ComBridge Studio

EVOLUTION

# Version 1.1
# User Manual

Revision: 28/08/2011

IPAS

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# 1. Preface

Thank you for choosing CBS Evolution. IPAS is one of the leading providers of web-based visualisations. With its previous HTML-based visualisation software CBS Suite, IPAS already offered solutions for large-scale projects such as airports, shopping centres, office buildings and scattered premises. All our experience in realising these projects with their hundreds of users, large quantities of data and hundreds of KNXnet/IP gateways has gone into our latest development: CBS Evolution. In addition to status display and function control, CBS Evolution offers the opportunity to project and configure increasingly complex tasks such as scenes, annual schedules, graphics logic and many more. Based on Adobe Flash, design-oriented elements and functions can now be easily integrated into the visualisation making the representation of reality easier than ever before. Even a complex database analysis can now be displayed in an individual and attractive design. Another major advantage is that CBS Evolution is independent from the operating system as it is directly configured on the CBS Evolution Server. All that the user needs is a standard browser in connection with Adobe Flash player. Flash player can be downloaded easily and free-of-charge from the Internet. The project designer connects to the CBS Evolution server via the browser to project the application directly onto the server. Therefore, no additional software is required. The CBS Evolution projection software is a standard IPAS tool that is also used to project other visualisation components, such as the ComBridge HCC. This is a major advantage for integrators as they only need to be able to use a single software to commission various ComBridge devices.
CBS Evolution also enables the integration of other protocols such as Bacnet or OPC.

For further information about these products or our training courses, please go to www.ipas-products.com

Our developers have endeavoured to render CBS Evolution future-proof. A simple update mechanism ensures that CBS Evolution can always be brought up-to-date. Information regarding updates and upgrades is available on our website.
Figure 1 shows a typical CBS Evolution system structure. A KNXnet/IP gateway is used to connect to the KNX installation. The projecting PC, the CBS Evolution Server and the KNXnet/IP gateway are connected via the TCP network.

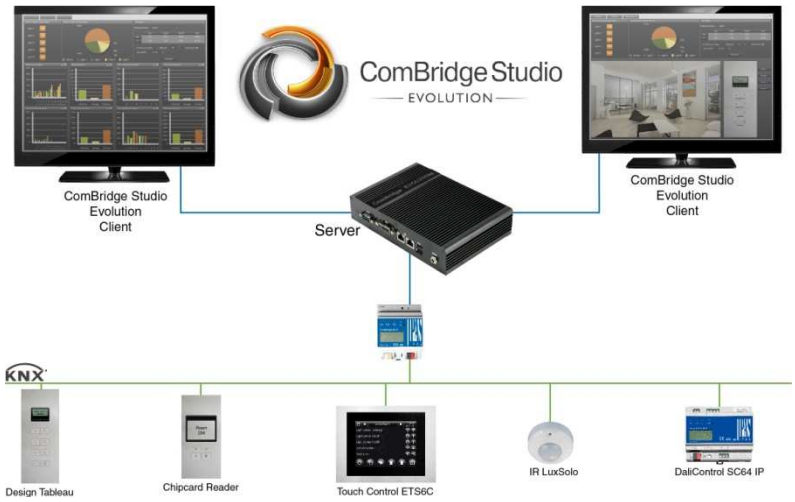


*Abbildung 1:* KNXnet/IP network

With the above configuration the user has numerous services and protocols at his disposal, all of which can be configured and projected easily with CBS Evolution Editor. Figure 2 gives an overview of these services and protocols.

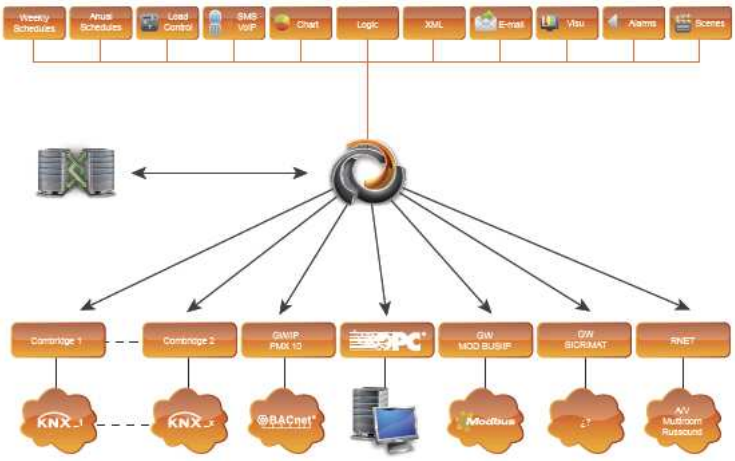


*Abbildung 2:* CBS Evolution services and protocols

# 2. CBS Evolution installation

## 2.1. System requirements

CBS Evolution requires only one browser for both configuration and application, e.g. Internet Explorer, FireFox or Safari. In addition, Adobe Flash from version 10 upwards needs to be installed. Adobe Flash is imperative for the display and editing of web pages. For the initial commissioning, a screen, keyboard and

mouse can be directly connected to the CBS Evolution Server. However, the configuration may also be performed remotely from a client PC on the network. The CBS Evolution delivery package includes:

*CBS Evolution Server PC with pre-installed software*
*Power supply 12V DC 3 A*
Installation Quick Guide
Wall holder

*Abbildung 3:* CBS Evolution Server

*Abbildung 4:* CBS Evolution Server front panel

Figure 4 shows the front panel of the ComBridge Evolution server with power switch (1), 2 USB ports (2) and serial COM ports.

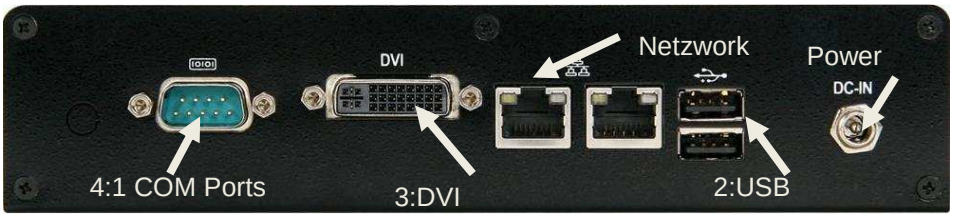


*Abbildung 5:* CBS Evolution server rear panel

Figure 5 shows the server's rear panel with its 12V DC connector, 2 further USB ports and one more COM port, the DVI monitor connector and 2 network connectors.

The CBS Evolution server's default settings are as follows:

Network settings:

Eth0: DHCP
Eth1: 192.168.1.131

For the initial commissioning, a screen, keyboard and mouse can be directly connected to the CBS Evolution Server.

However, the configuration may also be performed remotely from a client PC on the network. In this case, the browser (IE, FireFox, etc.) is started on the client PC.

Attention: To enable access to the CBS Evolution Server, it is imperative that Adobe Flash from version 10 upwards be installed on the client PC. A free download is available on www.adobe.com.

To start configuring the CBS Evolution Server, open the browser on the client PC and enter http://192.168.1.131 to load the login screen.

Alternatively you can open the login screen with the corresponding DHCP address.

By default, there are two user options:

"User" opens the demo project that is included in the delivery package. If you choose "Editor" together with the password 00000, click on

to open the demo project.

Before logging in, you can select the language in the bottom left-hand corner of the screen. CBS Evolution currently supports German, English, Spanish, Dutch and French.

Use the pull-down menu to select a language.


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*Abbildung 6:* CBS Evolution login screen

## 3. CBS Evolution license conditions

The CBS Evolution server is licensed. The license conditions are displayed when logging in for the first time. Figure 7 shows the license conditions.

*Abbildung 7:* License conditions in CBSE

The language can be selected in the footer. Use Previous to go one page back and Next to go to the next page. Press Accept to accept the terms and conditions. Once you have accepted the agreement, the license window closes. You can now open the application.

| |
|---|
| If there are several users, each one has to agree to the terms and conditions before the application can be opened.<br>The license terms and conditions are not displayed in CBSE Editor. |

# 4. CBS Evolution - Editor

Log in as “Editor“, to open the CSE Editor project administration.

## 4.1. CBSE project administration

The basis for a visualisation with CBS Evolution is a project. The *CBSE_Demo* project is pre-installed by default.

To open the Editor you need to either open an existing project or create a new one. You will be asked which of the two you would like to do directly after the login as *Editor*.

The project administration opens after the login or via *File/New/Project* as shown in figure 8. All projects are displayed in the main window. If you select *CBSE_Demo*, you can open the project in the Editor by clicking on Open project. When a project is selected, project information is displayed at the bottom of the window. Click on New to open the entry mask for a new project. To create a new project, all you need is a project name. Click on Import to import a secure project. Click on Delete to delete a selected project.

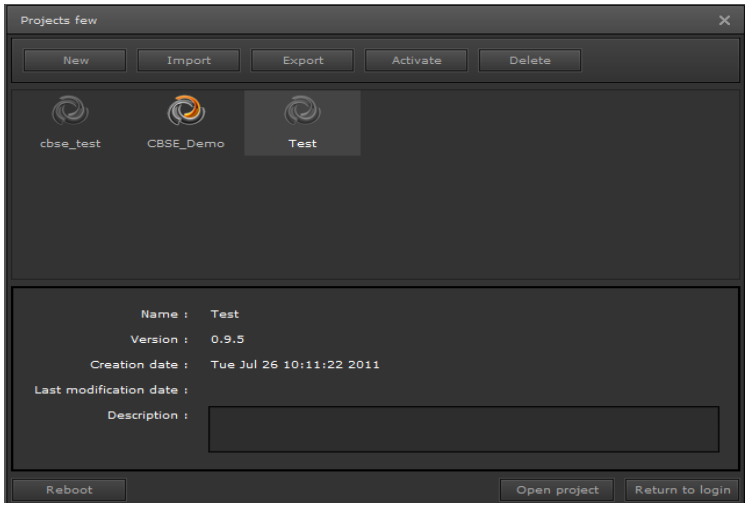
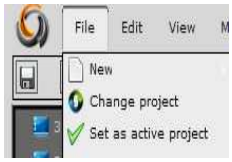



*Abbildung 8:* Project administration in CBS Evolution




To edit a project, it has to be activated in CBS Evolution. Choose *File/Set as active project* from the main menu or press Activate in the project selection window. To activate another project, select *File/Set as active project*. Once a project is selected, it can be exported to a PC for data back-up by

clicking on Export .

The active project is highlighted through a coloured symbol.

Inactive projects are shown with a grey symbol.

Open a project to access CBS Evolution Editor.

The entire configuration is performed in the CBSE Editor and is saved on the CBS Evolution database, which is located on the CBS Evolution Server. No project data is saved on a client PC.

