



**zenon**  
by COPA-DATA

# zenon manual

## Shift Management

v.8.10

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# 1 Welcome to COPA-DATA help

## ZENON VIDEO-TUTORIALS

You can find practical examples for project configuration with zenon in our YouTube channel ([https://www.copadata.com/tutorial\\_menu](https://www.copadata.com/tutorial_menu)). The tutorials are grouped according to topics and give an initial insight into working with different zenon modules. All tutorials are available in English.

## GENERAL HELP

If you cannot find any information you require in this help chapter or can think of anything that you would like added, please send an email to [documentation@copadata.com](mailto:documentation@copadata.com).

## PROJECT SUPPORT

You can receive support for any real project you may have from our Support Team, who you can contact via email at [support@copadata.com](mailto:support@copadata.com).

## LICENSES AND MODULES

If you find that you need other modules or licenses, our staff will be happy to help you. Email [sales@copadata.com](mailto:sales@copadata.com).

# 2 Shift Management

**Shift management** allows you to plan and manage shifts centrally in zenon Runtime. The planning can be manual or automatic. You get an overview of planned and expired shifts, including in conjunction with equipment groups too. Shift information can be used in other modules to filter information. For example, alarms or entries in the CEL can be displayed regardless of certain shifts.

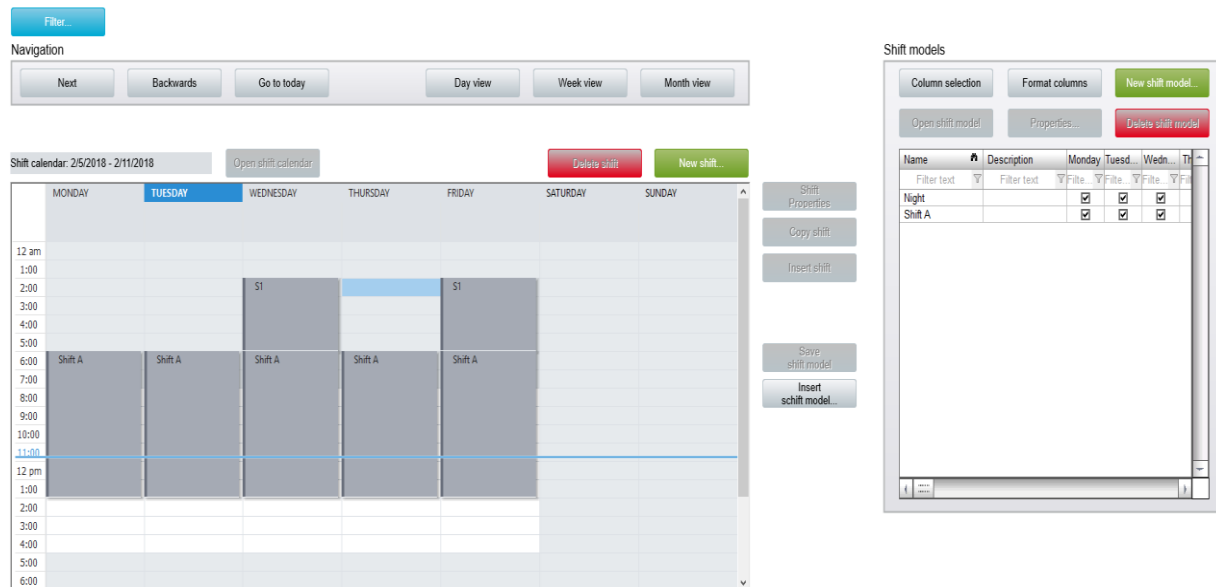


### Information

This module is not available in global projects and CE projects.

## SHIFT MANAGEMENT OVERVIEW

Shift management is called up and configured as a screen in the Runtime. The clear overview is orientated to the usual calendar elements from office programs.



You can do the following locally and in the network with the help of Shift Management:

- ▶ Create and apply shift models:  
Shift models serve as a template and form one or more shifts as a model. Pre-defined shifts can thus be added in the calendar.
- ▶ Create shifts:  
Shifts can also be entered and configured individually in the calendar.
- ▶ Manage shift times:  
Shifts that have been entered can be amended or removed at any time.
- ▶ Link shifts to equipment modeling:  
Shifts can be linked to equipment groups. This allows simple filtering for certain parts of equipment or production areas.
- ▶ Export shifts to SQL:  
All shifts can be exported to SQL via a zenon function and thus continue to be used in other programs.
- ▶ Use shifts for alarming via **Message Control** (on page 58):  
zenon users who are assigned to a shift can be notified via **Message Control**.

Configuration and maintenance can also be carried out with the zenon API.

## 3 Terminology

Term	Definition
<b>Shift Management</b>	A module in zenon for the modeling and organization of shifts.
<b>Shift</b>	Represents the course of an individual working unit. This also contains more in-depth information, such as a free-text name and description, assignment to the equipment model and user administration, as well as breaks.
<b>Break</b>	Shifts can contain breaks to show an interruption to productivity.
<b>Shift model</b>	Represents the mode of a recurring configuration of shifts, such as "2-shift operation" or "3-shift operation". To do this, the shift model combines at least one or more shifts. In addition, the shift model contains more in-depth information, such as a free-text name and description.
<b>Shift calendar</b>	Is a visualization component for selective display in zenon. It allows, among other things, the creation and editing of shift occurrences.
<b>Staff</b>	Is the people selected for a shift.

## 4 Configure Shift Management

Shift Management is operated in the Runtime using *Shift Management* screens.

To be able to display and manage events in the Runtime, the following must be configured in the Editor:

- ▶ A *Shift Management* screen (on page 8). (on page 8)
- ▶ A screen switch (on page 14) to this screen

This screen is called up and configured in the Runtime.

## 4.1 Creating a screen of the type Shift management

### CREATING A SCREEN OF THE TYPE SHIFT MANAGEMENT

#### ENGINEERING

Two procedures are available to create a screen:

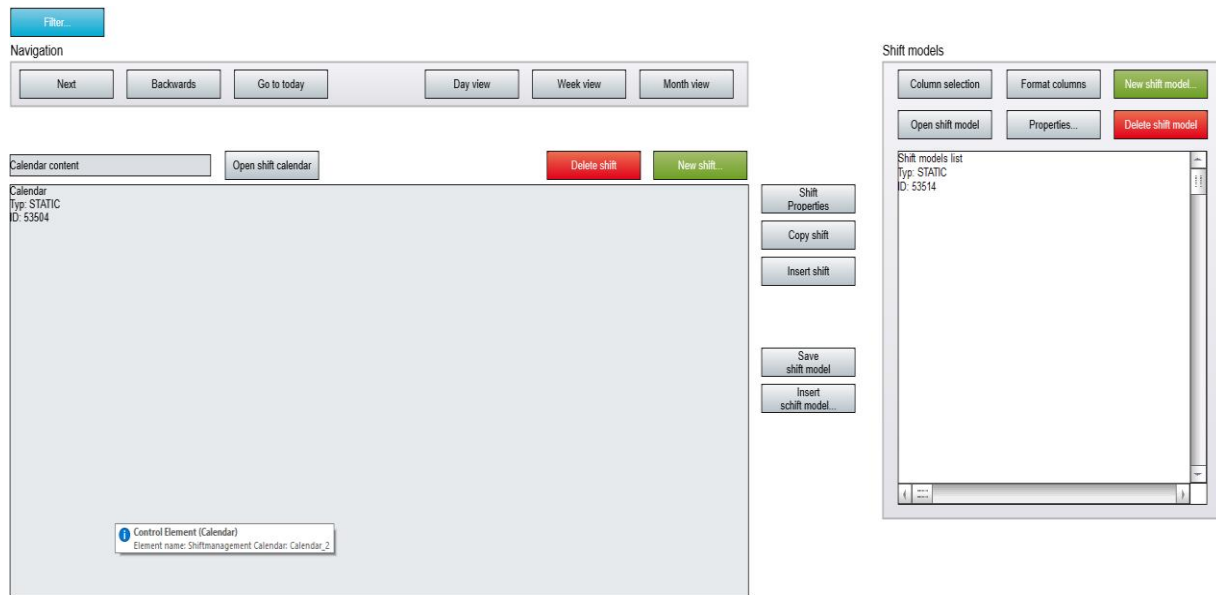
- ▶ The use of the screen creation dialog
- ▶ The creation of a screen using the properties

Steps to create the screen using the properties if the screen creation dialog has been deactivated in the menu bar under **Tools, Settings** and **Use assistant**:

1. Create a new screen.  
To do this, select the **New screen** command in the tool bar or in the context menu of the **Screens** node.
2. Change the properties of the screen:
  - a) Name the screen in the **Name** property.
  - b) Select *Shift management* in the **Screen type** property.
  - c) Select the desired frame in the **Frame** property.
3. Configure the content of the screen:
  - a) Select the **Elements (screen type)** menu item from the menu bar.
  - b) Select *Insert template* in the drop-down list.  
The dialog to select pre-defined layouts is opened. Certain control elements are inserted into the screen at predefined positions.
  - c) Remove elements that are not required from the screen.
  - d) If necessary, select additional elements in the **Elements** drop-down list. Place these at the desired position in the screen.



4. Create a screen switch function.



## 4.2 Control elements

### INSERT TEMPLATE

Parameter	Description
<b>Insert template</b>	<p>Opens the dialog for selecting a template for the screen type.</p> <p>Templates are shipped together with zenon and can also be created by the user.</p> <p>Templates add pre-defined control elements to pre-defined position in the screen. Elements that are not necessary can also be removed individually once they have been created. Additional elements are selected from the drop-down list and placed in the zenon screen. Elements can be moved on the screen and arranged individually.</p>

### CONTROL ELEMENTS

Element	Description
<b>Filter</b>	Opens the dialog (on page 14) with the filter

Element	Description
	settings for screen switching.
Calendar	Calendar module that shows the calendar with the shifts or a shift model in the Runtime.
Calendar content	Text element that shows the currently-displayed data range of the shift calendar in the Runtime.

## SHIFTS

Element	Description
New shift	Opens the dialog (on page 41) to create a new shift.
Delete shift	Deletes the selected shift. Multiple selection is possible with the <b>Control key</b> .
Shift properties	Opens dialog for editing the selected shift.
Copy shift	Copies the selected shift.
Insert shift	Pastes a copied shift from the clipboard into the selected day.

## APPLY SELECTION

Element	Description
Apply selection	Applies selected shifts and uses these on other screens as a filter (on page 67). These screens must be selected in the screen switching in the Screens tab.

## SHIFT CALENDAR

Element	Description
Open shift calendar	Opens the shift calendar.  Only available if a shift model is displayed in the calendar.
Insert shift model	Opens the dialog (on page 53) to paste a shift model into the shift calendar.

## NAVIGATION

Element	Description
<b>Forwards</b>	Goes one element forward in the calendar according to the entered value (one day, one week or one month).
<b>Backwards</b>	Goes one element back in the calendar according to the entered value (one day, one week or one month).
<b>Day view</b>	Shows the selected day in the calendar.
<b>Week view</b>	Shows the selected week in the calendar.
<b>Month view</b>	Shows the selected month in the calendar.
<b>Go to today</b>	Shows the current day in the calendar.

## SHIFT MODELS

Elements	Description
<b>Shift models list</b>	List of existing shift models.
<b>Column selection</b>	Opens the dialog (on page 19) to select the columns to be displayed in the list.
<b>Format columns</b>	Opens a dialog (on page 20) to format the columns.
<b>New shift model</b>	Opens the dialog (on page 63) for creating a shift model.
<b>Open shift model</b>	Changes the calendar view to the display of shift models and opens the selected shift model there.
<b>Save shift model</b>	Saves the shift model opened in the calendar.  Only available if a shift model is open in the shift calendar and there are unsaved changes.
<b>Delete shift model</b>	Deletes the selected shift model after a confirmation message.
<b>Properties</b>	Configuration of the properties of the shift model: Name and description

## 4.3 Amend the appearance of the calendar

You can amend the appearance of the calendar using the properties of the **Calendar** control element.

### 4.3.1 Calendar properties

#### COLORS FOR WORKING TIME AND WORK-FREE TIME

To configure the colors for working time and work-free time:

1. Click on the calendar element in the Editor.
2. Select the **Fill** group in properties.
3. Configure the color for work-free time using the **Fill color non-working time** property. Clicking on button ... opens the dialog for selecting a color.
4. Configure the color for working time using the **Fill color Working Time** property. Clicking on button ... opens the dialog for selecting a color.

## 4.4 Bank holidays

National holidays are shown in the calendar accordingly:

- ▶ Color: The coloring of a national holiday corresponds to the color of the work-free time.
  - ▶ Day and week view: The coloring of a national holiday corresponds to the color of the work-free time.
  - ▶ Month view: No coloring.
- ▶ Name:
  - ▶ Day and week view: The name of the national holiday is shown instead of the day of the week.
  - ▶ Month view: The name of the national holiday is shown instead of the date.

The language of national holidays can be switched.

National holidays can be taken into account in the configuration of the shift models (on page 63) using a checkbox.

#### CONFIGURE DAYS

Country-specific national holidays can be pre-set for shift calendars.

Configuration is carried out in the Editor using the **Shift Management/National holidays** project property. The settings selected here are always applicable for the respective project.

CONFIGURATION

To configure national holidays:

- 1. Navigate to the **Shift Management** node in the project properties.
- 2. Click on the **National holidays** property  
The **National holidays** dialog to select a country is opened.
- 3. Select the desired country.
- 4. Click on **OK**.

The selected country is saved in the **project.ini** file. The national holidays of the selected country are entered into the shift calendar in the Runtime.

To remove national holidays, select the *None* entry.

NATIONAL HOLIDAYS DIALOG



Option	Description
List of countries	<p>Selection of a country from the list.</p> <p>The national holidays of the selected country are entered in the calendar by clicking on <b>OK</b>.</p> <ul style="list-style-type: none"><li>▶ <i>No selection:</i> No national holidays are entered. Pre-existing national holidays are removed.</li></ul>

## CLOSE DIALOG

Options	Description
OK	Applies settings and closes the dialog.
Cancel	Discards all changes and closes the dialog.
Help	Opens online help.

## DATES FOR NATIONAL HOLIDAYS

The base data for the national holidays is in the file called **Feiertage.txt** in the folder called *%programdata%\COPA-DATA\zenon810*. It can be edited with a text editor.

The entries for a country start with the country's identification in English, enclosed in square brackets, followed by a key number, as is also the case in Microsoft Office. The definition of holidays can be found in the following line, the name and date of the holiday. There is one entry in a line for each national holiday.

### Structure:

- ▶ [Country] number
- ▶ Entry, YYYY/MM/D

### For example:

[Austria] 45

Allerheiligen,2009/11/1

Allerheiligen,2010/11/1

...

## 4.5 Configuring screen switching

To open a *shift management* screen in the Runtime:

1. Create a screen of type *Shift management*.
2. Create a *screen switch* function for this screen

## CONFIGURE SCREEN SWITCHING

To create a screen switch to a *Shift management* screen:

1. In the context menu of node **function** select command **New function**.
2. Click on **screen switch**.

The dialog for the screen selection will be opened.

3. Create a **Shift Management** screen.

The filter dialog is opened.

### FILTER DIALOG

Several tabs are available in the dialog for configuration.

