date - End date** range in the K-REF Management windows.
2. Show the programmed K-REFs in the selected date range by clicking the **Show** button.

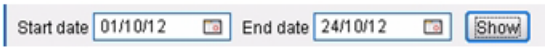


3. Hide the K-REFs not to be included in the export by selecting them in the K-REF list and by clicking the **Hide selected REFs**  button.

K-REF exporting

The K-REF information can be exported as follows:

1. Define the programming date range for K-REFs to be exported by defining the **Start date - End date** range in the K-REF Management windows.
2. Show the programmed K-REFs in the selected date range by clicking the **Show** button.

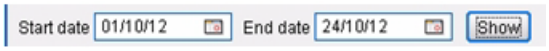


3. Hide the K-REFs not to be included in the export by selecting them in the K-REF list and by clicking the **Hide selected REFs** 

button.
4. Export the selected K-REFs by selecting the menu item **Commands - Export K-REFs**.
5. Define the export file name and select the export file format from the **Files of type** drop box.
6. Click the **Save** button.

K-REF removing

1. Define the programming date range for K-REFs to be reported by defining the **Start date - End date** range in the K-REF Management windows
2. Show the programmed K-REFs in the selected date range by clicking the **Show** button



3. Select the K-REFs that are to be deleted.
4. Delete the selected K-REFs by selecting the menu item **Commands - Delete K-REFs**.
5. Click **Yes** to approve the deletion of the K-REFs.

6. TROUBLESHOOTING

Taqto service cannot be activated

Is the Taqto database already running?

Open the Windows **Task Manager** -> **Processes**. Check if the Taqto database is already running in the background. The process is `postgres.exe`. End these database processes, and try to activate the Taqto service again.

Is the name of the license file right and have you put it in the correct location?

The license file should be saved to the same location with the Taqto Software in the Taqto Software workstation (`C:\Program Files (x86)\Cassidian\Taqto Software`). You can also use the advanced login dialog to add the license file. The name of the file must always be license or `license.txt`. You will receive the license file as a file attachment in a e-mail from Airbus DS SLC security logistics upon to your order.

Are the smart card and the license file compatible with the software version?

Check that the smart card and the license file are compatible with the software version installed on your PC. You can find the possible errors related to the incompatibility in the log file in the directory `C:\Program Files (x86)\Cassidian\Taqto Software\logs`. For a new smart card or a license, please, contact the customer service of TETRA terminals.

Has the Taqto smart card been inserted correctly?

Check that the smart card has been correctly inserted into the smart card reader, the chip down and towards the front cover.

Is the following error dialog shown during Taqto service start-up?

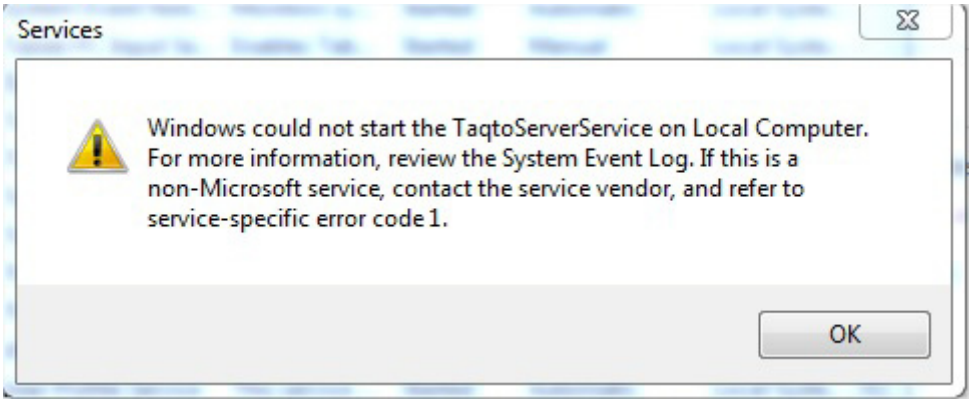


Figure 76 Windows could not start the TaqtoServerService error dialog

The incident can be found in the Tacto logs (`C:\Program Files (x86)\Cassidian\Taqto Software\logs`) by searching for the following entry:

Service received control code "5"

Try to rebuild Windows performance counters by running the following command in Windows command prompt.

```
lodctr /r
```

Unable to log in to the Taqto Software

Is the Login window active?

If the Login window of the Taqto Server Software is not active, check that the service is correctly activated and running. Open the Windows **Task Manager** -> **Processes**. You should find the `TaqtoService.exe` in the list of the processes.

Check the firewall and windows UAC settings if the service is running, but the dialog is still grayed out.

You can also check that the port required by Taqto is not taken by another software by running `netstat -a` from the command prompt when Taqto is not running.

Have you forgotten your password?

If you have forgotten your password, please, contact your administrator.

If the administrator forgets his password, the Taqto Software must be reinstalled to allow to use the default password.

Have you taken into account all the necessary login requirements?

When logging in to the Taqto Server Software as an administrator, you must check the check box **Administrator login** and enter the valid PIN code. In other cases, the checkbox must not be checked. Note also that the administrator is not able to login in to the Taqto Client software.

Have you forgotten the PIN code of the smart card?

A blocked PIN code can be unblocked with `ScUtility.exe` available in Taqto installation folder `C:\Program Files(x86)\Cassidian\Taqto Software\bin\Win32\`. Enter the following command to unblock the PIN: `ScUtility.exe unblock`. The PUK code will be required for this operation.

Terminal Management cannot recognize the terminal

Have you loaded the required firmware file?