Figure 9 shows the CBSE Editor structure. The main tool bar is located at the top. Beneath the tool bar are graphic symbols for the most important editing functions such as Save, Delete, Copy, Cut, etc.
The area in the middle of the screen is the work space to edit the visualisation. To the left of the work space is the function menu and to the right the properties menu, which is displayed according to the selected function.

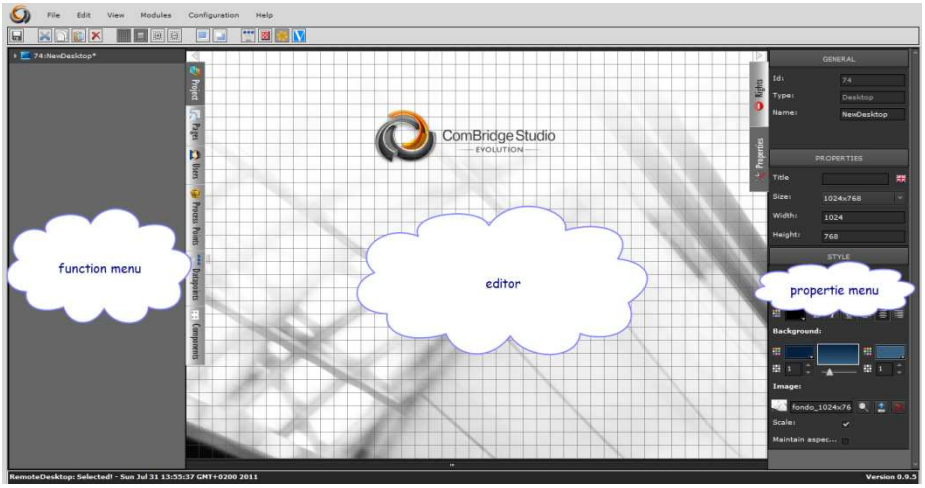



*Abbildung 9:* CBS Evolution Editor desktop

In the footer, project data is displayed on the left and the current project version on the right.
The next chapters describe the steps needed to create a visualisation project and to configure different functions.

## 4.2. Configuring the CBS Evolution Server

Before you can begin the actual configuration, you need to set the network configuration. Network settings are necessary to adjust the standard settings to the network conditions of the project. Select *Configuration/Configuration network* from the main menu.

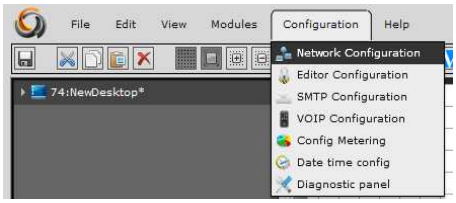



*Abbildung 10:* Opening the network configuration

The following configuration mask opens.

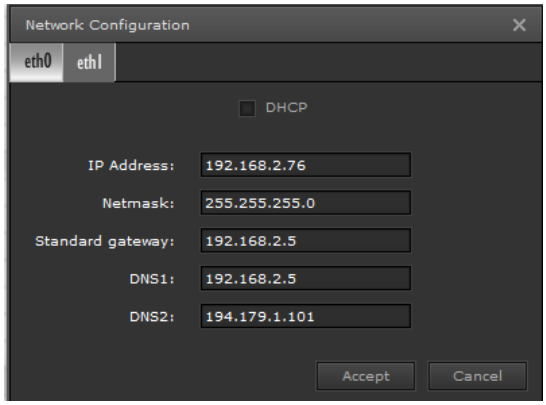



*Abbildung 11:* Network configuration

The CBS Evolution server has two network connectors. Depending on the application, one network connector can, for example, be used for the KNX Bus connection and the other for the configuration.

Attention: If you use both connectors, please ensure that the subnet mask for each network is different to guarantee that routing between the network routers is possible.

Do not tick the DHCP box (see figure 11) if the CBS Evolution Server is to work with a fixed IP address. Enter the fixed address in the field *IP address*. The IP

address of the standard gateway which connects to the internet is entered in the field *standard gateway*. To enable access via the Internet, this entry is imperative. The CBS Evolution Server also requires a valid DNS address. Normally the standard address and an alternative are entered and marked in the entry field with *DNS 1* and *DNS 2*.
If you are using both network connectors, you need to repeat these steps for the second connector.

## 4.3. Configuring the Editor

By default the CBS Evolution Editor is opened with the user name “Editor“ and the password ”00000“. To configure the Editor please select the menu point *Configuration/Configuration Editor*.

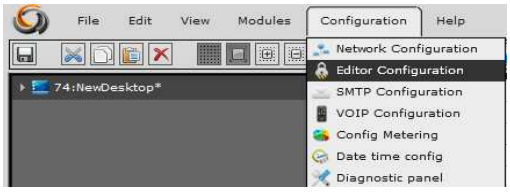



*Abbildung 12:* Opening the Editor Menu

*Abbildung 13:* Editor configuration

The following settings are required for the Editor:

| | |
|---|---|
| User image: | Select a user picture or symbol for the Editor. The user image has the format 43x43 pixels. |
| Name: | The name is displayed next to the user image. |
| User name | User name |
| Old password: | Password prior to change (by default 00000) |
| New password: | New password (the password can only consist of |

| | |
|---|---|
| | numbers between 0 and 9) |
| Confirm password: | Confirmation of the new password |
| Language: | User language for the Editor |
| Visible: | If this field is selected, the Editor appears on the login screen. |

If the field “Visible“ is not selected, the “Editor“ does not appear on the login screen. If you still want to open the Editor, use the mouse to click on an empty user field and type the name “Editor“. You can now login with the Editor password.

## 4.4. Integrating KNXnet/IP gateways

CBS Evolution connects to a KNX installation via a KNXnet/IP gateway. Several KNXnet/IP gateways can be connected to a CBS Evolution Server at the same time. In this case, CBS Evolution can easily connect to various KNX installations via the TCP network.

Use *File/New/KNXnet/IP Gateway* to open the menu „KNXnet/IP Gateway configuration“.

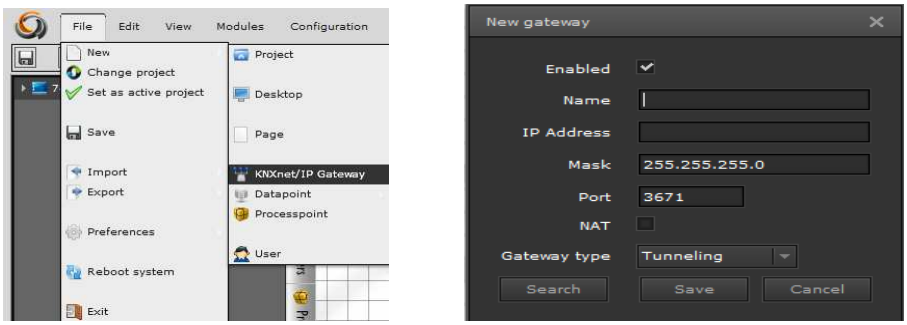



*Abbildung 14:* KNXnet/IP gateway menu and registration

Figure 14 shows the configuration window for the registration of KNXnet/IP gateways. To ensure that group addresses are unambiguous within CBS Evolution, each registered gateway is given a unique name and a corresponding IP address. Enter the unique name in the field “Name“ and the IP address of the KNXnet/IP gateway in the field ”IP Address“ below. The subnet mask of the network has to be entered in the field “Mask“. Communication with the KNX-Bus is via Port 3671. This port is reserved for KNX communication and is not usually changed.

“NAT“ stands for “Network Address Translation“ and is used for access via the

Internet for example to break down DNS addresses. To break down the link *http://ipasnet.dyndns.org* , NAT has to be activated.

The KNXnet/IP protocol supports not only tunnelling but also object-server connections. A tunnelling connection is a point-to-point connection to a device. This type of connection is, for example, used for ETS programming. An object server connection only transmits group addresses. If the object server connection is available for KNX communication with CBS Evolution, it should be used instead of the tunnelling connection.

All IPAS ComBridge gateways support both connection types. A ComBridge gateway can therefore simultaneously provide the tunnelling connection for ETS programming and the object server connection for the visualisation.

The KNXnet/IP protocol supports functions which make it possible to search for KNXnet/IP gateways within a network. The search function is performed via a Multicast command. To enable the functioning of Multicast in connection with KNXnet/IP devices, a special Multicast address is required. The KNX Association has registered the Mullticast address 224.0.23.12 for KNXnet/IP devices.

Click on Search to find KNXnet/IP gateways within the network.

To find KNXnet/IP gateways, Multicast has to be available on the network.

All available gateways are listed. The required gateway can be selected from the list.

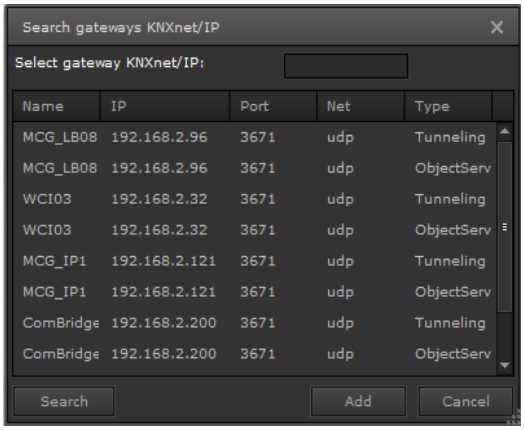



*Abbildung 15:* Gateway Search View

Figure 15 gives an example of a list of KNXnet/IP gateways after a successful

search.

Click on Add to save the settings and on Cancel to exit without saving.

NAT connections always need to be made manually. Essentially, NAT should always be selected

## 4.5. Data and process points in CBS Evolution

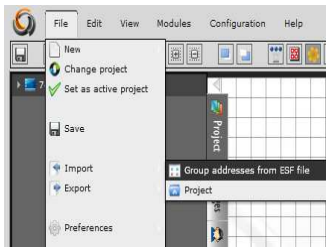
A great variety of data formats can be processed in CBS Evolution. Typical formats are KNX group addresses, OPC items, virtual objects, Modbus objects or Bacnet objects. In CBS Evolution each one of these formats is called a data point. If necessary, data points are imported like group addresses from an ESF-File via *File/Import*.

Actions such as switching a light object are performed in the application. The process point receives the event and forwards it to the data point. Process points are hence the link between application and data point.

*Abbildung 16:* Process and data point in CBS E

### 4.5.1. ETS group addresses as data points

In CBS Evolution ETS group addresses can be imported in form of an ETS-OPC export. The ETS OPC export is a text file with file extension „*.esf*“ ( ☛ Appendix: ETS OPC export).