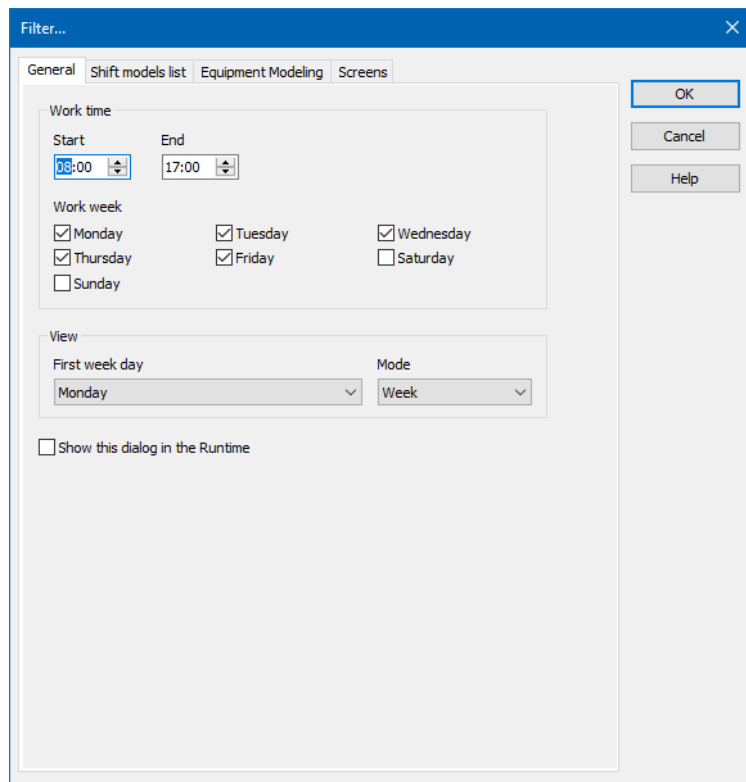
- ▶ **General** (on page 16): Configuration of the calendar.
- ▶ **List of shift models**: (on page 18) Configuration of the list of the shift models.
- ▶ **Equipment modeling** (on page 22): Selection of equipment groups for filtering the shift calendar.
- ▶ **Screens** (on page 26): Selection of screens for which shifts are to be used as a filter.

When calling up the configuration again, tabs for the replacement of links and indices are also offered.

**Note:** The dialog can be called up in the Runtime using the **Filter** button.

## 4.5.1 General

The pre-settings for the shift calendar are configured in this tab. The settings made here determine the display and requirements of the calendar in the Runtime. The settings can only be modified in the Runtime if the **Show this dialog in Runtime** option has been activated.



Filter...

General Shift models list Equipment Modeling Screens

Work time

Start End

08:00 17:00

Work week

☒ Monday ☒ Tuesday ☒ Wednesday

☒ Thursday ☒ Friday ☐ Saturday

☐ Sunday

View

First week day Mode

Monday Week

☐ Show this dialog in the Runtime

OK Cancel Help

## WORK TIME

Configuration of the working time.

Option	Description
<b>Work time</b>	You use these properties to configure the working time prescribed in the calendar.
<b>Start</b>	<p>Enter the time for the start of the working time here. Entry in the field directly or configuration by means of the arrow keys.</p> <p>Default: 8:00 AM</p>
<b>End</b>	<p>Enter the time for the end of the work time. Entry in the field directly or configuration by means of the arrow keys.</p> <p>Default: 5:00 PM</p>



Option	Description
<b>Work week</b>	<p>You use this checkbox to stipulate which days constitute a working week. Selection by activating the checkbox beside of the respective weekday.</p> <p>Default: <i>Monday to Friday</i>.</p> <p><b>Note:</b> At least one day must be selected.</p>

## VIEW

Configuration of the view.

Option	Description
<b>View</b>	Configuration of the standard view of the calendar in the Runtime.
<b>First week day</b>	<p>Selection of the week day with which the Calendar starts the working week. Select from drop-down list.</p> <p>Default: <i>Monday</i></p>
<b>Mode</b>	<p>Selection of the standard view in which the calendar is opened in the Runtime. Select from drop-down list:</p> <ul style="list-style-type: none"> <li>▶ <i>Day</i></li> <li>▶ <i>Week</i></li> <li>▶ <i>Month</i></li> </ul> <p>Default: <i>Week</i></p>

## GENERAL

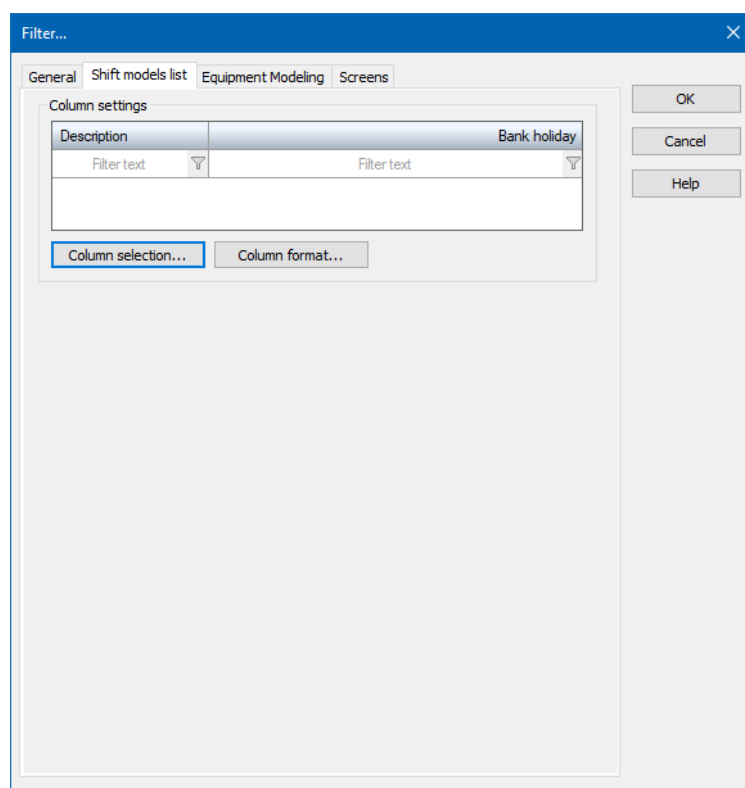
Option	Description
<b>Show this dialog in the Runtime</b>	<p>Selection of whether the dialog is offered when the screen is called up in the Runtime.</p> <ul style="list-style-type: none"> <li>▶ <i>Active:</i> Dialog is offered in the Runtime Settings can be edited before screen switching. <b>Note:</b> The <b>Screens</b> tab is not shown in the Runtime. This configuration cannot be changed.</li> <li>▶ <i>Inactive:</i> Dialog is not shown in the Runtime. The settings configured in the Editor are applied.</li> </ul>

## CLOSE DIALOG

Option	Description
OK	<b>Applies all changes in all tabs and closes the dialog.</b>
Cancel	Discards all changes in all tabs and closes the dialog.
Help	Opens online help.

## 4.5.2 Shift models list

You configure the columns of the shift model list in this tab. These settings are used for the display of the model list in the Runtime. The dialogs to configure the columns can also be called up in the Runtime using the corresponding buttons.



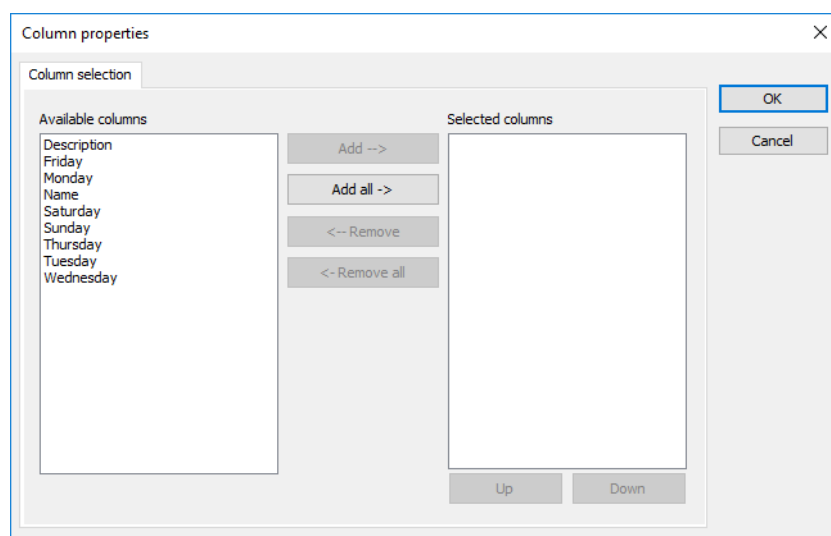
Option	Description
List	Shows configured columns.
Column selection	Clicking on button opens the dialog to select (on page 19) the columns to be displayed.
Column format	Clicking on the button opens the dialog to format (on page 20) the columns.

## CLOSE DIALOG

Option	Description
OK	<b>Applies all changes in all tabs and closes the dialog.</b>
Cancel	Discards all changes in all tabs and closes the dialog.
Help	Opens online help.

## 4.5.2.1 Column selection

Selection of the columns to be displayed.



## COLUMN SELECTION

Option	Function
<b>Available columns</b>	List of columns that can be displayed in the table.
<b>Selected columns</b>	Columns that are displayed in the table.
<b>Add --&gt;</b>	Moves the selected column from the available ones to the selected items. After you confirm the dialog with OK, they are shown in the detail view.
<b>Add all --&gt;</b>	Moves all available columns to the selected columns.
<b>&lt;- Remove</b>	Removes the marked columns from the selected items and shows them in the list of available columns. After you confirm the dialog with OK, they are removed from the

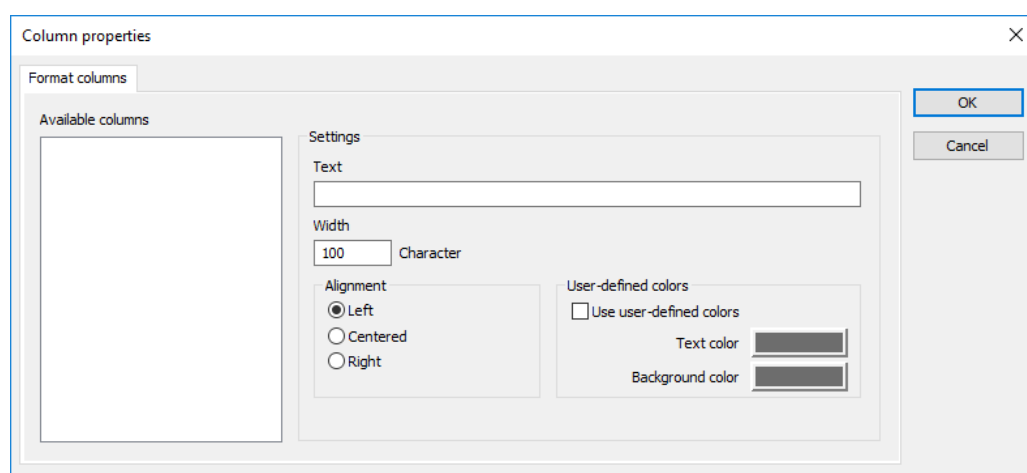
Option	Function
	detail view.
<- Remove all	All columns are removed from the list of the selected columns.
Up	Moves the selected entry upward. This function is only available for unique entries, multiple selection is not possible.
Down	Moves the selected entry downward. This function is only available for unique entries, multiple selection is not possible.

## CLOSE DIALOG

Option	Description
OK	<b>Applies settings and closes the dialog.</b>
Cancel	Discards all changes and closes the dialog.

## 4.5.2.2 Column format

Graphical configuration of the column display.



## AVAILABLE COLUMNS

Option	Description
Available columns	List of the available columns via <b>Column selection</b> . The

Option	Description
	highlighted column is configured via the options in the <b>Settings</b> area.

## SETTINGS

Option	Description
<b>Settings</b>	Settings for selected column.
<b>Labeling</b>	<p>Name for column title.</p> <p>The column title is online language switchable. To do this, the @ character must be entered in front of the name.</p>
<b>Width</b>	<p>Width of the column in characters.</p> <p>Calculation: Number time average character width of the selected font.</p>
<b>Alignment</b>	<p>Alignment. Selection by means of radio buttons.</p> <p>Possible settings:</p> <ul style="list-style-type: none"> <li>▶ <b>Left:</b> Text is justified on the left edge of the column.</li> <li>▶ <b>Centered:</b> Text is displayed centered in the column.</li> <li>▶ <b>Right:</b> Text is justified on the right edge of the column.</li> </ul>
<b>User-defined colors</b>	<p>Properties in order to define user-defined colors for text and background. The settings have an effect on the Editor and Runtime.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>▶ These settings are only available for configurable lists.</li> <li>▶ In addition, the respective focus in the list can be signaled in the Runtime by means of different text and background colors. These are configured using the project properties.</li> </ul>
<b>User defined colors</b>	<i>Active:</i> User-defined colors are used.
<b>Text color</b>	Color for text display. Clicking on the color opens the color palette to select a color.

Option	Description
<b>Background color</b>	Color for the display of the cell background. Clicking on the color opens the color palette to select a color.
<b>Lock column filter in the Runtime</b>	<ul style="list-style-type: none"> <li>▶ <i>Active:</i> The filter for this column cannot be changed in the Runtime.</li> </ul> <p><b>Note:</b> Only available for:</p> <ul style="list-style-type: none"> <li>▶ Batch Control</li> <li>▶ Extended Trend</li> <li>▶ Filter screens</li> <li>▶ Message Control</li> <li>▶ Recipegroup Manager</li> <li>▶ Shift Management</li> <li>▶ Context List</li> </ul>

#### CLOSE DIALOG

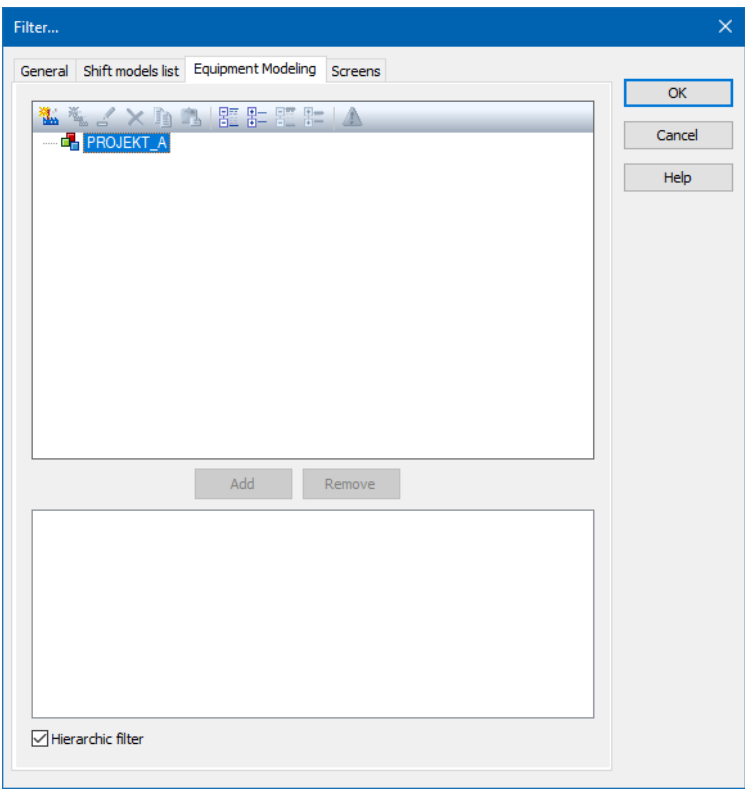
Options	Description
<b>OK</b>	<b>Applies settings and closes the dialog.</b>
<b>Cancel</b>	Discards all changes and closes the dialog.
<b>Help</b>	Opens online help.