The Taqto Server Software can recognize the terminal only if the software version of the terminal also exists in the list of the firmware files in the **Configuration Management** application. You can show the software version of the terminal by typing *#0000# when the terminal is in the IDLE-mode, or in the case of Tactilon Dabat you can check the software version from the **Settings** -> **About phone**. Import the correct firmware file, if it is missing.

Have you connected correctly all the required devices?

Check that all the connections of the devices and the cables are connected correctly. For more information, see section System Management on page 30.

When using the 8-slot adapter, is the connection switch in the right position?

When connecting with one 8-slot adapter, the connection switch must be in position 0 (zero). Also make sure that the IO controller cable is properly connected and firmly attached to the adapter. For more information, see Table 4.

Is the flashing box running correctly?

Check the connection between the PC and the flashing box. The display of the flashing box tells you the status of the connection. If the connection has not been established, check the serial number in system management and boot the flashing box.

The PC does not find drivers for the IO control cable / The System Management does not recognize the adapter

If the PC cannot find drivers for the IO control cable, the System Management is not able to recognize the adapter even if the IO control cable is connected to the Taqto Software.

Install the *uscable.inf* driver file from `C:\Program Files (x86)\Airbus\Taqto Drivers\IOCable\install`. Execute the `dpinst-amd64.exe` file in the folder where it is located.

This error occurs, for example, if the IO control cable is installed to the PC before installing the Taqto Software.

Is ADB running while trying to connect Android device?

In the case you have ADB server running, it must be stopped before connecting the Android device to Taqto. This can be done by running the command `adb kill-server` from the command prompt, or by terminating the service from Windows services.

The operating system does not recognize the flashing box (prommer)

Have you connected correctly the devices?

Check that all cables are connected correctly (see System Management on page 30), and boot the flashing box.

Unable to find the drivers for the flashing box (prommer)

Have you installed the drivers for the flashing box?

If the drivers of the flashing box are missing, you can install them manually. For that, proceed as follows:

1. Select **Start** -> **Control panel** -> **System and security**-> **Device manager**.
2. Select **Nokia Flash Programming Devices**, and open the options of **FPS-21 Prommer**.
3. Select the page **Drivers** and click the **Update driver** button.
4. In the option **Can Windows**, connect to **Windows Update** to search software.
5. Select **No, not this time**.
6. Click **Next>**.
7. In the option: **What do you want the wizard to do**, select **Install from a list of specific location (Advanced)**.
8. Click **Next>**.
9. When selecting the search and installation options, select **Don't search. I will choose the driver to install**.
10. Click **Next>**.
11. Select the recommended driver to be installed. If there are no drivers suggested:
    - Click **Have disk**.
    - Follow the path: `C:\Program Files\Common Files\Nokia\Tss\Communication API\drivers\fpsx`
    - Click **Ok**.
12. Click the **Next>** button.
13. Click **Finish**.

Parametering or flashing operation fails

Have you loaded all required firmware files?

The Taqto Server Software is able to recognize the terminal only if the software version of the terminal exists also in the list of firmware files in the **Configuration Management** application. You can show the software version of the terminal by typing *#0000# when the terminal is in the IDLE mode, or in the case of Tactilon Dabat you can check the software version from **Settings** -> **About phone**.

When flashing a new software to the terminal, both the old software version and the new software version must be found in the **Configuration Management** application.

Import the correct firmware file(s), if needed.

Have you connected correctly all the required devices?

Check that all the connections of the devices and the cables are connected correctly. For more information, see section System Management on page 30.

Is the flashing box running correctly?

Check the connection between the PC and the flashing box. The display of the flashing box gives you the status of the connection. If the connection is not established, boot the flashing box.

Has the smart card of the flashing box been inserted correctly?

Check that the smart card has been inserted correctly into the flashing box, the text side up. It is recommended that you restart the flashing box after inserting the SX-4 card.

Is the smart card of the flashing box locked?

Check that the user has typed correctly the PIN code of the flashing box in the flashing box settings.

Have you the user rights for parametering/flashing?

The administrator can define whether the user has the rights to parameter/flash terminals. Please, contact your administrator.

Has parametering/flashing been enabled in the license file of the Taqto Server Software?

The license file of the Taqto Server Software defines whether the parametering/flashing is allowed or not. Check that the license file is correct. Check also the expiration time of the license. For more information, contact the customer service of TETRA terminals.

The Taqto service is missing from the service list of the Windows

You can find a list of available services in the Windows operating system by following the steps below:

1. Move the pointer over **My computer** and click the right mouse button.
2. Select **Manage** -> **Services and Applications** -> **Services** -> **Taqto Service**.

If the Windows does not recognize the Taqto Service after you have installed the Taqto Software:

1. Open the command line tool: select **Start** -> **Run** -> **cmd**, and click **Ok**.
2. Run the command: `sc create TaqtoServerService binParth= "C:\Program Files(x86)\Cassidian\Taqto Software\TaqtoService.exe`.
3. Check that the service has been created to the service list.
4. Start the Taqto service normally. For more information, see Chapter Preparing the Taqto Solution for Use in the document *Taqto - Smart Terminal Management Solution - Installation Handbook*.

The terminal does not register to the network

Has the transmission barring been switched off in the terminal?

Select **Settings** -> **Phone settings** -> **Transmission barring parameter**, and check that the Transmission barring parameter is in "switched off" state in the terminal menu.

Opening terminal configuration for hundreds of terminals takes a long time

When multiple terminals are configured simultaneously, there may be differences in the existing configurations of these terminals. Since Taqto User Interface provides this information of different parameter values to the Taqto end users, it needs to analyses the above mentioned differences while opening this configuration application.

This calculation may take some time, but does not mean that Taqto system has stopped working.

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