Use File/Import/Group addresses from ESF file to open the Import mask.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Use the pull-down menu *Database* to select where you would like to save the ESF file. In figure 17 Schulung_Platz1 has been selected.

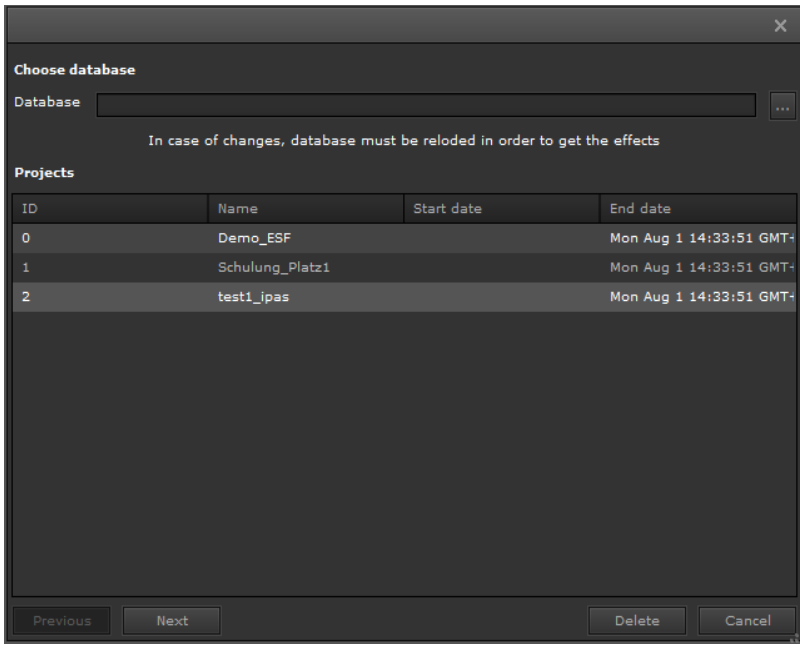



*Abbildung 17:* Group address selection

Click on Next to display the group addresses.

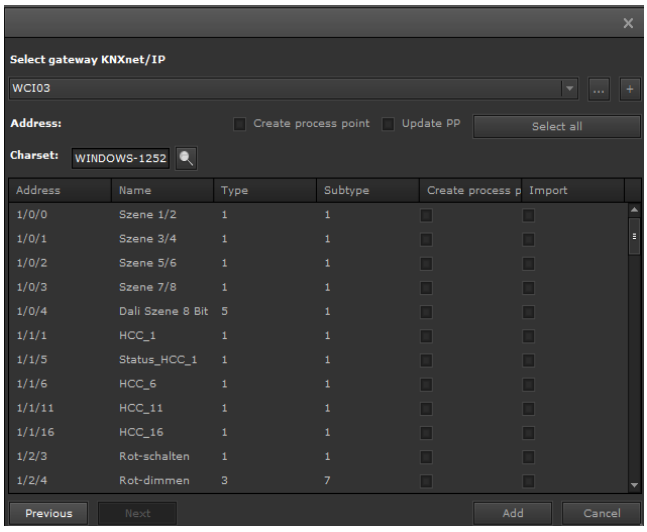



*Abbildung 18:* ETS group addresses as data points in CBS Evolution

Figure 18 shows the imported ETS group addresses. A KNXnet/IP gateway can be assigned to each data point. Select the gateway from the pull-down menu. MCG01 Click on + to open the configuration for

the registration of further gateways. Data points can be added individually or all together. To select several data points at the same time, use the <Ctrl> button. Select all Once you have selected all required data points, click on Add to insert these into CBS Evolution.

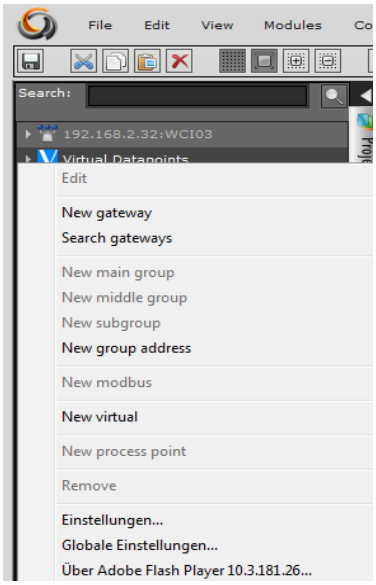
If you select Create process point and Select all when adding data points, the process points that correspond to the group addresses are created at the same time.

All elements and functions are linked via process points.

### 4.5.2. Access to the project database

This function is still under preparation.

### 4.5.3. Virtual objects as data points




Virtual objects are objects that are not linked to a specific type of data point. If, for example, you would like to start a scene from the CBS Evolution visualisation, you can create a virtual object as scene trigger. Virtual data points are created in the *Virtual Datapoints* folder under function menu Data Points. Physically, virtual data points are nothing but placeholders without data format. They therefore only consist of a name.

To create a new virtual data point, select the folder Virtual Datapoints from the data points menu and press the right mouse button.

Enter a name for the new data point.

The data point can now be assigned to a virtual process point.

The CBS Evolution Client Manager communicates with virtual objects, for example in order to connect to other protocol types such as OPC or Bacnet. To do this, a list of connections is required, which establishes the relationship between a virtual object and a protocol command. For example, in the case of OPC, the names of the virtual objects are related to the OPC items.

## 4.6. CBS Evolution process points

CBS Evolution communicates with connected systems via process points. The basic information from a data point corresponds to the parameters of a process point. It is therefore usually advisable to automatically create the corresponding

data points when importing group addresses. For special functions, a process point can be individually configured or even newly created.

Click on the left-hand side menu *process points* to display the existing process points.

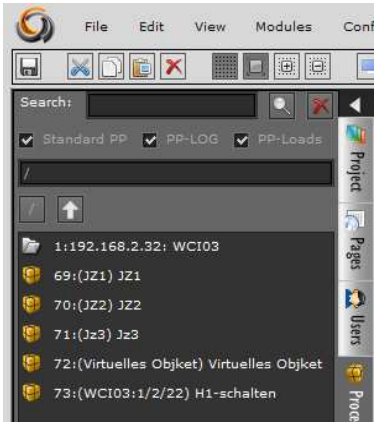



*Abbildung 19:* Process points display

Like data points, process points are displayed in a tree structure, similar to the ETS. A double-click on the main group opens the next level. The full text search engine is located in the menu header. The search engine filters according to standard process points (PP Standard), process points whose value is saved on the database (PP in DB) or process points used in the load administration (PP Load).
Click on to return to the previous level. Click on to get directly to the gateway source. If you have a large number of data and/or process points the filter and navigation elements make the search for process points significantly easier.
Double click on a process point to open its configuration window.

Figure 20 shows the configuration window of a process point.

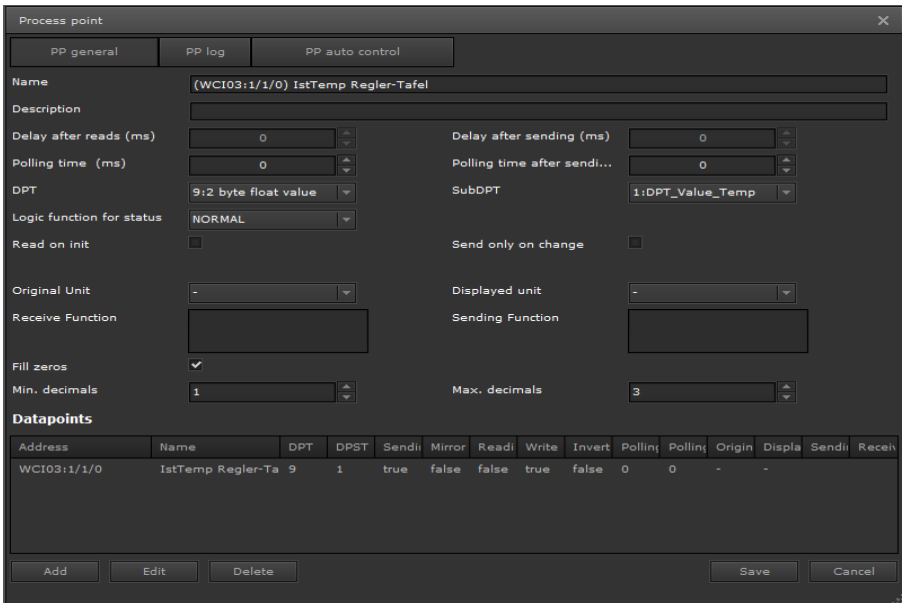



*Abbildung 20:* Process point configuration

**Name**: Name of the process point (any name can be chosen). If a process point is created automatically, its name consists of the gateway name and group address.

**Description:** Description field for the process point

**Delay after reads:** If two or more data points are assigned to a process point, you can enter the time in milliseconds after which the next telegram is read by the bus.

**Delay after sending:** If two or more data points are assigned to a process point, you can enter the time in milliseconds after which the next telegram is sent to the bus.

**Polling time:** Polling time in milliseconds after which the process points are periodically queried.

**Polling time after sending**: If a response telegram is received for the process point, you can enter the response delay time in milliseconds before all other data points are updated.

**DPT and SubDPT:** KNX data point type and sub-type

**Status conditions:** Conditions which define the status value of the process point. If the data points are linked via an AND logic, the process point has the value 1 if all data point values are 1. The following conditions are possible: Normal, OR, AND, Greater than, Less than

**Read on init**: Tick this box if you would like the Client Manager to initially read the current value

**Send only on change**: If this box is ticked, the process point value is only sent if the value changes

**Original unit & displayed unit:** Enter the unit of the process point in the original

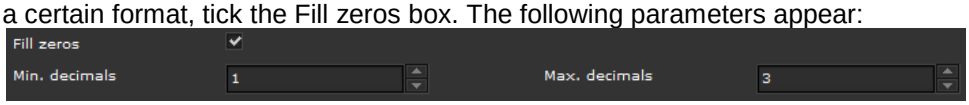
unit field. Displayed unit is the unit that is to be displayed on an element.

**Receive Function:** Click on this window with the right mouse button to insert and mathematically link the data points that have been projected in this process point. Enter a condition to complete the entry. The result of the calculations is the effective value of the process point.

**Attention! The data type of the process point may have to be adjusted.**

Calculations for the display elements are entered in the Sending Function field.

Process points that provide analogue values may be rational and therefore have a certain number of decimal places. If you would like to limit these or set them to a certain format, tick the Fill zeros box. The following parameters appear:




Use the parameter *min. decimals* to enter the minimum number of decimal places. For example, if you enter 1 and the process point has the value 24.20000, the process point value is rounded off to 24.2 and displayed as such. If you enter 3 in the parameter *max. decimals*, all process point values are rounded off to 3 positions after the decimal point. Depending on the condition a process point value will need to fulfil, either 1 or 3 decimals may be displayed. If the value in both parameters is the same, then that amount of decimals will always be displayed.