### 4.5.3 Equipment Modeling

Each shift can be linked to as many equipment groups as desired. The shifts are filtered according to equipment groups using the screen switch function. The dialog can be called up in the Runtime using the **Filter** button.



All pre-existing equipment models and their equipment groups are displayed in the filter. In the Editor, new equipment models or equipment groups can be created using the equipment modeling context menu or the menu bar in the filter dialog.



EQUIPMENT MODELING

Option	Description
Toolbar	<p>Symbols to:</p> <ul style="list-style-type: none"><li>▶ Edit local equipment models</li><li>▶ Expand or collapse the display</li><li>▶ Display of information</li></ul>
List of equipment models	<p>provides models and groups for selection The list separates the display into equipment models from the global project and from local projects.</p> <p>Local equipment models can be created, edited or deleted.</p> <p><b>Note:</b> Equipment models from the global project cannot be displayed if there are models with the same name from the local project. Affected models are displayed by clicking on the warning symbol (triangle with exclamation mark). For details, see the <b>Equipment modeling</b> manual, <b>Editing local equipment models</b></p>

Option	Description
	chapter.
<b>Add</b>	Adds the selected groups to the filter list.
<b>Remove</b>	Removes all selected groups from the filter list.
<b>Filter list</b>	Shows all equipment groups that are to be filtered.
<b>Hierarchic filter</b>	<p>Checkbox for the activation of the hierarchical filtering of the equipment model</p> <ul style="list-style-type: none"> <li>▶ <i>active</i>: Variables that are linked to a subhierarchy of the selected equipment group are taken into account when filtering and are contained in the display in the Runtime.</li> <li>▶ <i>Inactive</i>: When filtering, only variables that are linked to the selected equipment group are taken into account. Default: <i>active</i></li> </ul>

## CLOSE DIALOG

Option	Description
<b>OK</b>	Applies settings and closes the dialog.
<b>Cancel</b>	<p>Discards the selection and closes the dialog.</p> <p><b>Attention:</b> Any changes that have been made to the structure of local equipment models are retained.</p>
<b>Help</b>	Opens online help.

## CONFIGURATION

New models and groups can be created for the active project and existing ones can be deleted.

### ADD MODEL TO PROJECT

To add a new model:

1. Click on the project.
2. In the toolbar select **New Equipment model**

### REMOVE MODEL

To remove an existing model:



1. Click on the model.
2. Select **Remove** in the toolbar.

### ADD GROUPS TO THE MODEL

To add a group to a model:

1. select the desired equipment model  
**Attention:** If there are naming conflicts between global and local equipment models, the local equipment models are displayed and the global ones are ignored. You can get information on possible conflicts by clicking on the corresponding symbol (triangle with exclamation mark) in the toolbar.
2. Select an equipment group or level.
3. Add the new group to the list in the lower area of the dialog with the **Add** button.

Note:

- ▶ Subgroups are not automatically added.
- ▶ it is possible to link as many groups as you want.

### REMOVE GROUP FROM THE MODEL

To delete a group from a model:

1. Select the desired elements in the list in the lower area of the dialog (multiple selection is possible).
2. Click the **Delete** button

**Note:** Changes in a tree element remain preserved independent of clicking button **Cancel**. **Cancel** only means that no element was selected.

### GROUPS TO ADD FILTERS OR REMOVE THEM

To add groups to the filter:

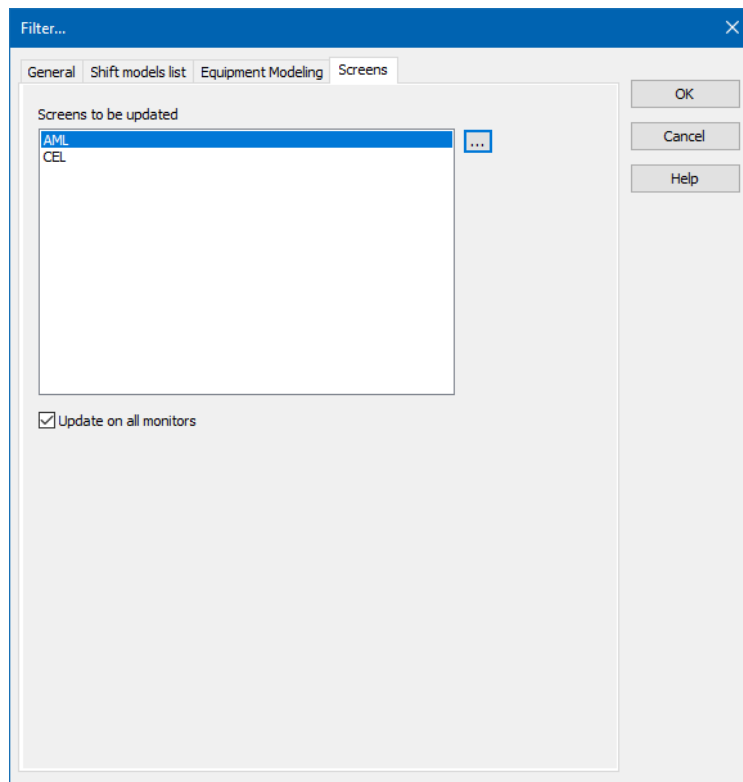
1. Select the desired element.
2. Click on the **Add** button.
3. Repeat the process until all necessary groups are available in the list  
(Multi-select is not possible)

To remove groups from the filter:

1. Select the desired element  
(multiselect: Hold down the **Ctrl** key or **shift** key and click on the desired element.)
2. Click the **Delete** button.

## 4.5.4 Screens

Other screens can be displayed with filtered (on page 67) shift information. To do this, you need the **Apply selection** button in the shift management screen and must select one or more screens that are to be filtered. The target screen must already be called up in the Runtime if the filter is applied. Selection is made when configuring the screen switching in the **Screens** tab.



Option	Description
<b>Screens to be updated</b>	<p>Selection of the screens that are to be updated. Click the ... button and a dialog opens to select screens. Only screens that can be filtered are shown.</p> <p>Subscreens of faceplates can also be selected for screen switching to AML filter, CEL filter, time filter, equipment model and shift management. For these screens, the name of the faceplate screen is placed in front of the subscreen in order to clearly distinguish them from other screens.</p>
<b>Update on all monitors</b>	<ul style="list-style-type: none"> <li>▶ <i>Active</i>: The screens from the list of <b>screens to be updated</b> are updated on all accessible monitors.</li> <li>▶ <i>Inactive</i>: Only screens that are displayed at the time of listing on the currently-active monitor are updated.</li> </ul>

## CLOSE DIALOG

Option	Description
OK	<b>Applies all changes in all tabs and closes the dialog.</b>
Cancel	Discards all changes in all tabs and closes the dialog.
Help	Opens online help.

## 4.6 Function SQL export

Shifts and breaks can be exported to SQL in the Runtime (on page 72). To do this, a corresponding function must be created in the Editor and executed in the Runtime.

### CREATE THE FUNCTION IN THE EDITOR

Steps to create the function:

1. Create a new function:  
In the toolbar or in the context menu of the Functions node, select **New function**.  
The dialog to select a function is opened.
2. Go to the **Shift Management** node.
3. Select the **SQL export shift calendar** function.  
The dialog for configuration is opened
4. Configure:
  - ▶ Connection to the SQL database.
  - ▶ Time period from which shifts should be exported.
  - ▶ Equipment groups for which the shifts are to be exported.
5. Name the function in the **Name** property.

### SQL SHIFT CALENDAR DIALOG

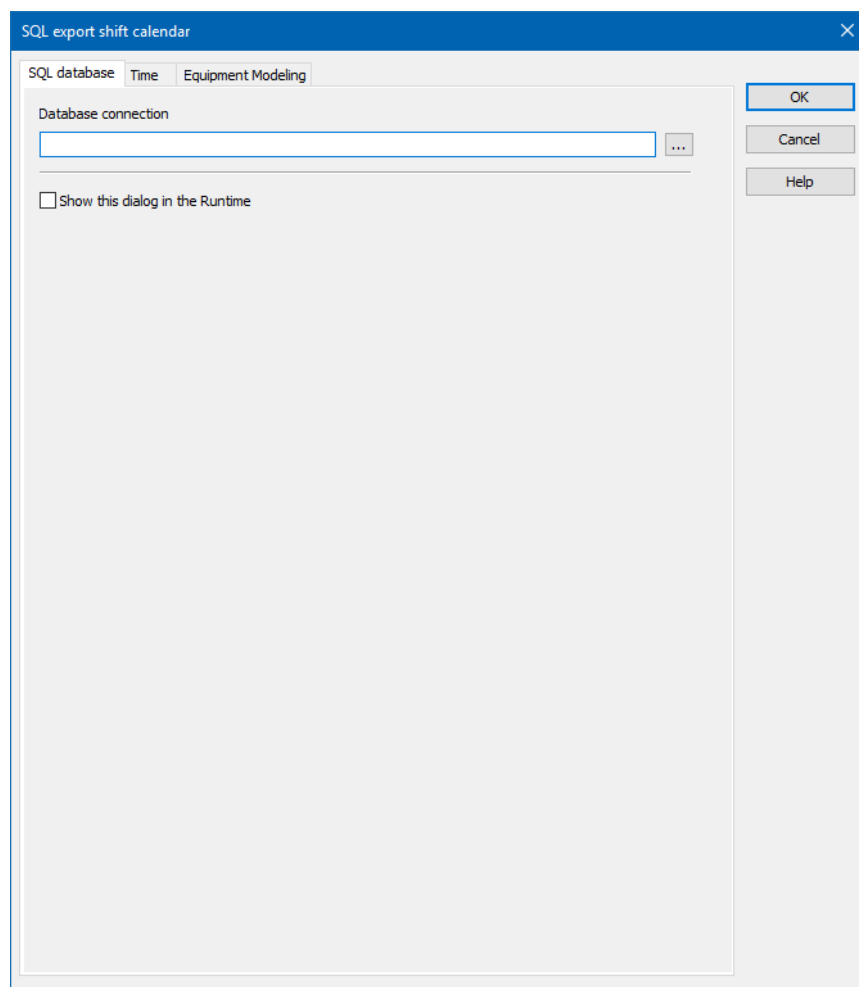
SQL export is configured using the following tabs:

- ▶ SQL database (on page 28): Configuration of the connection to the SQL database.
- ▶ Time (on page 30): Selection of the time filter.
- ▶ Equipment modeling (on page 33): Selection of the equipment groups.

### 4.6.1 SQL database

In this tab, you establish the connection to an SQL database.

**Attention:** If the connection is configured incorrectly, no data can be exported in the Runtime.



#### SQL DATABASE

Option	Description
Database connection	Selection of the database connection. Entry in the field or configuration by means of a dialog. Clicking on the ... button opens the configuration dialog.
Show this dialog in the Runtime	Active: This dialog to change the configuration is offered before execution in the Runtime when the function is called up.

## CLOSE DIALOG

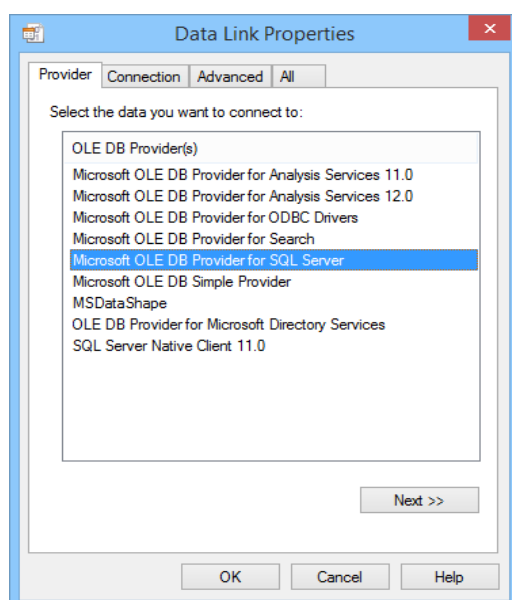
Option	Description
OK	Applies all changes in all tabs and closes the dialog.
Cancel	Discards all changes in all tabs and closes the dialog.
Help	Opens online help.

## CONFIGURE CONNECTION

The dialog for connecting to a database originates from the operating system.

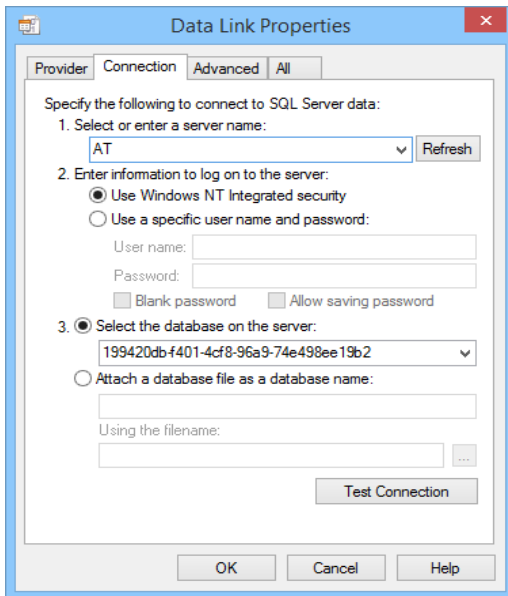
How the database connection is carried out in general, you can see at the following example. You can get information about the individual settings for each tab from the Microsoft help function by clicking button **Help**.

1. The dialog starts with tab **Connection**.
2. Open tab **Provider**



3. Select the provider **Microsoft OLE DB Provider for SQL Server**.
4. Apply this by double clicking or clicking on the entry or the **Continue** button.

The **Connection** tab is opened.



5. Select the required server from the drop-down list.
6. Select the login information.  
Tip: **Integrated security** is generally used.
7. Select the database.
8. Click on **test connection**.  
Optional settings:
  - ▶ Tab **Extended**: Configuration of network settings, timeout and access rights (not generally necessary for this connection).
  - ▶ **All** tab Configuration of individual details (not generally necessary for this connection).
9. Confirm your selection by clicking **OK**.

The connection to the SQL Server is entered.

## 4.6.2 Time

You configure the time period for the export in this tab.