The projected data points are listed at the bottom of the process point mask.

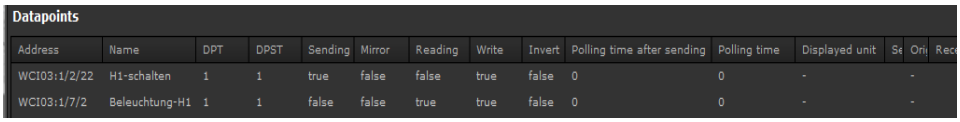



*Abbildung 21:* Data point view in the PP mask

In figure 21, two data points are assigned to the process point. WCI:1/2/22 is a binary switch object and WCI:1/7/2 the corresponding status. In this example, the process point reads the status of the status object because “TRUE“ is set. The value, however, is sent to the switch object because for this data point “TRUE“ is set for the Sending tab. The process point hence uses two objects to process the event.

Press Add to add further data points to the list, Edit to edit data points and Delete to delete data points from the list.

When a data point is selected, click on Edit to open the data point editor as shown in figure 22:

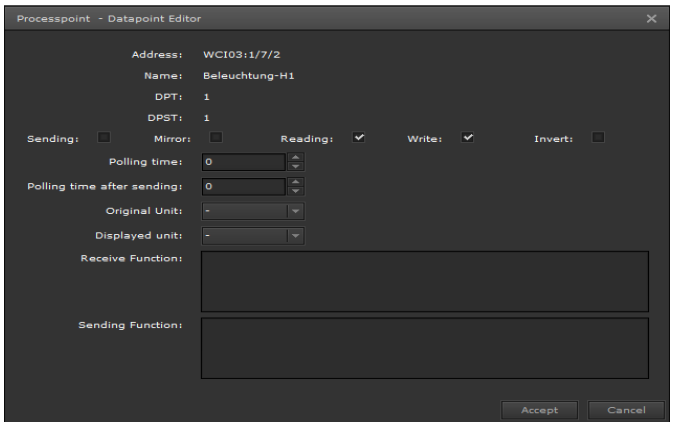



*Abbildung 22:* KNX Datapoint Editor

The following parameters are available for data point properties:

**Address:** Data point address for example for KNX objects *Gateway name: Group address*

**Name:** Data point name

**DPT and DPST:** Data point type and sub-data point type

Attention: An OPC-Export from the ETS does not provide any information about data types. A 2 Byte data type import is always interpreted as temperature. The data types of both data and process points should therefore be checked for their format in the visualisation before they are processed!

**Mirror:** True: The data point passes its sent value straight on to the process point without waiting for a positive acknowledgement from the Bus.

**Write:** True: The data point updates all other data points in the list independent of the responses received from the system.

**Invert:** The data point value is inverted.

**Polling time:** Polling time in milliseconds after which the Client Manager periodically reads the data point value.

**Polling time after sending:** The delay in (ms) following the sending after which the Client Manager periodically reads the data point value.

**Original unit & displayed unit:** Enter the unit of the data point in the original

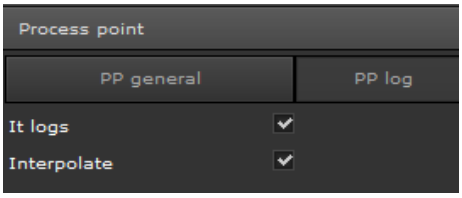
unit field. Displayed unit is the unit that is to be displayed on an element.

**PP Function and Displayed PP Function:**

Click on this window with the right mouse button to insert and mathematically link the data points that have been projected in this process point. Enter a condition to complete the entry. The result of the calculations is the effective value of the process point.

**Attention! The data type of the process point may have to be adjusted.**

### 4.6.1. Save PP




If the It logs flag is selected, the process point values are written on the database. If Interpolate is selected, the saved values will be connected in the graphical display.

### 4.6.2. PP load supervision

PP load supervision defines the load of a circuit both when switched on and off.
*Save value* activates the function, *Value ON* and *Value OFF* describe the current status, *Consumption* describes the load in [W].
Press *Save* to accept the settings.
The activities are evaluated in the CBSE Smart Metering Module.

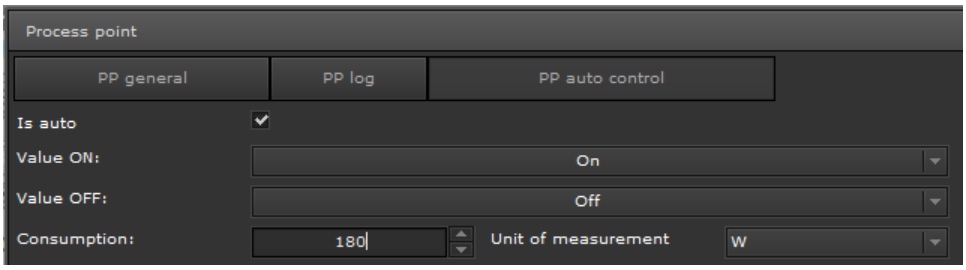



*Abbildung 23:* PP Load supervision

## 4.7. Create new desktop

CBS Evolution uses desktops to create visualisations. A desktop can be assigned to a specific user ( ☛ see chapter: Create user). A desktop navigation makes it possible to open visualisation pages or other functions. User-

specific settings can hence easily be performed via different desktops.

Use *File/New/Desktop* to create a new desktop. Figure 24 shows the result.

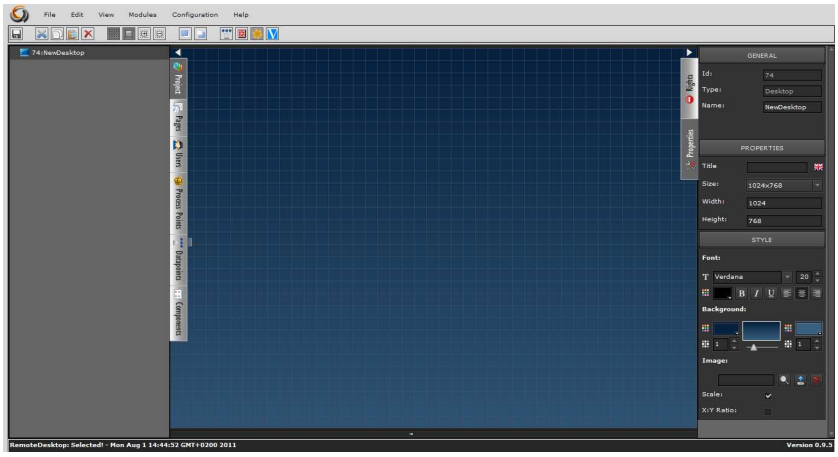
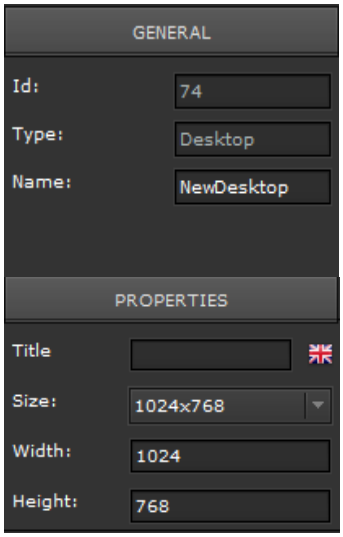


*Abbildung 24:* New desktop view

The screen is divided into three parts. The left-hand column lists all available desktops. If a desktop has not yet been saved, it is simply called *NewDesktop**. Once saved, the desktop name appears in this column. The middle part is the work space. The right-hand section lists the parameters for all configurable desktop properties.

All desktop properties are divided into three parts:




**GENERAL:** Enter the desktop name in the Name field. The desktop type and ID are also displayed.

**PROPERTIES:** The Title field shows the desktop heading in the respective national language. Click on (languages are displayed via country flags) to open the entry mask for desktop headings in different languages. In addition, you may enter the desktop size. This means that each desktop can have its own individual resolution.

In general, the desktop size needs to be adjusted to the screen size of the display. If different display sizes are required, a different user should be created for each display. The Size field offers both standard resolutions and user-specific resolutions.

**Style:** Defines the display properties for the desktop. Use **Font** to choose font properties for the desktop title such as size, colour, alignment, etc.

**Background** enables the setting of background properties such as colour, colour gradients, etc.

Use **Image** to upload a background picture. Use to select an existing image from the database and to upload new images to the database. deletes background images. Tick the Scale box to adjust the image to the resolution that has been set under Properties.

All changes within Editor are only accepted if they are saved. They are displayed in the browser after pressing the Refresh button.

## 4.7.1. Desktop design

The desktop is the basis for all user-specific applications and visualisations. Examples of some desktop design strategies are given below:

### 4.7.1.1. Inserting a desktop heading

Figure 25 gives an example of a desktop heading. Highlight the desktop name in the left-hand column to display the desktop properties parameters on the right. Enter the text of the heading in the Title field. Choose text properties such as colour and size from the Style area. Just like with the login-screen, you can also set background properties including the insertion of a background image.

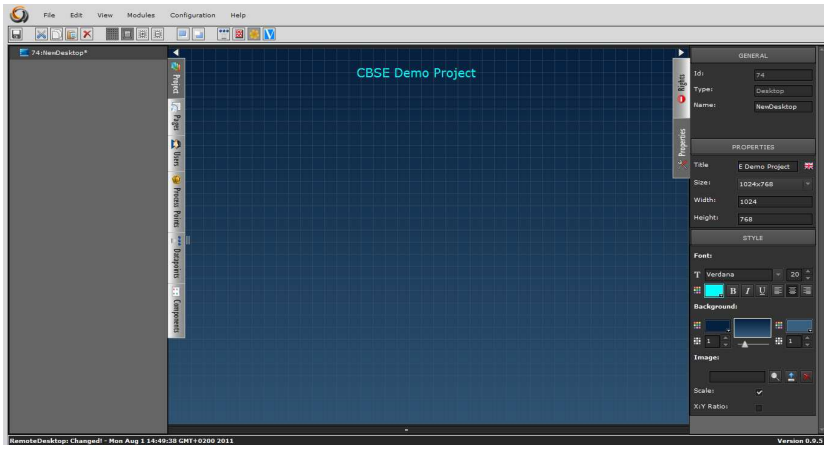



*Abbildung 25:* Inserting a desktop heading

To design the desktop, you may want to use the *Info Elements* from the Components menu. Amongst these elements CBS Evolution currently offers a display of RSS-Feeds, an Internet weather station, a real-time clock and a slideshow.

### 4.7.1.2. Real time clock

If the desktop and the Components menu *Info Elements* are open, you can place the clock onto the desktop via drag & drop. The size of the clock can be adjusted by pulling the corners. The design cannot be changed.

### 4.7.1.3. Weather data

CBS Evolution offers a module that displays local weather data. Like the clock, this module is placed on the desktop via drag & drop. If selected, you can choose the module's location and directly test its display in the Style area on the right-hand side. An internet connection is required for this service.

### 4.7.1.4. Slideshow

User-specific images can be uploaded to the CBS Evolution Server via FTP (File Transfer Protocol) and shown via the slideshow module. Go to Windows Explorer and open the link *ftp://IP-Server*. Enter the login details. Figure 26 shows the login window. The login details are as follows:

User: veuser

Password: veadmin

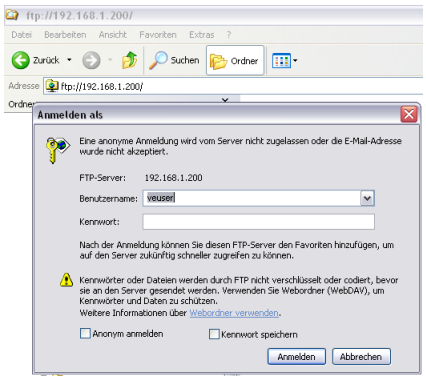



*Abbildung 26:* FTP login

Figure 27 shows the file system on the CBS Evolution Server after log-in.

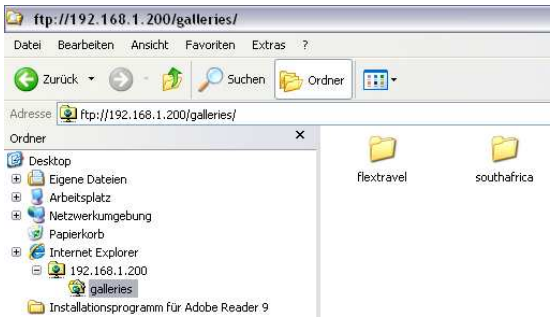



*Abbildung 27:* File system on the CBS Evolution Server

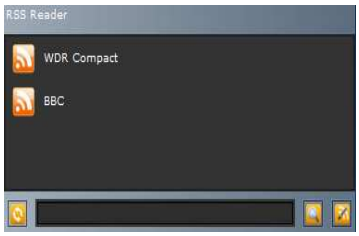
Copy the images that you would like to present in the slideshow into the directory "*galleries*".

The added images need to be stored within at least one folder in the "*galleries*" directory.

This module is also placed on the desktop via drag & drop.

### 4.7.1.5. RSS Reader

More and more providers on the internet offer RSS Feeds. These can be news tickers that offer various kinds of information. CBS Evolution offers an RSS Reader through which RSS Feeds can be loaded as a link and displayed in the application. This service also requires an internet connection.




The RSS Feed Module is placed on the desktop via drag & drop. Its size can be changed by pulling the markers. Figure 28 shows the module and its different elements.

*Abbildung 28:* RSS Reader Module

Refreshes the view
Adds another feed, with a link and feed name
Deletes a feed from the list
Selects a feed from the list for display
Searches for a feed
Leaves the feed editor

Example of a list entry

*Abbildung 29:* Example for an RSS Feed Link

In addition to the information and display modules, you can also place functions on the desktop. Useful functions may be central functions that are switched from the desktop or images that relate to the project. The info elements can, of course, also be used on other pages or windows.

## 4.8. Navigation and page view

A desktop is the individual work space of a user. From a desktop, the user can display graphics and images, use control elements and project navigation elements. Visualisation pages can be loaded with the desktop navigation. These pages are displayed in a window that is embedded in a frame. The basic principle of how visualisation pages are displayed in CBS Evolution is similar to that of a TV set. The TV can display all kinds of programmes. These programmes are always available independently of the TV set. The remote control is the navigation element used to choose a particular programme. In CBS Evolution the display frame is comparable to the TV set. Any number of display frames may be used. The visualisation pages can be displayed in such frames just like programmes on a TV set. The navigation elements are similar to a TV remote control. They are configured in a way that they define the display frame in which a visualisation page is displayed. One visualisation page can simultaneously be displayed in several frames.

The diagram in figure 30 shows the structure: A navigation is created on the desktop in order to load certain pages or functions. Press the navigation button to open a window that contains a frame within which the visualisation page is displayed. The window can be configured in such way that both display frame and navigation elements are displayed.

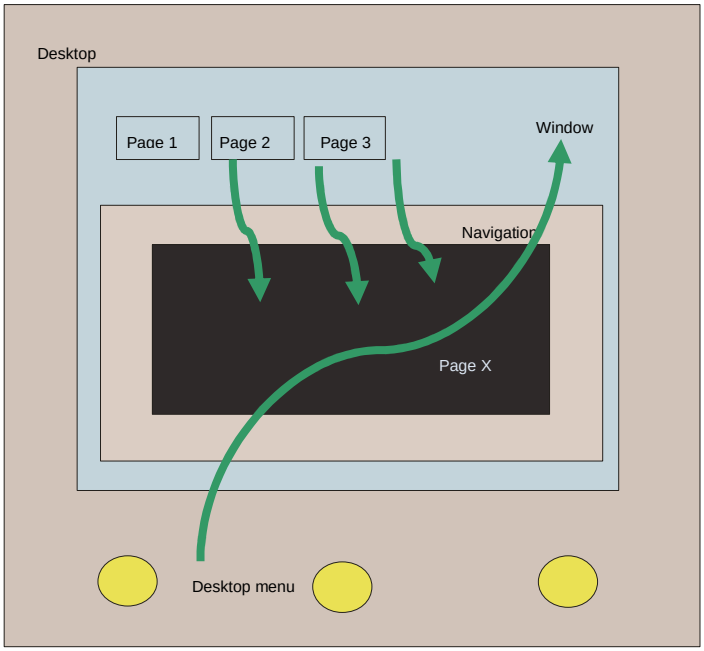



*Abbildung 30:* Diagram of the visualisation structure in CBS Evolution

A simple projection order results from this structure: First, create the visualisation pages, then, depending on the visualisation concept, define the display frames with or without windows with their standard pages.

### 4.8.1. Visualisation pages

The first step is the creation of a visualisation page. A page can display pictures and control elements. Use the left-hand side menu in the Editor to create a page. Select the Pages tab. All available pages are listed on the left-hand side. Figure 31 shows a list of available pages. Press the left mouse button within the list section. This opens a menu where you can select menu point *New page*. This creates a new page. Select *NewPage* to edit the page in the work space. The corresponding page properties are displayed in the properties menu on the right-hand side. Set the page properties before you start designing the page. Page properties are, for example, background colour, font type and size, page headings, etc.

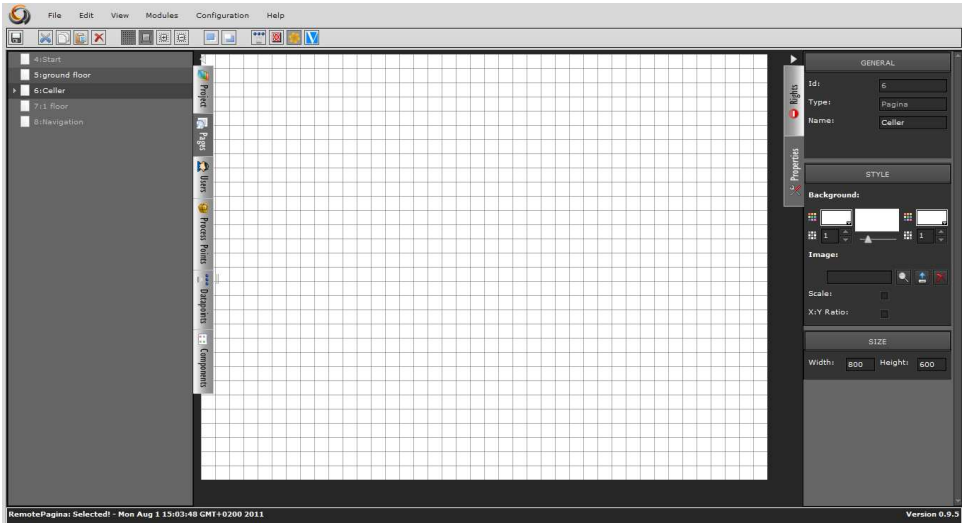
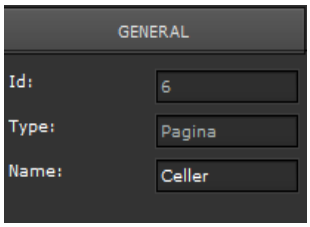



*Abbildung 31:* Page view in the left-hand side function menu

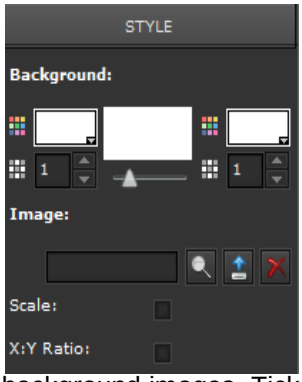
General properties:




**ID:** Page ID number

**Typ:** Page type

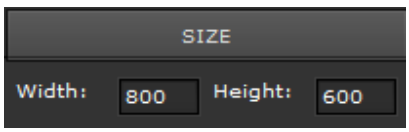
**Name:** Name of the page. By default this is *NewPage*. The name of the page should relate to the project so that the page can be easily identified within the project.




**Style:** This area defines the display properties for the desktop. Use **Font** to choose font properties for the desktop title such as size, colour, alignment, etc.

**Background** enables the setting of background properties such as colour, colour gradients, etc.

Use **Image** to upload a background picture. Use to select an existing image from the database and to upload new images to the database. deletes background images. Tick the Scale box to adjust the image to the resolution that has been set under Properties.




Use the **Size** menu to define the size of the page. **Width** and **Height** show the size in pixels. In order to display the page in the visualisation a display frame is required.

We recommend you coordinate the page format, frame format and window format. This means the page size should correspond to the frame size. As a page is always adjusted to the format of the frame, a page that is bigger than a frame would be reduced to the frame size meaning that control elements may be reduced in size and may no longer be operable.

## 4.8.2. Display frame (Frame)

A visualisation page can only be displayed in a frame. The page size is automatically adjusted to the frame size. Different pages can be displayed within one frame. The default name of the frame is therefore *NewNavigator*. A frame can be placed directly on the desktop. Select the required desktop from the left-hand side function menu and press the right mouse button. Figure 32 shows the selection menu with the command *New frame*.

You can also drag a frame from the components menu *"Navigation elements"* and drop it into the work space.