**Note:** A time period must be stipulated. Only the completed shifts that are in this time period are exported.

Standard: **Relative time period, 1 h**

SQL export shift calendar

SQL database Time Equipment Modeling

Filter

☐ Absolute time period

☒ Relative time period

☐ From

Starting from HH:MM:SS

☐ Time period

One day

Settings

☐ Propose current date/time

☒ Preset

Day(s) - Month - Year HH - MM - SS

0 1 0 0

OK Cancel Help

## FILTER

### Selection of the filter.

Parameter	Description
<b>Absolute filter</b>	<p><i>Active:</i> A fixed period of time is entered in the editor. When the function is executed, the defined absolute time period is exactly used.</p> <p>In the settings section, the corresponding options can be shown and configured there.</p> <p><b>Note:</b> Time is saved in UTC. For details see chapter Handling of date and time in chapter Runtime.</p>
<b>Relative time period</b>	<p><i>Active:</i> A relative time period is entered.</p> <p>In the settings section, the corresponding options can be shown and</p>

Parameter	Description
	<p>configured there.</p> <p><b>Attention:</b> this filter is constantly updated.</p>
<b>From</b>	<p><i>Active:</i> A time from which the filter is effective is stated. If the time is not reached on the current day, filtering takes place from the corresponding time the previous day.</p> <p>Selection of the area mode from drop-down list:</p> <ul style="list-style-type: none"> <li>▶ Starting from HH:MM:SS</li> <li>▶ Starting from day - HH:MM:SS</li> <li>▶ Starting from day, month - at HH:MM:SS</li> </ul> <p>In the settings section, the corresponding options can be shown and configured there.</p> <p><b>Attention:</b> The start point of this filter is not updated automatically. Only the existing times are used when shown. The end time point is not defined with this filter, it is carried over.</p>
<b>Time period</b>	<p><i>Active:</i> A fixed time period is entered. Selection of the area mode from drop-down list:</p> <ul style="list-style-type: none"> <li>▶ One day</li> <li>▶ One week</li> <li>▶ Two weeks</li> <li>▶ One month</li> <li>▶ One Year</li> <li>▶ 15 minutes</li> <li>▶ 30 minutes</li> <li>▶ 60 minutes</li> </ul> <p>In the settings section, the corresponding options can be shown and configured there.</p>

**CLOSE DIALOG**

Parameter	Description
<b>OK</b>	Applies all changes in all tabs and closes the dialog.
<b>Cancel</b>	Discards all changes in all tabs and closes the dialog.



Parameter	Description
Help	Opens online help.

### 4.6.3 Equipment Modeling

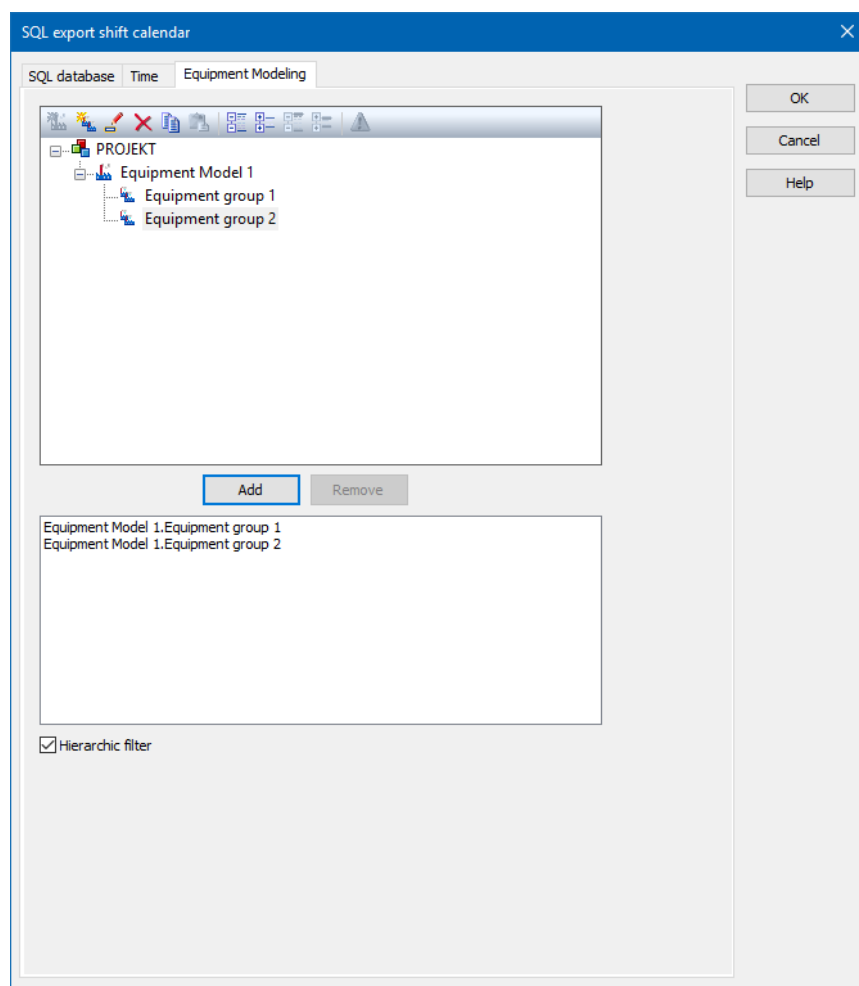
In this tab you select the desired equipment group.



#### Attention

The following is applicable for SQL export:

- ▶ In general, only shifts that are linked to an equipment model are exported.
- ▶ If no equipment groups have been selected, all shifts that correspond to the time filter and are linked to an equipment model are exported.



## EQUIPMENT MODELING

Option	Description
<b>List of equipment models</b>	<p>provides models and groups for selection The list separates the display into equipment models from the global project and from local projects.</p> <p>Local equipment models can be created, edited or deleted.</p> <p><b>Note:</b> Equipment models from the global project cannot be displayed if there are models with the same name from the local project. Affected models are displayed by clicking on the warning symbol (triangle with exclamation mark). For details, see the <b>Equipment modeling</b> manual, <b>Editing local equipment models</b> chapter.</p>
<b>Add</b>	<p>Adds the selected groups to the filter list.</p> <p>The shifts that are linked to one of the selected equipment groups are exported.</p>
<b>Remove</b>	Removes all selected groups from the filter list.
<b>Filter list</b>	Shows all equipment groups that are to be filtered.

## CLOSE DIALOG

Option	Description
<b>OK</b>	<b>Applies all changes in all tabs and closes the dialog.</b>
<b>Cancel</b>	Discards all changes in all tabs and closes the dialog.
<b>Help</b>	Opens online help.

## SELECT EQUIPMENT GROUPS

To select equipment groupsp for the export:

1. Select the desired equipment groups.
2. Click on the **Add** button.
3. Repeat the process until all necessary groups are available in the list (Multi-select is not possible.)

To remove equipment groups:

1. Select the desired equipment group.  
(multiselect: Hold down the **Ctrl** key or **shift** key and click on the desired element.
2. Click the **Delete** button.

## ADDING OR DELETING EQUIPMENT GROUPS

Actions in the window of the existing equipment model can be controlled using the toolbar.  
Description of the symbols, starting from the left:



Symbol	Description
<b>New Equipment Model</b>	Creates a new Equipment model. (for local equipment models only)
<b>New group</b>	Creates a new equipment group below the highlighted entry. (for local equipment models only)
<b>Edit</b>	Makes it possible to edit the name. (for local equipment models only)
<b>Delete</b>	Deletes the selected entry. (for local equipment models only)
<b>Copy</b>	Copies the selected entry.
<b>Paste</b>	<p>Pastes copied entries from the clipboard below the highlighted entry. If a group with the same name already exists, the inserted group receives the prefix <b>Copy of</b> (for local equipment models only)</p> <p><b>Attention:</b> If equipment models are copied from the global project to the local project and not renamed, there are two models with the same names. Both can be selected, however no linking is created on confirmation.</p> <p><b>Hint:</b> Always rename models copied from the global project to the local project.</p>
<b>Expand all</b>	All nodes are expanded.
<b>Collapse all</b>	All nodes are collapsed.

Symbol	Description
<b>Expand selection</b>	The selected node is expanded.
<b>Collapse selection</b>	The selected entry is collapsed.
<b>Warnings</b>	<p>Displays warnings.</p> <p>For example, equipment models from the global project that are not displayed because models with the same name from the local project are preferred.</p>

### Hint

You can find further information in the **Equipment modeling** manual, in the **Equipment modeling dialog** chapter.

## 5 Shift Management in Runtime

Shift Management makes the following possible in the Runtime:

- ▶ Creation and administration of shifts and shift models
- ▶ Informing users in a shift by means of Message Control (on page 58)
- ▶ To filter information from other screens (AML, CEL) with shifts (on page 67)
- ▶ To export shift data to SQL by means of a function

Shift models (on page 61) provide templates for shifts. Shifts are created in the calendar directly or derived from a shift model.

The calendar (on page 40) makes the following possible:

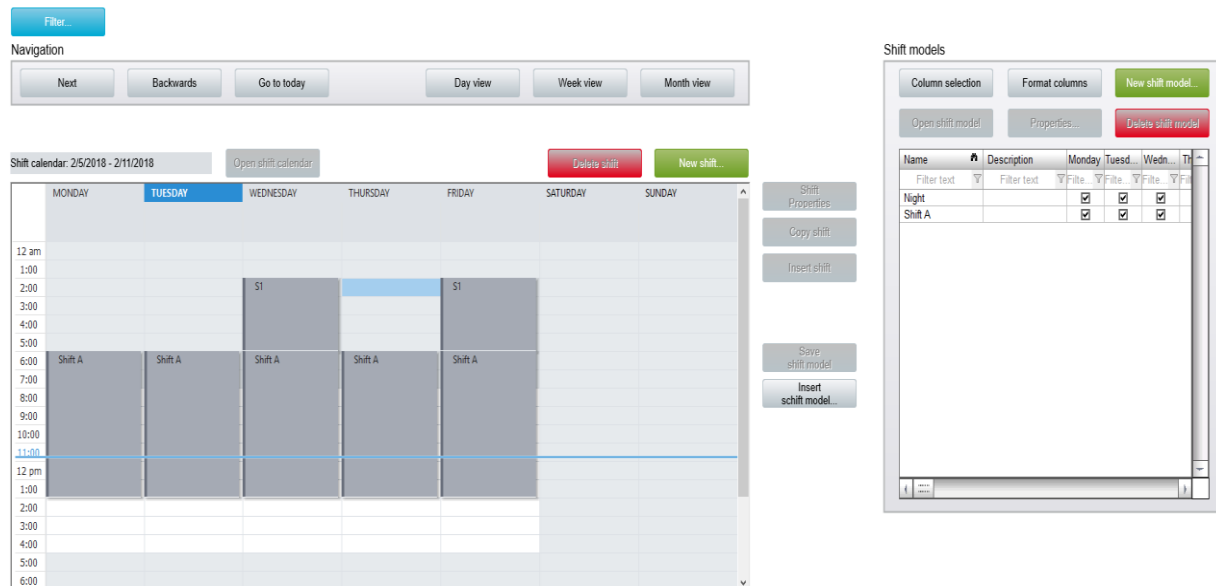
- ▶ Creating shifts
- ▶ Editing shifts
- ▶ Displaying shifts in filtered form
- ▶ Editing shift models

### Note:

- ▶ In order for shifts and shift models to be administered on a client or zenon Web Client, the **Primary Server** must be available.

- ▶ In order for users to be able to create, edit and delete shifts and shift models, they must have the corresponding function authorization.
- ▶ The **Always show system messages in list** option in the screen switching to a CEL screen is taken into account by shift management.

## STANDARD VIEW OF SHIFT MANAGEMENT IN THE RUNTIME



## ELEMENTS

Element	Description
<b>Filter</b>	Opens the dialog (on page 14) with the filter settings for screen switching.
<b>Calendar</b>	Calendar module that shows the calendar with the shifts or a shift model in the Runtime.
<b>Calendar content</b>	Text element that shows the currently-displayed data range of the shift calendar in the Runtime.

## SHIFTS

Element	Description
<b>New shift</b>	Opens the dialog (on page 41) to create a new shift.
<b>Delete shift</b>	Deletes the selected shift. Multiple selection is possible with the <b>Control key</b> .

Element	Description
Shift properties	Opens dialog for editing the selected shift.
Copy shift	Copies the selected shift.
Insert shift	Pastes a copied shift from the clipboard into the selected day.

## APPLY SELECTION

Element	Description
Apply selection	Applies selected shifts and uses these on other screens as a filter (on page 67). These screens must be selected in the screen switching in the Screens tab.

## SHIFT CALENDAR

Element	Description
Open shift calendar	Opens the shift calendar.  Only available if a shift model is displayed in the calendar.
Insert shift model	Opens the dialog (on page 53) to paste a shift model into the shift calendar.

## NAVIGATION

Element	Description
Forwards	Goes one element forward in the calendar according to the entered value (one day, one week or one month).
Backwards	Goes one element back in the calendar according to the entered value (one day, one week or one month).
Day view	Shows the selected day in the calendar.
Week view	Shows the selected week in the calendar.
Month view	Shows the selected month in the calendar.
Go to today	Shows the current day in the calendar.

## SHIFT MODELS

Elements	Description
Shift models list	List of existing shift models.
Column selection	Opens the dialog (on page 19) to select the columns to be displayed in the list.
Format columns	Opens a dialog (on page 20) to format the columns.
New shift model	Opens the dialog (on page 63) for creating a shift model.
Open shift model	Changes the calendar view to the display of shift models and opens the selected shift model there.
Save shift model	Saves the shift model opened in the calendar.  Only available if a shift model is open in the shift calendar and there are unsaved changes.
Delete shift model	Deletes the selected shift model after a confirmation message.
Properties	Configuration of the properties of the shift model: Name and description

**Hint:** Insert the **Calendar content** control element into the calendar. You thus see at a glance which time period from the calendar is currently being displayed.

## COLORING

Time periods are marked in color in the calendar:

Time period	Day	Week	Month
Free time	light gray	light gray	--
Work time	white	white	--
Shift	dark grey	dark grey	dark grey
Selection	light blue	light blue	light blue
Current day	--	Blue	Blue
Previous month / following month	--	--	Mid-gray

## 5.1 Calendar

The calendar shows the shift calendar or shift models, according to the selection. Switching is carried out using the **Open shift model** button or the **Open shift calendar** button.

The view is scaled depending on the selected time range:

- ▶ Day and week view: 1 hour
- ▶ Month view: 1 day
- ▶ Shift models only show one day and are displayed scaled to 1 hour.

Shifts and shift models are configured using the context menu or the respective buttons.

### EMPTY CELL CALENDAR CONTEXT MENU

Menu item	Action
New shift	Opens the dialog to create a new shift.
Insert shift	Pastes shifts from the clipboard.
Insert shift model	Opens the dialog (on page 53) for inserting a shift model.
Today	Shows the current day in the calendar.
Day	Shows the selected day in the calendar.
Week	Shows the selected week in the calendar.
Month	Shows the selected month in the calendar.
Forwards	Goes one element forward in the calendar according to the entered value (one day, one week or one month).
Backwards	Goes one element back in the calendar according to the entered value (one day, one week or one month).

### CALENDAR SHIFT ENTRY CONTEXT MENU

Menu item	Action
Shift properties	Shows the dialog with the given shift information.



Menu item	Action
Copy shift	Copies the selected shift to the clipboard. Multiple selection is also possible with the <b>Ctrl key</b> .
Delete shift	Deletes the selected shift. Multiple selection is also possible with the <b>Ctrl key</b> .
Apply selection	Applies selected shifts and uses these on other screens as a filter (on page 67). These screens must be selected in the screen switching in the Screens tab.

### SHIFT MODEL LIST CONTEXT MENU

Menu item	Action
New shift model	Opens the dialog to create a new shift model.
Open shift model	Changes the calendar view to a display of shift models and opens the selected shift model.
Delete shift model	Deletes the selected shift model. Multiple selection is also possible with the <b>Ctrl key</b> .
Properties	Opens the dialog for the configuration of the shift model.