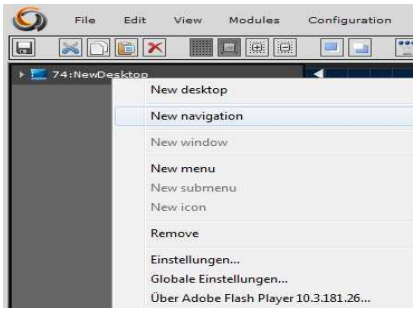



*Abbildung 32:* New display frame

Before a frame is created, you will be asked to select the page that is to be displayed in the frame.

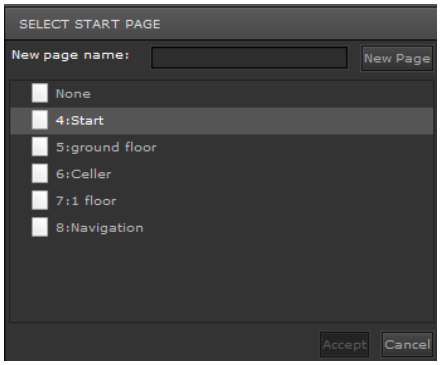



*Abbildung 33:* Select Start Page

Figure 33 shows the selection window with a list of all available pages. Select the page with a mouse click and press Accept to insert the page into the frame. Figure 34 shows the new frame with the page Visu, which contains the weather data element. On the left-hand side the frame is displayed with the name *NewNavigator**. The „*“- symbol shows that the settings have not yet been saved. After it has been saved the name changes from *“NewNavigator*“* to *”Desktop frame“*. As before, the menu on the right hand side displays the available properties.

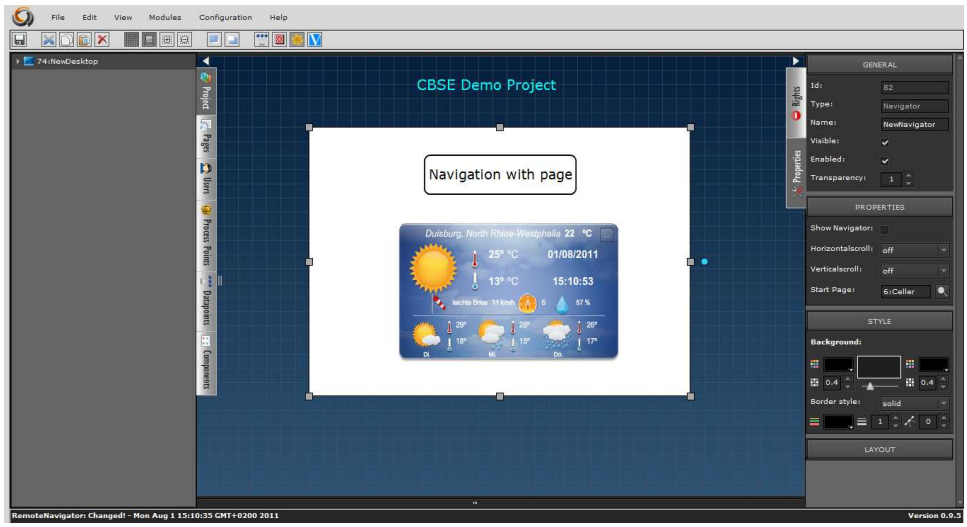
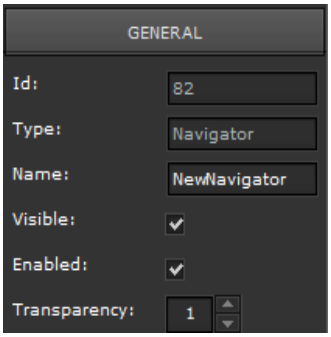



*Abbildung 34:* Display frame “NewNavigator*“

General properties:




**ID:** Page ID number

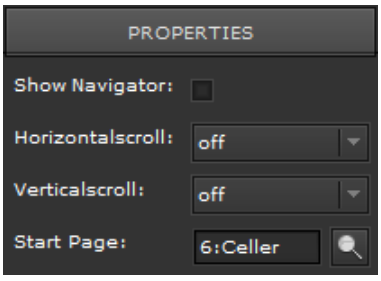
**Typ:** Page type

**Name:** Page name. The default name is *NewNavigator*. Please choose a name that clearly relates to the project so that the frame can easily be identified later on.

**Visible:** ☑ the frame is visible

**Enabled:** ☑ the frame displays pages

**Transparency:** defines the transparency factor: 1 = no transparency, 0 = invisible.




Properties

**Navigation:** If the Show Navigator box is ticked, an additional navigation line is displayed in the upper area.

**X and Y-Scroll:** Auto, on and off are available. If you select *“on“*, a scroll bar appears at the

side of the frame. If you select *"Auto"*, the scroll bar only appears when the frame is too small for the page. If you select *"off"*, no scroll bar appears.

**Start Page:** Use the pull-down menu to select the page that you would like to display in the frame.

Use the properties parameters in the *Style* menu to set text or background properties as before.

If you would like to display several pages on the desktop, several frames can be created.

### 4.8.3. Navigation

The operation or better the operability of a visualisation very much depends on the operating concept, i.e. the type of navigation that enables the change and navigation from one page, application or function to the next. CBS Evolution differentiates between desktop navigation, free navigation and paging. Only one window can ever be opened from either a menu navigation or free navigation element (components / navigation).

This means that a certain window is assigned to a navigation element. This window is then assigned a frame within which a page can be displayed. (Figure 30).

#### 4.8.3.1. Desktop navigation

A desktop navigation element makes it possible to load CBSE functions or windows. Desktop navigation elements can only be placed on the desktop. CBSE functions are applications that are displayed on their own pages. The CBSE alarm management, scene control as well as weekly and annual scheduling programmes are CBSE functions that are created on such application pages. A desktop menu can be created for each desktop.

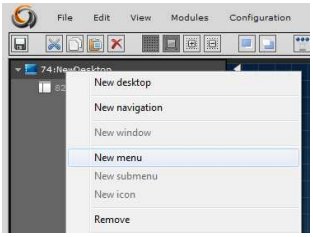



*Abbildung 35:* Creating a desktop menu

To create a desktop menu, first select the desktop with the right mouse button. Then choose *"New Menu"*. By default this menu is called *"NewMenu*"*. Select *NewMenu** with the right mouse button to insert a menu element. The inserted element is displayed at the bottom of the middle part of the desktop. Select the element to edit its properties in the properties menu on the right.

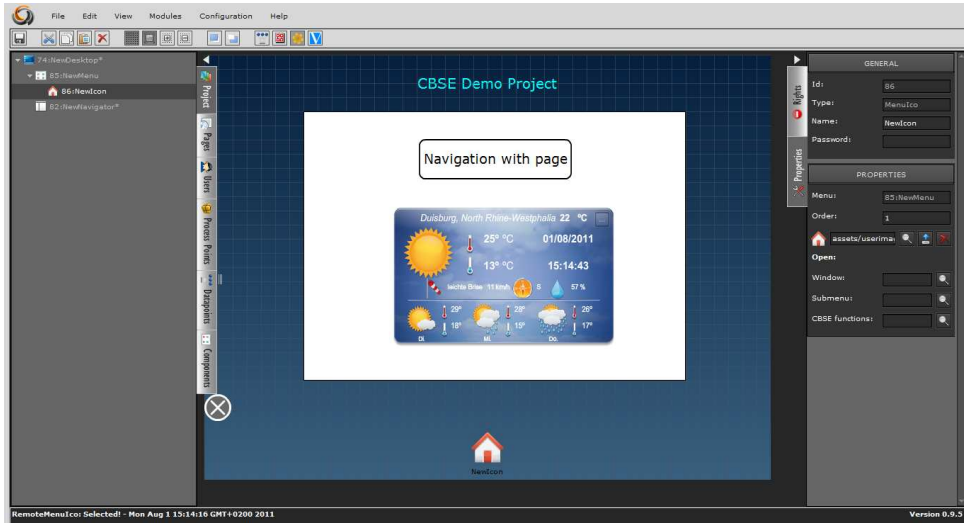
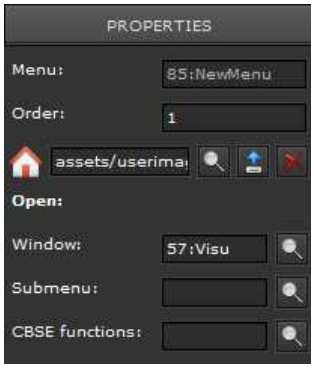



*Abbildung 36:* Desktop menu element

In figure 36 the menu element Visu1 has been inserted. The following properties can be assigned to a menu element:




**Menu:** Name of the desktop menu.

**Order:** This is the order number of the menu element.

Use the magnifying glass to choose a symbol for the current menu element.

**Window:** Frames with visualisation pages can only be displayed in a window (popup window) via a menu element. Use the magnifying glass to choose a window from a list of all available windows. It does not matter hereby which menu element this window was assigned to originally.

**Submenu:** Here you may enter functions or windows of submenus.

**CBSE functions:** Assigns functions such as alarm management, scenes, etc to the menu element.

Figure 37 shows a list of the available CBSE functions.

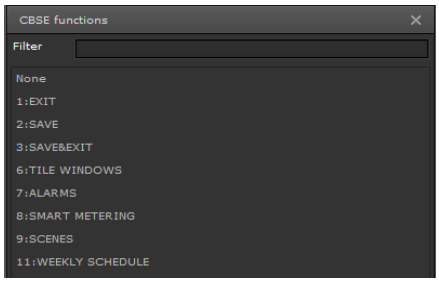
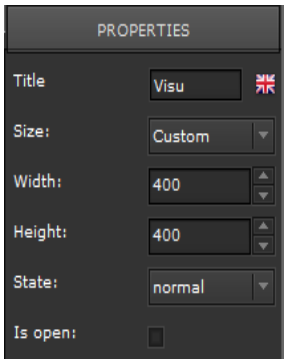



*Abbildung 37:* Selection of CBSE functions

## 4.8.4. Windows (Popup windows)




Windows or popup windows enable the flexible display of web pages and other CBSE functions. In CBS Evolution several windows can be open at the same time. To create a new window, select a menu element in the function menu with the right mouse button and choose the command *"New window"*. This command creates a window that is listed underneath the menu element as *"NewWindow"*.

Figure 38 shows a new window on the desktop after it has been saved. The window has been given the name *"Visu"* and the heading "Visualisation".

**Title:** Window heading

**Size:** Window size

**Width and Height:** Size in pixels

**State:** Status of the window when loaded

**Is open:** Tick this box if you would like to open the window automatically after login.

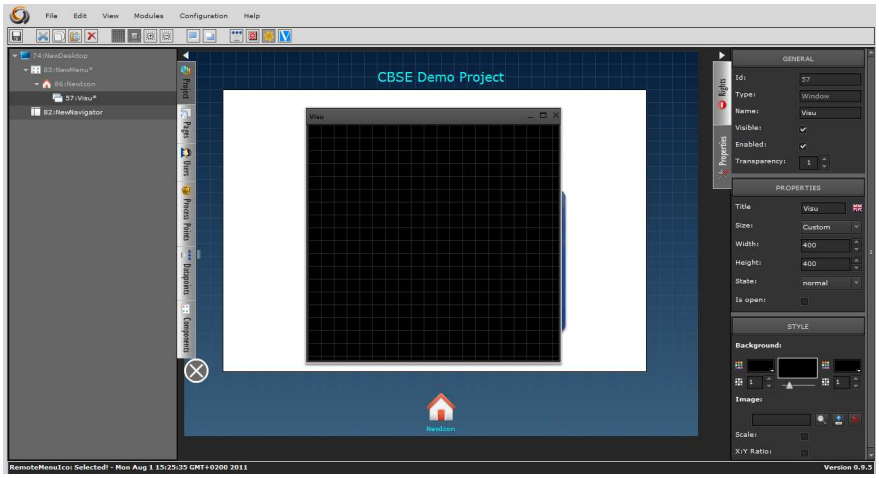
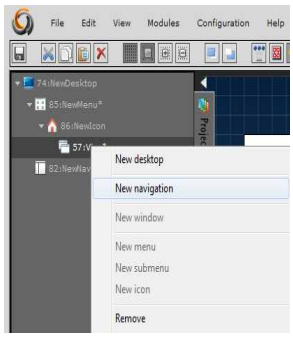
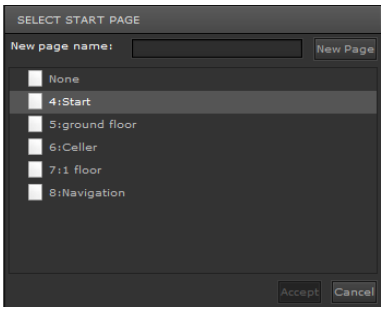



*Abbildung 38:* Creating a window




Control elements from the Components menu or frames for the display of pages can now be configured in the window. Select a window from the left-hand side menu by pressing the right mouse button and use *"New frame"* to assign a frame to the window.

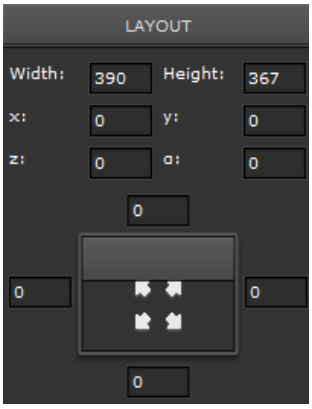



The window „Select Start Page" opens. Choose the page that you would like to display in the frame. In figure 39 the new window has been assigned a frame which displays the page *"Start"*. If the required page does not yet exist, a new page can be created with

. The new page is given the name that is entered in the New Page Name field. The page is stored in the function menu under the tab Pages.

You can also create a window and a frame in one single step. Select the menu element with the right mouse button and choose the command "New frame". This command automatically creates a window with a frame. As in figure 38 a window opens to assign a page to the frame.

By default the frame and page size are adjusted to the size of the window. If you would like to create individually sized frames in a window, select the frame from the function menu on the left hand side. Go to the properties menu on the right and open "Layout".



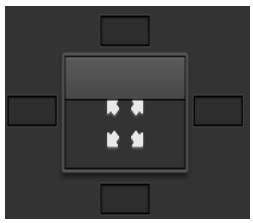



Figure 40 shows the clearance from the right and left margin as well as from the top and bottom in pixels. The value "0" means that the clearance between the frame and the margin is 0 pixels. If you delete the values (0) as in figure 40, you can enter the width and height individually.

*Abbildung 39:* Individual frame size

This method is helpful when placing navigation elements in a window outside of a frame.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Windows (Popup windows) can be assigned several menu elements. Create a new window by selecting the menu element from the function menu with the right mouse button and choose the command *"New window"*. Now select the frame that you would like to display in the window from the field Window: 57:Visu. The components menu "*Navigation elements*" offers further control elements that can be used for navigation tasks.

## 4.9. Creating a user

CBS Evolution is desktop oriented. This means that all users have their own desktop and individual navigation. The navigation determines which pages and functions a user can access. For example, a certain user may only be able to use web pages with a certain display resolution.
Each user receives a name, user name and a password.
Select *File/New/User* from the main menu to open the configuration screen.

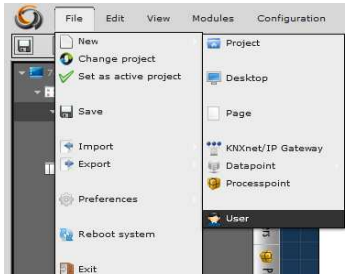



*Abbildung 40:* User configuration view

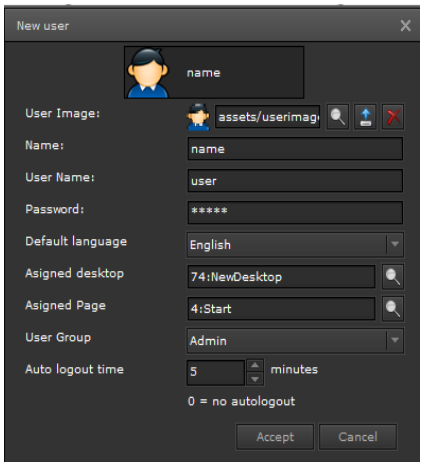



*Abbildung 41:* User configuration

Figure 42 shows the user configuration:

An individual user image or icon can be chosen for each user.

CBS Evolution offers a range of user images. Click on in the *User image* field to find an image. Click on to upload user-specific images. Own images should be saved in the PNG format and size 43x43 pixels. Click on to delete the image.

**Name:** The name is displayed next to the image.

**User name:** User name

**Password:** User password (the password has to consist of numbers between 0 and 9)

**Default language:** User language (Each user can be assigned a language. This means that, for example, description texts will be displayed in the user's language). Choose the required language from the pull-down menu in the *Default language* field.

**Assigned desktop:** Use the pull-down menu to assign the user a desktop from the list of available desktops.

**Assigned page:** Select the page which you would like to assign as start page to the user if the application is not exported as Flash but as an HTML visualisation.

( ☛ Chapter HTML Export)

**User Group:** CBS Evolution supports 3 user groups. Depending on the user group, different functions are available.

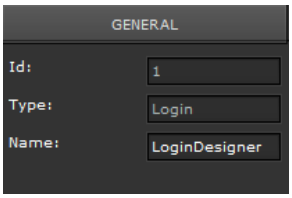
| User | Functions |
|---|---|
| Editor | Opens CBSE Editor |
| Admin | Access to web pages, scene configuration, time scheduling, alarm and smart metering configuration, access to all priorities |
| User | Access to web pages |

**Auto logout time:** Defines the time until a user is automatically logged out and the system returns to the login screen. If you enter "0", there is no automatic logout.

Click on Accept to save the settings and on Cancel to exit the application without saving.

Group allocations and user properties can be changed in the Editor at any time.

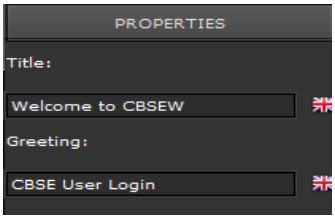
Select *User* from the function menu on the left hand side. All users are listed under *LoginDesigner*. If you select *LoginDesigner,* properties for the design of the login window appear in the properties menu on the right.




General:

**Name:** Enter a name for the user administration.

Properties:




**Title:** Enter a heading for the login page.

**Login window:** The login window is a special popup window that can be given a title at this point.

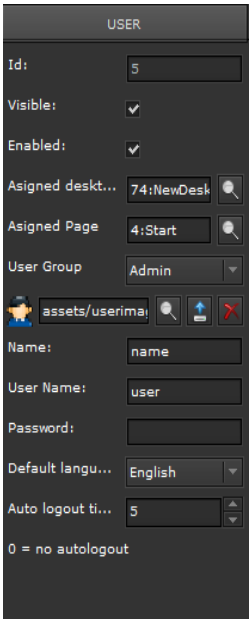
Style:

*Font* is used to define font and text properties such as size, colour of headings, title, texts, etc.

*Background* enables the setting of background properties such as colour, colour gradients, etc.

Use *Image* to upload a background picture. You can select an existing image from the database or upload you own.

Tick the *Scale* box to adjust the image to the frame size.




If you select a user, the user properties appear in the properties menu on the right.

**Visible:** ☑ The login screen is visible, ☐ the login is invisible.

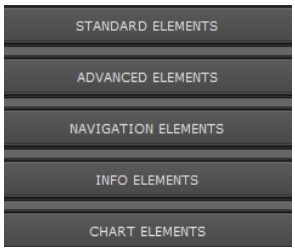
**Enabled:** ☑ Login is activated, ☐ Login is de-activated.

The user properties correspond to the properties in figure 42.

# 5. CBSE Components

CBS Evolution offers the user a great number of control elements to configure functions, displays, information, graphics, etc. Control elements can be configured on pages, within a frame, in windows and on the desktop. Control elements are always selected in the components menu on the left hand side and then placed on a page or the desktop via drag & drop. Select a control element to set the element properties in the properties menu on the right hand side.

Control elements can be found under the Components tab in the left-hand side function menu. They are sorted into the following groups:




Standard control elements such as ON, OFF, etc.

Advanced elements such as Step, touch sensor, etc.

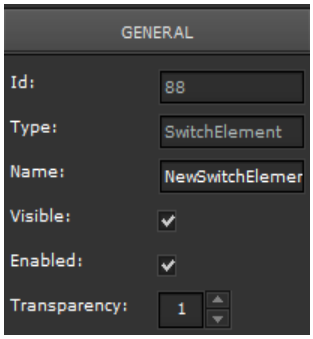
Navigation elements

Info elements such as RSS Feeds, weather data, clock, etc.

Chart elements for the display of measured values.

Each control element has “General“ settings, “Properties“, “Individual“ properties and properties which influence the design and display. User rights can be assigned to each control element. The following properties are identical for each component.

## 5.1. General




**General**

**ID:** Internal element ID. This can, for example, be used to search for an element via a filter.

**Type:** Element type.

**Name**: Enter a name for the element.

**Visible:** The element is visible in the visualisation.

**Enabled:** Tick this box to enable the function. If the box is not ticked, only the object status is displayed.

**Transparency:** Values between 0 and 1 define the transparency of the element.

## 5.2. Properties

The properties section is used for process point assignments.