## 5.1.1 Shifts

### 5.1.1.1 Create shift

To create a new shift:

1. In the calendar, click in a new time point that has not yet been assigned.
2. Create a new shift:
  - ▶ Context menu: Click on **New shift** in the context menu.
  - ▶ Button in the screen: Click on the **New shift** button.
  - ▶ Keyboard: Press the **INS** key.

The dialog to create a new shift is opened.

3. Configure the shift with:

- ▶ Shift times (**General** tab)
- ▶ Breaks
- ▶ Equipment Groups
- ▶ User

**Note:** It is possible to create shifts on any client computer. If Shift Management is used on different client computers at the same time, all newly-created shifts are asvade and updated on all client computers.

### 5.1.1.1.1 General

Configuration of the general shift properties.

To configure general properties:

1. Give the shift a name.
2. Configure the start and end.
3. Enter a description (optional).
4. Configure breaks, equipment groups and users if necessary.
5. Close the dialog by clicking on **OK**.

Shifts must meet the following rules:

- ▶ A valid name must be given.
- ▶ The start time must not be after the end time.

**Attention:** If you change shift times, amend the break times in the **Breaks** tab too.

### GENERAL DIALOG

Option	Description
<b>Name</b>	<p>Please enter a name for the shift.</p> <ul style="list-style-type: none"> <li>▶ Maximum length: 256 characters</li> <li>▶ The following special characters are not permitted: \.:*?&lt;&gt;!"'%"#%</li> <li>▶ Must not be empty or only consist of spaces!</li> </ul>
<b>Start</b>	<p>Select the start time for the shift:</p> <ul style="list-style-type: none"> <li>▶ Day: Selection from calender element or entry in the field directly.</li> </ul>

Option	Description
	<ul style="list-style-type: none"> <li>▶ Time: Selection by means of arrow keys or entry in the field directly.</li> </ul> <p>Default: Start marked in the calendar.</p>
<b>End</b>	<p>Select the end time for the shift:</p> <ul style="list-style-type: none"> <li>▶ Day: Selection from calendar element or entry in the field directly.</li> <li>▶ Time: Selection by means of arrow keys or entry in the field directly.</li> </ul> <p>Default: End marked in the calendar.</p>
<b>Description</b>	<p>Optional description of the shift.</p> <p>Maximum length: 32,000 characters</p>

#### CLOSE DIALOG

Option	Description
<b>OK</b>	<b>Applies all changes in all tabs and closes the dialog.</b>
<b>Cancel</b>	Discards all changes in all tabs and closes the dialog.

#### 5.1.1.1.2 Breaks

Configuration of the break times.

All breaks are shown in a list and can be edited in the list directly.

To configure breaks:

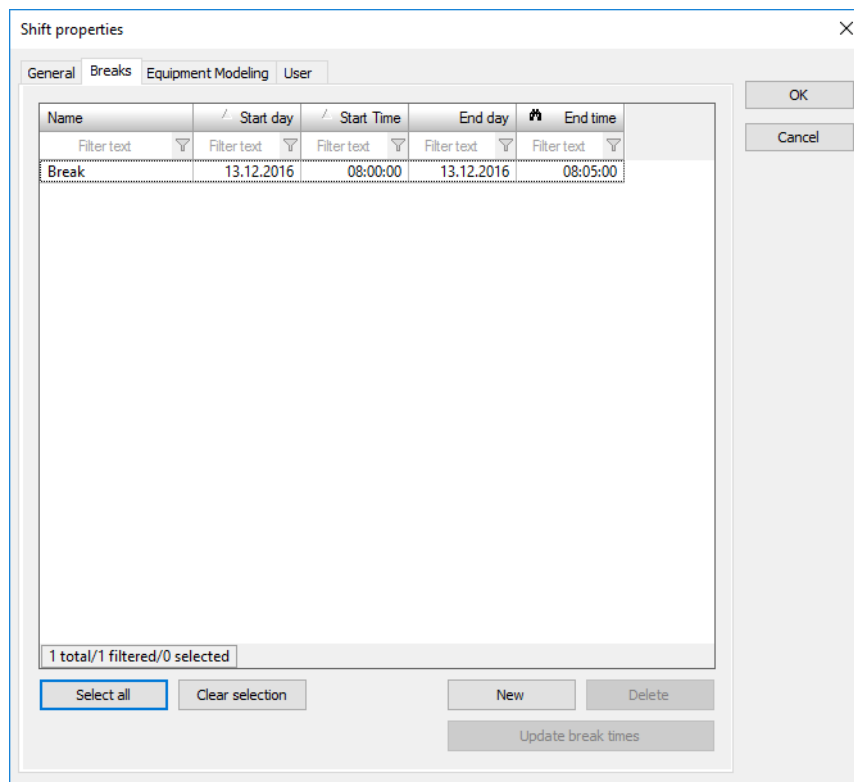
1. Click on the New button.  
A new break is created.
2. Amend the name.
3. Issue a date and time for the start and end of the break.
4. Click on **OK**.

**Note:** If the shift times are amended, you may need to also amend the break times under certain circumstances. You can do that manually or automatically by clicking on the **Update break times** button.

Breaks must meet the following rules:

- ▶ For names, the same rules as for shift names are applicable.
- ▶ The start time must not be after the end time.
- ▶ They must not overlap.
- ▶ They must be within a shift.

## BREAKS DIALOG



Shift properties

General Breaks Equipment Modeling User

Name	Start day	Start Time	End day	End time
Break	13.12.2016	08:00:00	13.12.2016	08:05:00

1 total/1 filtered/0 selected

Select all Clear selection New Delete Update break times

OK Cancel

Option	Description
<b>Name</b>	<p>Display and configuration of the break name.</p> <p>Default: <b>Pause</b></p> <p>To change the name:</p> <ol style="list-style-type: none"> <li>1. Click in the cell twice.</li> <li>2. Enter the name.</li> </ol> <p>The following is applicable for break names:</p> <ul style="list-style-type: none"> <li>▶ Maximum length: 256 characters</li> <li>▶ The following special characters are not permitted:  <code>\.:*?&lt;&gt;!"'##%</code> </li> </ul>

Option	Description
<b>Start day</b>	<p>Select the day for the start of the break here.</p> <p>Default: First day of the shift.</p> <p>To change the day:</p> <ol style="list-style-type: none"> <li>1. Click in the cell twice or press the <b>F2</b> key after selection.</li> <li>2. Select the required day from the drop-down list.</li> </ol> <p>The following applies for the start day:</p> <ul style="list-style-type: none"> <li>▶ All days configured for the shift are available.</li> <li>▶ The date must not be higher than the date for the <b>End day</b> option.</li> </ul>
<b>Start Time</b>	<p>Select the time for the start of the break here.</p> <p>Default: Start time of the shift.</p> <p>To change the time:</p> <ol style="list-style-type: none"> <li>1. Click in the cell twice or press the <b>F2</b> key after selection.</li> <li>2. Enter the time or configure the time with the arrow keys.</li> </ol> <p>The following is applicable for the start time:</p> <ul style="list-style-type: none"> <li>▶ All times configured for the shift are available.</li> <li>▶ The time must not be later than the time configured for the <b>End time</b> option.</li> </ul>
<b>End day</b>	<p>Select the day for the end of the break here.</p> <p>Default: First day of the shift.</p> <p>To change the day:</p> <ol style="list-style-type: none"> <li>1. Click in the cell twice or press the <b>F2</b> key after selection.</li> <li>2. Select the required day from the drop-down list.</li> </ol> <p>The following applies for the end day:</p> <ul style="list-style-type: none"> <li>▶ All days configured for the shift are available.</li> <li>▶ The date must not be earlier than the date for</li> </ul>

Option	Description
	the <b>Start day</b> option.
<b>End time</b>	<p>Select the time for the end of the break here.</p> <p>Default: Start time of the shift plus 5 minutes.</p> <p>To change the time:</p> <ol style="list-style-type: none"> <li>1. Click in the cell twice or press the <b>F2</b> key after selection.</li> <li>2. Enter the time or configure the time with the arrow keys.</li> </ol> <p>The following is applicable for the end time:</p> <ul style="list-style-type: none"> <li>▶ All times configured for the shift are available.</li> <li>▶ The time must not be later than the time configured for the <b>Start time</b> option.</li> </ul>
<b>Select all</b>	Selects all configured breaks.
<b>Clear selection</b>	Clears the selection. No more breaks are selected.
<b>New</b>	Adds a new break to the list.
<b>Delete</b>	Deletes all selected entries after requesting confirmation.
<b>Update break times</b>	<p>Clicking on the button automatically amends the break times to the amended shift times. In doing so, all breaks are moved so that their start is at the same length to the shift start as before the change to the shift time.</p> <p>Only available if, in the <b>General properties</b> (on page 42) tab, shift times have been amended and the change has an effect on the configured breaks.</p>

## CLOSE DIALOG

Option	Description
<b>OK</b>	<b>Applies all changes in all tabs and closes the dialog.</b>
<b>Cancel</b>	Discards all changes in all tabs and closes the dialog.

### 5.1.1.1.3 Equipment Modeling

Shifts can be linked to equipment groups.

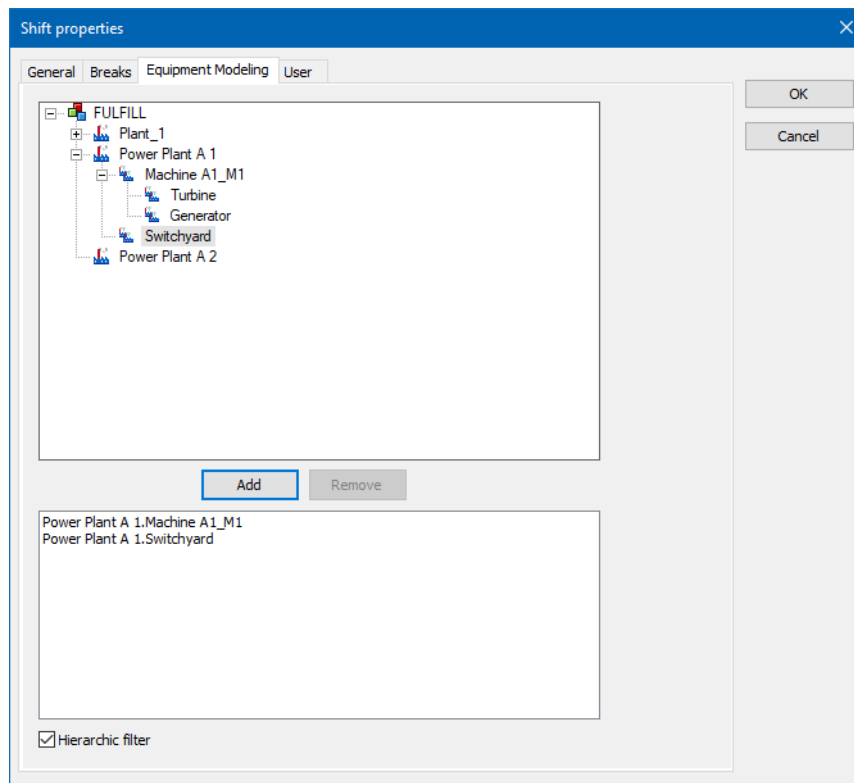
To assign equipment groups in a created shift:

1. Select the desired element.
2. Click on the **Add** button.
3. Repeat the process until all necessary groups are available in the list (Multi-select is not possible.)
4. Activate or deactivate the **Hierarchical filter** checkbox to include or exclude subordinate shifts.

To remove groups from a shift:

1. Select the desired element  
(multiselect: Hold down the **Ctrl** key or **shift** key and click on the desired element.
2. Click the **Delete** button.

## EQUIPMENT MODELING DIALOG



Option	Description
List of equipment models	provides models and groups for selection The list separates the display into equipment models from the global project and from

Option	Description
	<p>local projects.</p> <p>Local equipment models can be created, edited or deleted.</p> <p><b>Note:</b> Equipment models from the global project cannot be displayed if there are models with the same name from the local project. Affected models are displayed by clicking on the warning symbol (triangle with exclamation mark). For details, see the <b>Equipment modeling</b> manual, <b>Editing local equipment models</b> chapter.</p>
Add	Adds the selected groups to the filter list.
Remove	Removes all selected groups from the filter list.
Filter list	Shows all equipment groups that are to be filtered.
Hierarchic filter	<p>Allows the inclusion of subordinate equipment groups.</p> <ul style="list-style-type: none"> <li>▶ <i>Active:</i> For all equipment groups displayed in the <b>filter list</b>, their subordinate equipment groups are also selected and used.</li> <li>▶ <i>Inactive:</i> Only the equipment groups shown in the <b>filter list</b> are used.</li> </ul> <p><b>Note:</b> If the option is active, subordinate equipment groups that influence the filtering of CEL/AML with shifts (on page 67) can be contained in the filter.</p>

## CLOSE DIALOG

Option	Description
OK	Applies all changes in all tabs and closes the dialog.
Cancel	Discards all changes in all tabs and closes the dialog.

In the Editor, new models and groups can be created for the active project and existing ones can be deleted. It is only possible to work with pre-existing equipment models in the Runtime.

### 5.1.1.1.4 User

You link users to shifts in this tab.

These users can be selected as the recipient of messages by the **Message Control** module.



## LINK USERS TO A SHIFT

To link users to a shift:

1. Click on the **Add** button in the dialog.  
Alternatively, you can also use the **Add user** command in the context menu.  
The **user selection** dialog is opened.
2. Highlight the desired users in the list of existing users.  
**Note:** Users must already be created in order to be able to be selected.
3. Add the selection to the list of selected users with **Add**.
4. Confirm the selection by clicking **OK**.  
The users are added in the **shift properties** dialog.
5. Confirm the settings with **OK**.  
The users are linked to the shift.

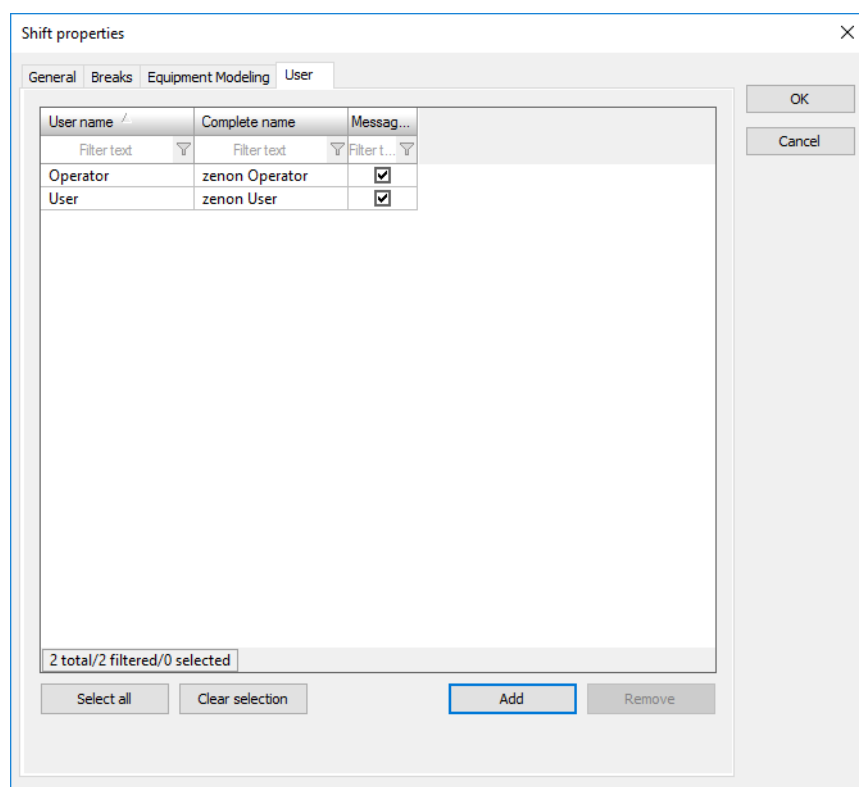
## NOTIFY USERS

The following conditions must be met in order for users to be notified:

- ▶ The user must be linked to an active shift at the time of sending the message.
- ▶ The **Message Control user** property must be activated for the user.  
In the user list of the dialog, it shows whether the property is active or inactive.  
**Note:** If the checkbox is not active, it can be activated in the respective user profile.
- ▶ In the **Send a Message** function, the *User group with shift filter* property must be selected for the **Type** option.

**Note:** The users are notified in accordance with the settings in the **Message Control** module. The notification is only carried out if the shift is also active on the corresponding day.

## USER DIALOG



Option	Description
<b>User List</b>	<p>Shows the user that is linked to the shift.</p> <p>The following is displayed for each user:</p> <ul style="list-style-type: none"> <li>▶ <i>User name</i></li> <li>▶ <i>Complete name</i></li> <li>▶ <i>Message Control user</i></li> </ul> <p>The users can be sorted and filtered according to these criteria.</p>
<b>User name</b>	Displays the short name of the user.
<b>Complete name</b>	Displays the complete name of the user.
<b>Message Control user</b>	Shows whether the user has been configured for notification via Message Control.
<b>Select all</b>	Selects all users in the list.
<b>Clear selection</b>	Resets the selection.
<b>Add</b>	Opens the dialog to select users and adds the selected

Option	Description
	users to the user list.
<b>Remove</b>	Removes all selected users from the user list.
<b>Filter list</b>	Shows all criteria that are to be filtered.

#### CLOSE DIALOG

Option	Description
<b>OK</b>	<b>Applies all changes in all tabs and closes the dialog.</b>
<b>Cancel</b>	Discards all changes in all tabs and closes the dialog.

### 5.1.1.2 Edit shift

In order to edit a shift:

1. Click on a shift that you want to edit in the calendar.  
Edit the shift using
  - ▶ Double-click Double click on the shift to be edited.
  - ▶ Context menu: Click on **Shift properties** in the context menu.
  - ▶ Button in the screen: Click on the **Edit shift** button.
  - ▶ Keyboard: Press the **Enter** key.

**Note:** It is possible to edit shifts on any client computer. If Shift Management is used by several client computers at the same time, when editing a shift, the changes that were made last are applied and updated.

### 5.1.1.3 Delete shift

To delete a shift:

1. Click on a shift that you want to delete in the calendar.  
**Note:** Multiple selection with the **CTRL key** is also possible.
2. You can choose to delete the selected shifts by means of:
  - ▶ Context menu: Click on **Delete shift** in the context menu.
  - ▶ Button in the screen: Click on the **Delete shift** button.
  - ▶ Keyboard: Press the **DEL** key.

Before deletion, a dialog is opened requesting confirmation.

3. Confirm the dialog with **Yes**, or **Yes to all** with multiple items selected.

**Note:** It is possible to delete shifts on any client computer. If Shift Management is used by several users on different client computers at the same time, the shifts first deleted on a client computer are also no longer visible on all other client computers.

#### 5.1.1.4 Filtering shifts

Shifts can be displayed with a filter in the Runtime. Filtering is carried out using the linked equipment groups.

To filter the display in the calendar in the Runtime:

1. Click on the button **Filter**.  
The dialog for screen switching is opened.
2. Select the equipment groups (on page 22) that are to be used.
3. Confirm the configuration by clicking on the **OK** button.

In the calendar, only shifts that correspond to the equipment model filter are displayed.

### EQUIPMENT GROUPS

It is possible to choose configuration of the filter for the equipment group by means of:

- ▶ Screen switch to a screen of type *Shift management*.
- ▶ Screen of type *Equipment model*

#### SCREEN SWITCH TO A SCREEN OF TYPE SHIFT MANAGEMENT.

Configuration is carried out in the screen switching or in the filter dialog in the **Equipment Modeling** (on page 22) tab.

In order for shifts to be displayed in the Runtime:

- ▶ The shift must have at least one equipment group in common with the filter  
or
- ▶ The shift must not be linked to an equipment group

**Note:** If no equipment modeling is configured in the screen filter, all shifts are displayed.

## SCREEN OF TYPE EQUIPMENT MODEL

When screen switching, the **Screen to be updated** option is used to select the desired *Shift Management* screen. In the Runtime, the filter set in the screen is applied to the selected shift model screen.

**Note:** If filtering is via the equipment model screen, it replaces the configurations set in the shift model screen.

### 5.1.1.5 Highlight time ranges

Time ranges can be highlighted via the configuration of times to be displayed. Time ranges outside the time filter are shown in gray, but can be edited.

To configure time periods in the calendar:

1. Click on the button **Filter**.  
The dialog for screen switching is opened.
2. Define the desired time range in the **General** (on page 16) tab.
3. Confirm the configuration by clicking on the **OK** button.

### 5.1.1.6 Insert shift model

To add a shift model to a calendar:

1. Highlight in the shift calendar the day, on which the shift model is to be added.
2. Click on the button or the **Insert shift model**.  
**Note:** When engineering in the network, there must be operating authorizations on the computer.

The dialog to select a shift model is opened.

3. Select the desired model.
4. Select the start day and the end day.
5. Select at least one equipment group.
6. Click on **OK**.

The model is inserted into the configured time period in the calendar.

**Note:**

- ▶ When inserting onto the calendar, a check is carried out to see if the respective day is also envisaged for the shift.
- ▶ The shift model is inserted on the server. The clients are notified by means of the new shift.

- ▶ The shifts created have no relation or linking to the model.
- ▶ If the shift model has been added on the wrong day, all shifts created must be deleted manually.



### Attention

If a day in the monthly shift is selected in the shift model, this day lasts from 00:00 to 24:00. Midnight is also the starting point for the next day. 2 days are therefore selected in practice.

The shift is thus inserted for 2 days when inserting a shift model into a calendar.

To insert the shift for just one day:

- ▶ Insert the shift model.
- ▶ For the **To** option, stipulate the same date as for **From**.

### Example

Object	Start	End
Shift in the shift model:	3:00 AM	4:00 AM
Selection in the calendar:	03.04.2017, 02:00	03.04.2017, 8:00 AM
Result in the calendar:	03.04.2017, at 3:00	03.04.2017, at 4:00 AM

## INSERT NEW SHIFT MODEL

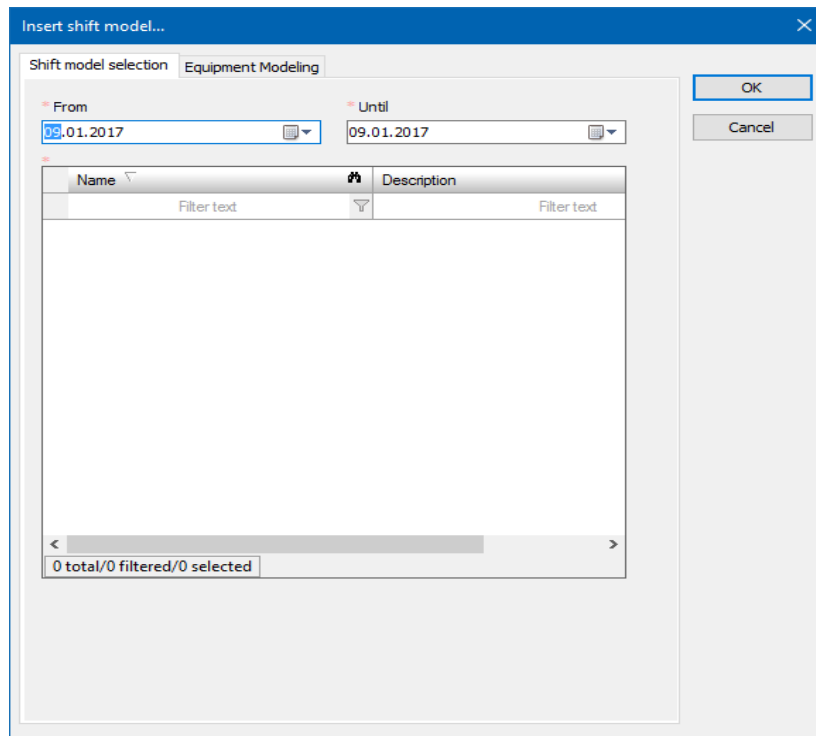
The insertion of a shift model is configured using two tabs:

- ▶ Shift model selection: Selection of the shift model and the time range.
- ▶ Selection equipment modeling: Selection of equipment groups

**Note:** Star symbols mark options that must have valid entries.

## SHIFT MODEL SELECTION

If you want to edit the list directly using the monitor, activate the Multi-Touch functionality. You can find detailed information in relation to this in the Configure interactions chapter.



Option	Description
<b>From</b>	<p>Definition of the start day by direct entry into the field or selection from the calendar. Clicking on the arrow key opens the calendar.</p> <p>Default: Start date marked in the calendar.</p>
<b>To</b>	<p>Definition of the end day by direct entry into the field or selection from the calendar. Clicking on the arrow key opens the calendar.</p> <p>Default: End date marked in the calendar.</p>
<b>Shift models list</b>	<p>Lists all configured shift models. Selection by clicking on a shift model. After closing the dialog with OK, the shift model is entered into the calendar on the highlighted day.</p> <p>Longer texts can also be displayed in the Runtime over several lines using the <b>Automatic word wrap</b> property.</p>

Option	Description
	<p>In the Editor, go to <b>Representation</b> in the properties of the respective list properties and activate the checkbox of the <b>Automatic word wrap</b> property.</p> <p>The line height must be amended manually.</p>

## CLOSE DIALOG

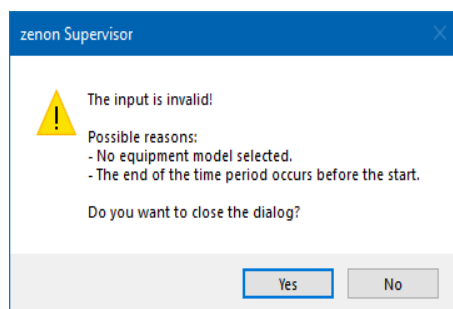
Option	Description
OK	<b>Applies settings and closes the dialog.</b>
Cancel	Discards all changes and closes the dialog.

## EQUIPMENT MODELING

Equipment modeling is configured in a similar manner to the equipment modeling for shifts (on page 47). At least one equipment group must be selected.

## VALIDATION

The entries are validated when closing the dialog by clicking on **OK**. In the event of an incorrect configuration, a dialog with the possible causes is shown.



The dialog can be confirmed with:

- ▶ **Yes:** The dialog is closed. No shifts are added.
- ▶ **No:** The dialog remains open. The configuration can be amended.

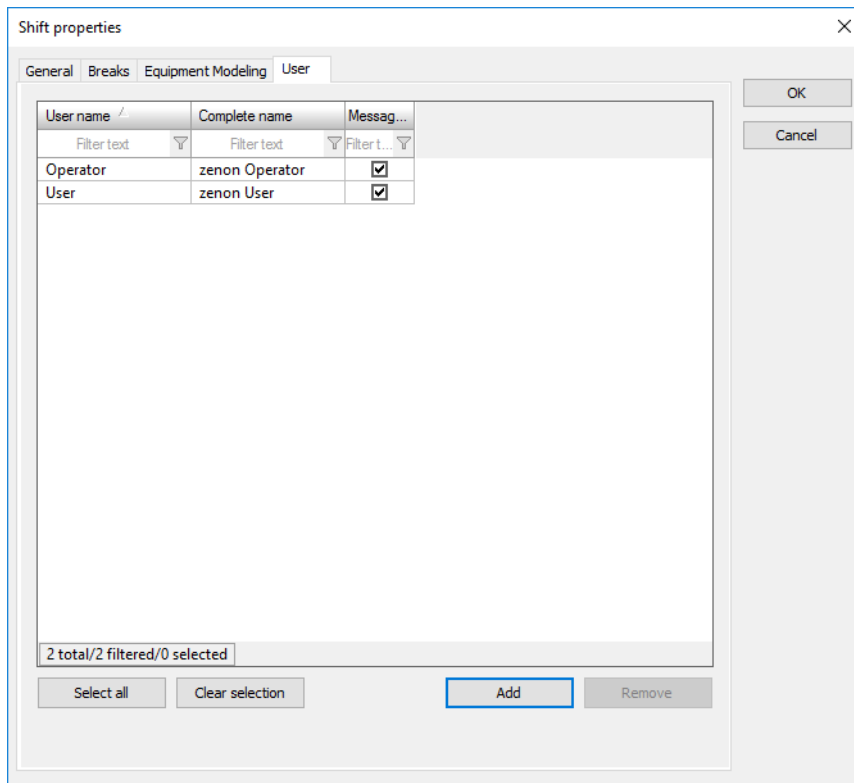
### 5.1.1.7 Assign users a shift

Users can be assigned to a shift. The Message Control module can use this link to send messages (on page 58).

To assign users a shift:

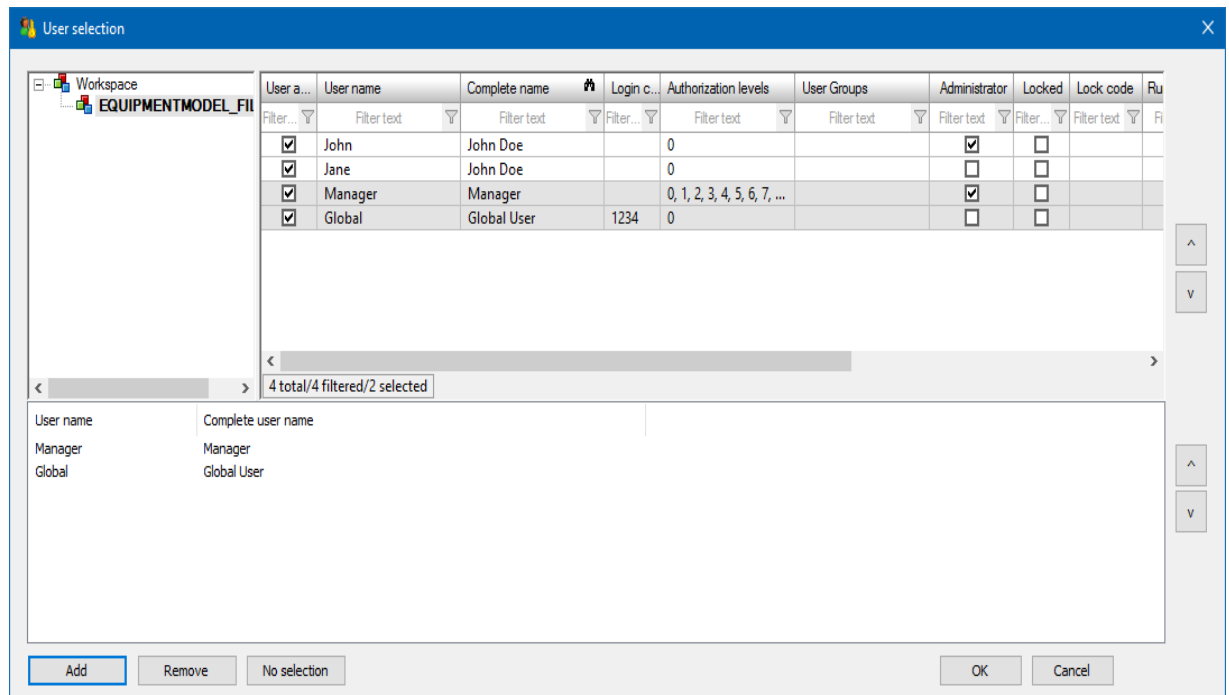


1. Select the shift in the calendar.
2. Open the dialog **Shift properties**.
3. Switch to the **User** tab.



4. Click on the **Add** button or select this entry in the context menu.

The **user selection** dialog is opened. All users in the active project who have been created are shown.



5. Highlight the desired users.
6. Click on the **Add** button.  
The selected users are added to the list.
7. Confirm the settings with **OK**.  
The users are added in the **Users** tab.
8. Close the **Shift properties** dialog by clicking on **OK**.  
The selected users are now linked to the shift.

**Note:** To use the users linked here in the **Message Control** module, the users must be assigned to a certain user group. This user group can be defined as a target in the function **Send a Message**.

### 5.1.1.8 Send message to user group with shift filter

Users that have been assigned to a shift can be notified of alarms and events automatically using the **Message Control** module.

Notification is configured by means of the two modules **shift management** and **Message Control**.

**Note:** Notification can only be used for configured shifts. Linking to shift models is not possible.

## CONFIGURATION

To notify users:

1. Link the desired user to the shift (on page 56).
2. Link the user to a **user group**.  
Ensure that, for users who need to be notified:
  - ▶ The **Message Control user** property has been activated
  - ▶ The **Message Control group** property has been activated for the user group
3. Stipulate, for the user group, the sequence in which the users are to be notified. Use the **User order** property for this. The users are notified in the stipulated order.
4. For **Message Control**, configure the **recipient** in the **Send a Message** function:
  - a) Open the function and switch to the **Dispatch Type** tab.
  - b) Select *User group with shift filter* in the **Type** option.  
The **User group selection** dialog is opened.
  - c) Select the user group configured for shift management as the recipient of the message.  
**Note:** To change the group later, select the **Recipient name** option.
  - d) Select a **method**.  
**Note:** If *group call* is selected, all recipients are notified at the same time, and consecutively with *following call* and *infinite successive call*.
5. Configure the further options of the function.

## PROCEDURE IN RUNTIME

Procedure when triggering the **Send a Message** function:

1. The function looks, in the set user group, for the first user who is configured for **Message Control**.
2. A check is carried out to see whether this user is included one of the shifts that is currently active.
3. If a user is included in an active shift, they are notified.
4. If the user is not included, they cannot be contacted or they reject the message, the next user in the user group is searched for and compared to the current shift.
5. This process is carried out until a user confirms the message or the group has been gone through in full.

The precise procedure depends on the configured method.

## METHODS FOR USER GROUP WITH SHIFT FILTER

The behavior in the Runtime depends on which method has been selected for the user group with shift filter:

Style	Procedure
<i>Group call:</i>	<ul style="list-style-type: none"> <li>▶ The message goes to all users of the selected type who are linked in a shift for which the function execution is active. All users found are notified at the same time.</li> <li>▶ If a user does not confirm the message, a message is sent to their substitute if they are linked in a shift.</li> </ul>
<i>Following call:</i>	<ul style="list-style-type: none"> <li>▶ An attempt is made to find the first user of the group who is linked to the shift.</li> <li>▶ This user is notified.</li> <li>▶ If they cannot be contacted, the next user is searched for and notified.</li> <li>▶ This is run through once until the end of the group has been reached.</li> <li>▶ If no shift is still active during the process or no relevant users are linked in the active shifts, the notification is ended. A corresponding entry is made in the CEL.</li> </ul>
<i>Endless following call:</i>	<ul style="list-style-type: none"> <li>▶ An attempt is made to find the first user of the group who is linked to the shift.</li> <li>▶ This user is notified.</li> <li>▶ If they cannot be contacted, the next user is searched for and notified.</li> <li>▶ This is run through cyclically until a user is reached.</li> <li>▶ If no shift is still active during the process or no relevant users are linked in the active shifts, the notification is ended. A corresponding entry is made in the CEL.</li> </ul>

### Note:

- ▶ Only users who are linked in a shift for which the execution of the function is active are notified.
- ▶ Depending on the configuration, messages can also be sent to users who are no longer active in any shift.  
Example: The type of sending (such as telephone) needs some time for sending. If, at the time of generating the message, there are already further messages in the queue, the new message is sent with a delay. If the shift has been switched in the mean time, the message is nevertheless sent to the user of the previous shift.

- ▶ *Following call* and *Endless following call*: No further messages are created if no user of the selected group is active in the active shift.  
Example: The message sending with endless subsequent call starts during **Shift 1**.  
None of the recipients acknowledges the message. A shift-free time of 5 seconds is configured between **Shift 1** and the subsequent **Shift 2**.  
If the timeout for acknowledgment runs out in precisely these 5 minutes, there is no recipient available at this point in time. The sending of the message is aborted. No messages are sent to their user, even after the start of **Shift 2**.

#### EXAMPLE WITH FOLLOWING CALL:

A message is sent to a group.

- ▶ The group contains the users **User 1**, **User 2**, **User 3**, **User 4**, **User 5** and **User 6**, in exactly this order.
- ▶ The **Send a Message** function is configured with the *following call* **method**.
- ▶ At the time of the initial sending, a shift is active with **User 4**, **User 5** and **User 6**.
- ▶ The function compares the users of the group to the users in the shift.
- ▶ **User 4** is notified first.  
If they do not react, **User 5** is notified and then **User 6**.
- ▶ However, at this time, the original shift has already ended and the next shift has started with **User 1**, **User 2** and **User 3**.
- ▶ Because all users are arranged in the group before **User 6**, no further message is now sent.

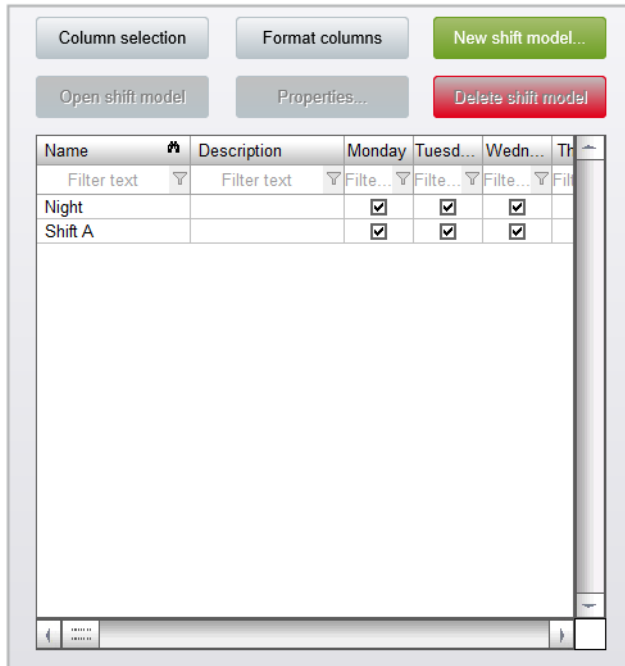
**Recommendation:** Select *infinite successive call* as a **method**. Then all users are contacted until one reacts. In our example, **User 1** would be notified after a shift change to the new shift.

### 5.1.2 Shift models

Shift models provide templates for a daily routine. They are created once and can be added to the calendar as often as desired. A daily routine can start at any desired. Shift models therefore always offer two calendar days for configuration. Shifts can also be configured and added beyond day limits.

Shift models are created and edited in the Runtime. To do this, the corresponding control elements (on page 9) must have been configured in the screen.

Shift models



## SHIFT MODELS

Elements	Description
<b>Shift models list</b>	List of existing shift models.
<b>Column selection</b>	Opens the dialog (on page 19) to select the columns to be displayed in the list.
<b>Format columns</b>	Opens a dialog (on page 20) to format the columns.
<b>New shift model</b>	Opens the dialog (on page 63) for creating a shift model.
<b>Open shift model</b>	Changes the calendar view to the display of shift models and opens the selected shift model there.
<b>Save shift model</b>	Saves the shift model opened in the calendar.  Only available if a shift model is open in the shift calendar and there are unsaved changes.
<b>Delete shift model</b>	Deletes the selected shift model after a confirmation message.

Elements	Description
Properties	Configuration of the properties of the shift model: Name and description

### 5.1.2.1 Creating a shift model

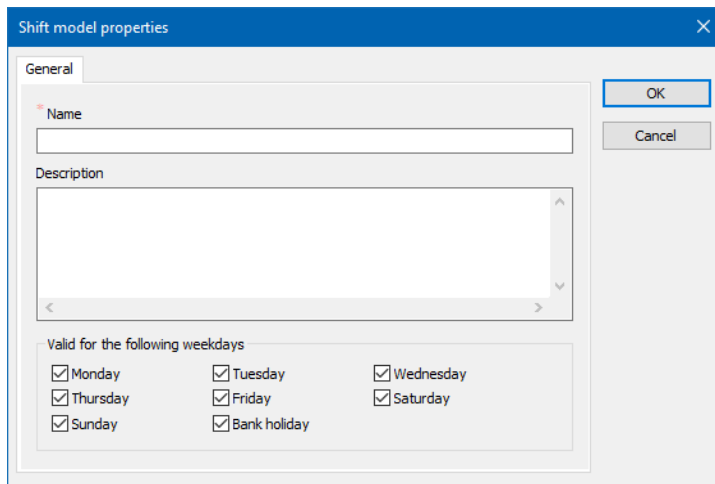
To create a new shift model:

1. In the **Shift models** area, click on the **New shift model** button.  
Alternatively, right click in the list of the shift models and select **New shift model** in the context menu or pres the **Ins** key.  
The dialog to create a new shift model is opened.
2. Give it a name and, optionally, a description.
3. If necessary, configure the weekdays on which the model is to be applied.

**Note:** If the model is limited to certain week days, when adding the model to the calendar, a shift is only entered for the days that have been selected in the model. When checking whether a model can be inserted on a certain week day in the calendar, the first day of the model is taken into account. If this is not valid, shifts from the second day are not entered into the calendar. If the first day is valid, shifts from the second day are also entered into the calendar, even if this day is invalid.

Example: A shift in the model lasts from 20:00 to 04:00. Thursday is an invalid day. If the model is added on a Wednesday, the shift is entered in full. If the model is added on a Thursday, the shift is not entered.

### NEW SHIFT MODEL DIALOG



Option	Description
<b>Name</b>	<p>Entry of the name.</p> <p>The following is applicable for names:</p> <ul style="list-style-type: none"> <li>▶ must be unique</li> <li>▶ must not be empty</li> <li>▶ must not contain one of the following characters: \.:*?&lt;&gt; '"#%</li> <li>▶ must not consist of more than 256 characters</li> </ul>
<b>Description</b>	<p>Entry of an optional description.</p> <p>Maximum length: <i>32000 characters</i></p>
<b>Valid for the following weekdays</b>	<p>Configuration of the week days on which the shift model is applied in the shift calendar.</p> <p>Selection by activating the checkbox beside of the respective weekday.</p> <p><b>Note on national holidays:</b> The valid national holidays (on page 12) are read from the <b>Feiertage.txt</b> file. No shifts are created on national holidays if the checkbox is deactivated.</p> <p>Default: All</p>

#### CLOSE DIALOG

<b>OK</b>	<p><b>Applies settings and closes the dialog.</b></p> <p><b>If errors are established during validation, the dialog is opened again and a notice of possible causes of errors is shown.</b></p>
<b>Cancel</b>	Discards all changes and closes the dialog.

### 5.1.2.2 Configure shift model

To configure a shift model:

1. Click, in the list of the shift models, on the button or the **Open shift model** context menu entry or double-click on a shift model.

The shift model is displayed in the calendar.



2. Configure the shift model.
3. Click on **Save shift model**.

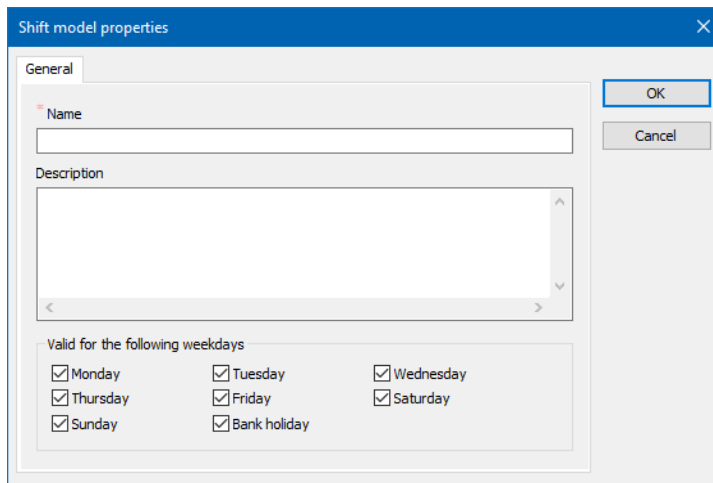
## EDIT PROPERTIES

The name and property of a shift model can be edited.

To change a property:

1. Highlight the shift model.
2. Click on the **Properties** button.  
This must have been configured for the screen.  
Alternatively: Select the **Properties** entry in the context menu.

The dialog with the shift model properties is opened.



The image shows a dialog box titled "Shift model properties" with a close button (X) in the top right corner. The dialog has a "General" tab selected. Inside the tab, there is a text field for "Name" (marked with an asterisk) and a larger text area for "Description". Below these fields, there is a section titled "Valid for the following weekdays" containing a grid of checkboxes for "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday", "Sunday", and "Bank holiday". All checkboxes are currently checked. On the right side of the dialog, there are "OK" and "Cancel" buttons.

3. Edit the desired entries:
  - ▶ **Name:** Name of the shift model.  
The name must be unique. For further limitations, see the Create shift model (on page 63) chapter.
  - ▶ **Description:** Optional description.  
Maximum length: *32000 characters*
4. Save by clicking on **OK**.

The changes are applied immediately, saved on the server and distributed to all clients. This is also applicable if the model is edited at the same time on another client. The content of the model - the shift configurations - is not changed in the process. These are saved and distributed separately. You can find detailed details on this in the **Behavior in the network** (on page 73) chapter.

### 5.1.2.3 Delete shift model

To delete a shift model:

1. Select the desired shift model in the **shift models** area.  
Multiple selection is possible.
2. Click on the **Delete shift model** button.  
Alternatively, right click in the list of the shift models and select **Delete shift model** in the context menu or press the **Del** key.  
The dialog to confirm the deletion process is displayed.
3. Confirm this when requested to do so.  
The shift model is deleted.  
If the shift model is shown in the calendar, it is switched to the normal calendar view. If the shift model is deleted from another computer, a corresponding message is shown.

**Note:** The deletion of shift models is documented by means of an entry in the Chronological Event List.

## 5.2 Copy and add shifts

Shifts can be copied and pasted in the calendar.

To copy and paste shifts, use:

- ▶ The **Copy shift** and **Insert shift** buttons
- ▶ The **Copy shift** and **Insert shift** commands in the context menu
- ▶ The keyboard shortcut **Ctrl+C** and **Ctrl+V**

#### Buttons/commands:

- ▶ **Copy shift:** Copies the selected shift to the clipboard.
- ▶ **Insert shift:** Pastes a copied shift from the clipboard into the selected day.



#### **Attention**

Insertion is always only possible in the same project and in the same view.

#### **That means:**

- ▶ Shifts from shift models can only be added into shift models
- ▶ Shifts from the calendar can only be added into the calendar

## 5.3 Filter information with shifts

Shifts can serve as filters for the display of information in other screens.

The following can be filtered:

- ▶ AML
- ▶ Archive revision
- ▶ CEL
- ▶ ETM
- ▶ Report Viewer
- ▶ Time/Lot/Shift filter

To filter information with shifts, use:

- ▶ Filter for **screens** (on page 26) in screen switching for the shift management
- ▶ Shift filter in the screen switching for:
  - ▶ AML:  
Only alarms whose incoming time is within a shift from the shift filter and whose equipment linking is in the shift are shown. If no equipment filter is defined for a shift, no check for equipment linking is undertaken; only the time is taken into account.
  - ▶ Archive revision:  
Only the entries that are appropriate for the time filter for shift management and whose variables are appropriate for the equipment model filter of the screen and each shift to be checked are shown.
  - ▶ CEL:  
Only events whose time is within a shift from the shift filter and whose equipment linking is in the shift are shown. If no equipment filter is defined for a shift, no check for equipment linking is undertaken; only the time is taken into account.
  - ▶ ETM
  - ▶ Report Viewer
  - ▶ Time/Lot/Shift filter

### Notes on the configuration of screen switching:

- ▶ The shift filter requires a configured time filter. If the time filter is set to the **No time filter** option, the shift filter is deactivated. A notice of the cause of the deactivation is shown.
- ▶ If the lot filter is activated, the shift filter is automatically deactivated. Both filters mutually exclude one another. A notice of the cause of the deactivation is shown.

## FILTER FOR SCREENS IN SCREEN SWITCHING FOR THE SHIFT MANAGEMENT

To filter data in screens for shifts

1. For the *Shift Management* screen, configured the **Apply selection** (on page 9).
2. Stipulate in the screen switching in the **Screens** (on page 26) tab which screen is to be filtered. Several screens can be selected.
3. Call up the screen to be filtered in the Runtime at the same time as the *shift management* screen.
4. Select the shifts that are to serve as a filter.
5. Click on the **Apply selection** button.

The linked open screens show your information filtered for the selected shifts.

### 5.3.1 CEL

The CEL can be filtered using:

- ▶ The **Screens** tab in the screen switch to shift management
- ▶ The **Shift** in the screen switching to a CEL screen

## FILTER USING SCREENS IN SCREEN SWITCH SHIFT MANAGEMENT

In the screen switch, you can configure the *CEL* screens for which a shift filter is applied. All *CEL* screens that have been opened and selected in the screen switching are then expanded in the Runtime. Filtering is carried out if a shift has been selected in the shift calendar and the **Apply Filter** button is clicked on.

Only entries that meet the following conditions are shown in the CEL:

- ▶ The time stamp is within a shift from the shift filter.
- ▶ Your equipment linking is also represented in the shift. The filter forms the intersection of both equipment linkings.  
Note the **Hierarchical filter** option when configuring the equipment linking of shifts. With the option active, subordinate equipment groups that have not been actively selected for the CEL can also be included in the filter.  
If no equipment filter is defined for a shift, only the time is taken into account for this shift.

The CEL filter settings are automatically amended:

- ▶ The time filter is set to *absolute*.  
It contains the following values:
  - ▶ Start time: Earliest start time of the selected shifts.
  - ▶ End time: Latest end time of the selected shifts.
- ▶ The lot filter is deactivated.

- ▶ All other filters are applied as configured.
- ▶ The filter text in the CEL screen also shows the start time and end time of the shift filter.

The button filter in the CEL screen is deactivated until the screen is called up with its original filter. The overwritten filter is retained on reloading.

## FILTERING VIA SHIFT TAB IN THE SCREEN SWITCHING TO CEL

When switching screen to a *CEL* screen, the display of the entries can be filtered for shifts.

To filter the CEL screen for shifts:

1. Configure screen switching to the CEL screen.
2. Configure the time filter.
3. Deactivate the lot filter if it is active.
4. Configure the lot filter.

You can read details in the **Chronological event list** manual in the **Shift** chapter.

**Note:** The **Always show system messages in list** option in the screen switching to a CEL screen is taken into account by shift management.

### 5.3.2 Extended Trend

*Extended Trend* screens can be filtered:

- ▶ via linked screens in the screen switching to the shift management
- ▶ via linked screens in the screen switching to *Extended Trend*
- ▶ In the screen switching to an *Extended Trend* screen using the **Shift** tab for the time filter

## FILTER USING SCREENS IN SCREEN SWITCH SHIFT MANAGEMENT

Extended Trend screens can be added to the shift screen when selecting a screen in screen switching. The shift filter is added to all screens that are open and selected in screen switching. When clicking on the **Apply selection** button in the shift screen, the linked Extended Trend screens are filtered with the selected shifts.

## FILTER USING SCREENS IN EXTENDED TREND SCREEN SWITCHING

The settings of the Shift Filter tab in screen switching can be replaced with a separate filter screen.

To do this:

1. Configure a *time/lot/shift filter* screen.

2. Configure it with the control elements for shift filtering.
3. Link the screen to the screen switching to Extended Trend: -> **Display** tab -> **Runtime** group -> **Replace time filter with screen** option.

#### Particular features in Runtime:

- ▶ A **No time filter** time filter is not permitted.
- ▶ If, for the shift filter, the **apply shift filter directly** option is selected, the **switch to "show shift selection" mode** is activated but the criteria are selected so that no shift is found, the time filter is overwritten with an invalid value. In this case the filter is reset to the default settings (1 hour relative).
- ▶ If the **comparison with 2nd time period** option is activated and the screen is assigned a filter either by means of a shift filter screen or a *shift management* screen, both filters are overwritten with the same value.

## **FILTERING VIA SHIFT TAB IN THE TIME FILTER OF THE SCREEN SWITCHING TO EXTENDED TREND**

When screen switching to an *Extended Trend* screen, the display can be filtered for shifts:

1. Configure screen switching to the *Extended Trend* screen.
2. Configure the time filter.
3. Deactivate the lot filter if it is active.
4. Configure the lot filter.

You can read details in the **Extended Trend** manual in the **Shift** chapter.

## **BEHAVIOR IN RUNTIME**

The following is applicable for the shift filter in Runtime:

- ▶ When comparing to a second time range, one shift filter is used for both time ranges. If a new filter is assigned to the screen, both filters are overwritten with the same value.
- ▶ A *No time filter* time filter is not permitted.
- ▶ If the time filter is configured as relative, the shifts to be displayed are only determined at the time they are called up.  
That means:
  - ▶ At a later point in time, shifts that have been newly added or that have already expired are not taken into account.
  - ▶ Only the shift that was the earliest or latest at the time of being called up is taken into account. This then moves from the display of the scale as time passes.

- ▶ If the shift filter is configured as **apply shift filter directly** plus **switch to the "show shift selection" mode**, but no shifts can be found, then:
  - ▶ The time filter becomes invalid
  - ▶ The time filter is automatically set to the default value: **Relative time period 1 h**
  - ▶ The automatic correction is shown in the filter dialog when the **Diagram** button is pressed

### 5.3.3 Report Viewer

*Report Viewer* screens can be filtered:

- ▶ via linked screens in the screen switching to the shift management
- ▶ in the screen switch to a *Report Viewer* screen via:
  - ▶ A linked time filter screen in the **Runtime** tab
  - ▶ The **Shift** tab for the time filter

## FILTER USING SCREENS IN SCREEN SWITCH SHIFT MANAGEMENT

Report Viewer screens can be added to the shift screen when selecting screens in screen switching. The shift filter is added to all screens that are open and selected in screen switching. When clicking on the **Apply selection** button in the shift screen, the linked Report Viewer screens are filtered with the selected shifts.

### Note:

- ▶ Only **Time filter 1** is overwritten. All other filters are unchanged.
- ▶ The shift filter has an effect on AML, CEL and archive data.
- ▶ Only entries for AML, CEL and archives of variables with appropriate linking and appropriate time stamp are shown.

The **Filter** button in the screen is deactivated until the screen is called up again with its original filter. The overwritten filter is retained on reloading.

## FILTERING VIA TIME FILTER SCREEN IN REPORT VIEWER SCREEN SWITCHING

A time filter can be used to activate a shift filter for an open Report Viewer screen.

To do this:

1. Open the **Runtime** tab in the screen switch to the Report Viewer.
2. For the **Replace time filter 1 with screen in Runtime** option, select a *time/lot/shift filter* screen.

In the screen in Runtime - depending on the configuration of **time filter 1** - relevant content for lots or shifts is displayed.

## FILTERING VIA SHIFT TAB IN THE TIME FILTER OF THE SCREEN SWITCHING TO REPORT VIEWER

When screen switching to a *Report Viewer* screen, the display can be filtered for shifts:

1. Configure screen switching to the report viewer screen.
2. Configure the time filter.
3. Deactivate the lot filter if it is active.
4. Configure the lot filter.

For details, read the **Shift** chapter in the **Reporting** manual.

### 5.3.4 Time / lot / shift filter

A *time/lot/shift filter* screen can be filtered for shifts in the screen switching using the **Shift** tab.

To filter the screen for shifts:

1. Configure a screen switch to a *time/lot/shift filter* screen.
2. Configure the time filter.
3. Deactivate the lot filter if it is active.
4. Configure the lot filter.

For details, read the **Shift** chapter in the **Screens** manual.

**Note:** In order for the control elements for the shift filters to be displayed in Runtime:

- ▶ The **Show shift selection** option must be selected in the screen switching.
- ▶ The time filter must be configured.

## 5.4 Carry out SQL export

Shifts and breaks can be exported to SQL.

To export shifts and breaks in the Runtime:



1. Create a function (**on page 27**) **SQL export shift calendar** .  
**Attention:** If the connection is configured incorrectly, no data can be exported in the Runtime.
2. Execute the function in the Runtime.  
The shifts that correspond to the configuration are exported.

The following is applicable for SQL export:

- ▶ Naming of the target tables: **[project GUID]\_SHIFT\_[GUID of the equipment model group]**.
- ▶ Only connected groups are exported.  
That means: If a shift is in a time filter, but not yet concluded, it is not exported.
- ▶ Each shift is only exported once.  
It is inserted into the respective table once. Subsequent changes to a shift are not applied to the pre-existing table.
- ▶ Errors are logged.



### Attention

If the export fails, the shifts to be exported are not transferred again during the next export. Gaps can thus occur.

**Recommendation:** Configure the export as overlapping. To do this, call up the function every day, for example, and export the shifts for 2 days.  
Or activate the **Show this dialog in the Runtime** option in order to allow the user to reconfigure the time range in the Runtime.

## 6 Behavior in the network

### FUNCTION AUTHORIZATIONS

In principle, all buttons and context menus are available, regardless of the required rights. The first time it is executed, a check is carried out to see whether the logged-in user is authorized to carry out the action. The properties of the shifts and shift models can always be displayed. This is also applicable if the rights for editing are missing.

Procedure:

- ▶ A check is carried out to see whether the token for editing is present in the network.  
If there is no authorization, the process is canceled with an error message.

- ▶ A check is carried out to see whether the logged-in user has the necessary rights.  
If there is no function authorization, the process is canceled with an error message.  
Exception: If a temporary login has been activated, the login dialog is shown. If this login is unsuccessful, the process is ended with an error.

## SHIFTS AND SHIFT MODELS

When creating and editing shifts and shift models in the network, the following is applicable:

- ▶ Editing is not carried out on the server directly, but with a local copy.  
All changes are sent to the **Server 1** and to the **Server 2** and updated there.  
This concerns the creation, changing and deletion of shifts and shift models, as well as the insertion of shift models into the shift calendar.
- ▶ If several users are editing the same shift or the same shift model, the changes made by the user who has saved last are applied.
- ▶ When the model is saved, only the content is saved, not the name and description.

## REDUNDANCY

The Shift Management module supports redundancy.

### Note:

If the server fails and the standby server takes over as a new server, the following is applicable on the new server:

- ▶ The list of the shift models is renewed.
- ▶ A shift model that is currently open will be closed. Changes that have not been saved are discarded in the process.

# 7 Time zones and date limits

Rules have been defined for the behavior of shift management with regard to time zones, time switch and date limits.

## 7.1 Display of date limits

When creating a shift that is on the second day of a shift model and whose end relates to the border between two days, Shift Management acts as follows:

- ▶ 24:00 is understood 00:00 of the following day.
- ▶ This 00:00 is shown as its own day in the shift properties.

- ▶ This day only permits the time 00:00.
- ▶ If an attempt to select another time for this day is made, a corresponding message is shown.
- ▶ For the shift end on the third day, only 00:00 can therefore be set as the time because the shift model is limited to two days.

**Note:** This limitation is only applicable for shift models. Any possible time can be entered as a shift end in the shift calendar.

## EXAMPLE

- ▶ Configured shift time:
  - ▶ 11. 11. 2017
  - ▶ from 4:00 p.m. - 12:00 a.m.
- ▶ Display:
  - ▶ Start: 11. 11. 2017, 4:00 pm
  - ▶ End: 12. 11. 2017, 12:00 am

## 7.2 Time zones and time switches

Shifts are automatically amended to the switch from daylight saving time to standard time in accordance with certain rules.

When inserting a shift, a dialog is opened in which the start time and end time are shown according to the selection. If an unavailable time point is selected when switching, it is then corrected automatically. The times can be amended in the dialog. Time points that are not available are always corrected however.

- ▶ Switch from standard time to daylight saving time:  
A time indication of 02:00 is automatically corrected to 01:00.  
Background information: Because there is a switch at 02:00 to 03:00, 02:00 does not exist for the calendar. Entry of 02:00 is not possible.
- ▶ Switch from daylight saving time to standard time:  
A time indication of 3:00 is automatically corrected to 2:00.  
The display in the calendar can depend on the time zone in which the calendar is displayed. For example, in the local calendar with a standard time switch, the shift can be shown with a length of 2 hours. In another calendar, the shift - depending on the time zone - can also be shown for 3 hours. In Yakutsk, for example, where there is no time switch.

## 8 Keyboard shortcuts for Shift Management

The following keyboard shortcuts are available for *Shift Management* in zenon:

### RUNTIME

Action	Key
Create new shift or shift model	Ins
Edit shift or shift model	Enter
Delete shift or shift model	Del
Aktion	Taste