Use the symbol to select a process point from the list.

**Show click effect:** changes the symbol of an element when it is activated.

**Show status:** The current status value is displayed inside the element.

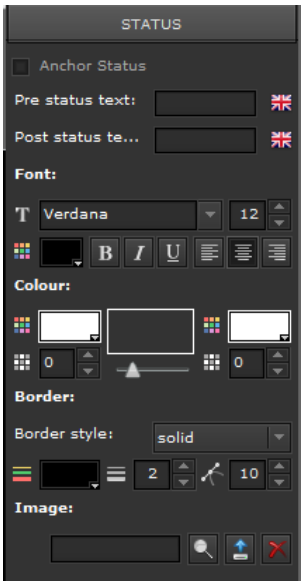
**Show tooltips:** Tick this box to show the text in the **Tool tip** field when the mouse hovers over the element.

Click on to edit the process point at any time. Click on to delete the process point from the element.

Depending on the control element, several process points may be assigned to it. For example, this is the case for dimming or shutter elements.

### 5.2.1. Design properties

Control elements process the status of a process point. One of the main properties of a control element is the display of a process status. Generally the display requirements are: Process point connected and process point not connected. This may result in further requirements to display the process status for **Status "ON"** or **Status "OFF"**. The display possibilities are identical for each status. In the following, the properties for **Status connected** are described.




**Anchor status:** If this box is ticked, the settings are also applied to the other properties such as **Status not connected** or **Status On,** etc.

**Pre status text:** Enter the text that is to be displayed in front of the status value. The flag shows the language in which the text will be displayed.

**Post status text:** Enter the text that is to be displayed behind the status value. The flag shows the language in which the text will be displayed

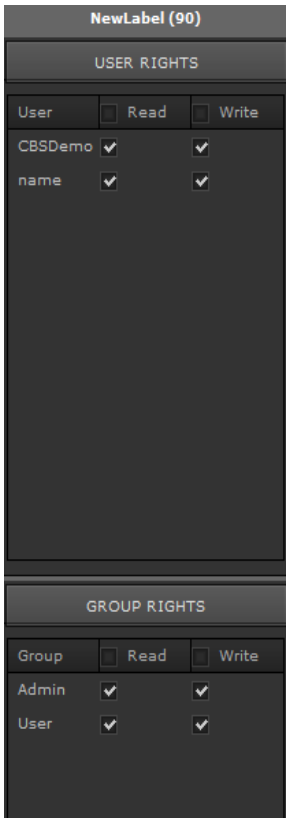
**Font type:** Sets the font type, size, colour and alignment of the text that is displayed within the control element.

**Border:** Sets the style, width, colour and corner radius of the border.

**Image:** Use Image to upload a background image for the control element. Use to select a symbol from an existing list.

Use to upload a new image and to delete a background image.

### 5.2.2. User rights




If you select an element in the editing section, you can choose the corresponding user rights from the right-hand side properties menu.

Rights:

The user rights for a toggle key are displayed in the figure to the left. All users of the visualisation are listed under user rights. In the example only one user is configured. The system grants a user read-only and writing rights. With Read, a user can only see a status notification. With Write the event is also written on the bus. If the rights are to be the same for all users, tick the respective boxes next to “User“. For individual rights, tick the boxes next to the individual user names. In addition, CBS Evolution distinguishes between two user groups. The group membership is set when a user is created. The admin group has special rights, for example when it comes to the editing of online scenes or online time scheduling programmes. User rights can also be assigned to a whole user group.

## 5.3. Standard Elements

On / Off switch

Configuration according to chapter 5.1, 5.2, 5.3

Switch Toggle

Configuration according to chapter 5.1, 5.2, 5.3

On first use, toggle switches need a status so that the inverse value can be set and accepted in the element.

The toggle switch can receive the current status directly from the process point with which it is configured.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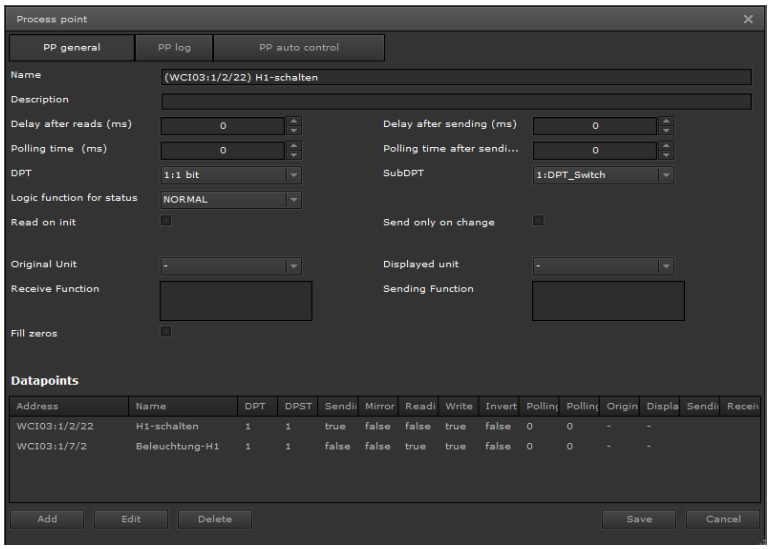


*Abbildung 42:* Process point with read request on status object

Figure 43 shows a process point which has been assigned two data points. The data point H1-Schalten is the switch object and Beleuchtung-H1 is the corresponding status object. If the process point H1-Schalten is linked to the toggle switch, the latter reads the status of Beleuchtung-H1 and when activated switches H1-Schalten.

Dimmer

Configuration according to chapter 5.1, 5.2, 5.3
Dimmer = 1 push-button dimmer
Dim Up/Dim Down = direction dimmer
For the configuration according to 5.2 additional process points and settings are required.

**Status:** The process point Dim Status needs to be configured so that the element receives the current status.

**Short pulse:** Process point for the switch function

**Time short pulse:** time in milliseconds after which a long keypress is evaluated.

**Long keypress:** Process point for the 4-Bit dim value.

Blind/Shutter switch

Configuration according to chapter 5.1, 5.2, 5.3
Blind/Shutter = 1 push-button control
Blind/shutter up-down = direction switch

For the configuration according to 5.2 additional process points and settings are required.

**Status:** The process point Position needs to be configured so that the element receives the current status.
**Short pulse:** Process point for slat adjustments/start/stop
**Time short pulse:** time in milliseconds after which a long keypress is evaluated.

**Long keypress:** Process point for the Up/Down command

Binary status

Configuration according to chapter 5.1, 5.2, 5.3
Displays the current status.

Input Value /satus value

Configuration according to chapter 5.1, 5.2, 5.3
This element is used to send values and shows the current value status.

If the process point of a value setting element also has the data point for status, the current status is shown on the display.

Click on SEND to send the displayed value. Click on the arrow buttons to send the value in increments.
Show send: Shows the send button
Show keyboard: Shows the arrow buttons


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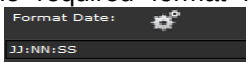
Time/ date

Configuration according to chapter 5.1, 5.2, 5.3
Attention! The OPC-Export in the ETS does not provide information about the data type.

When a date object is imported, the data type is automatically the time format. The user has to adjust the date format manually.

The following parameters need to be considered for the configuration of a time/date – element:

**Format Date**: Click on to open a list with the different time and date display formats. The required format is transferred to the formatting window 

. In the example the following time format has been chosen: JJ = hour : NN = minute : SS = second.

**Server Time:** Tick this box to if you would like the CBS Evolution Server to set the time. If the box is not ticked, the time is set by the Client.

As soon as a PP has been projected, the parameter *Server Time* is faded out.

: Configuration PP

**Static Mode:** Tick this box to read a static time/date object. The time/date display remains static and does not change. If the box is not ticked, a time/date object can still be read. The time/date display, however, carries on from the exported value.

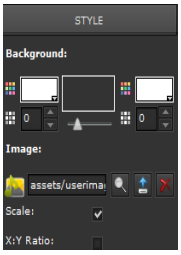
**Text:** Description text in front of the time/date display

Label

Configuration according to chapter 5.1, 5.3
The Label element is used to describe other elements. Enter the description text in the text field.

Images

This element is used to build images or graphics into the application. Both Bitmap formats and web-compatible vector graphics can be used.




**Background:** Design of the element background

**Image:** Use to select an existing image from the database and to upload new images to the database. deletes images from the element.

**Scale:** Tick the Scale box to adjust the image to the resolution set under Properties.

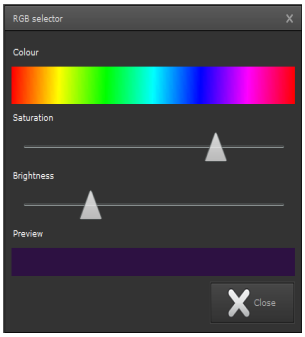
**X:Y Ratio:** retains the width-to-height ratio when the image is resized.

## 5.4. Advanced Elements

RGB Element

Use this element to easily set a particular colour shade via the colours red, green and blue.

The process points Set Value are projected in the properties menu for the colours red, green and blue.

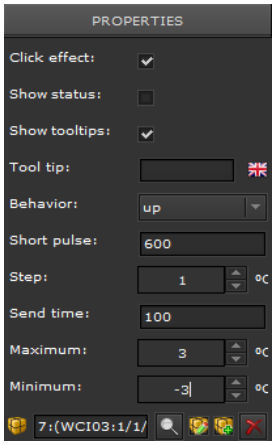



Open the visualisation and press the control element to open the RGB Selector. Click on any colour to calculate the corresponding RGB values. The chosen colour is displayed in the Preview field. Use the slider “Saturation“ to set colour intensity and the slider “Brightness“ to set the brightness level of the chosen colour.

If the dim curve of the activated RGB actuator is adjusted to the light source, the chosen colour corresponds to the mixed value. If the dim curve is not adjusted, differences in colour may arise.

Step switch

This control element is used to incrementally increase or decrease values. Each keypress increases or decreases the current value by the configured increment size. The following properties may be configured:




**Behaviour:** *up:* the value increases, *down:* the value decreases.

**Short pulse:** Evaluating a long keypress

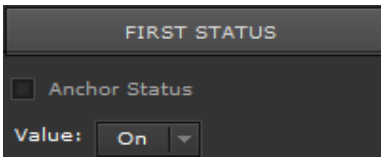
**Step:** Shows the size of the increment by which the current value increases or decreases when a pushbutton is pressed. .

**Step:** As long as the pushbutton remains pressed (after evaluating a long keypress) the values defined under Step are added up. In the example this means: After 600 ms a long keypress has been evaluated. After this, the

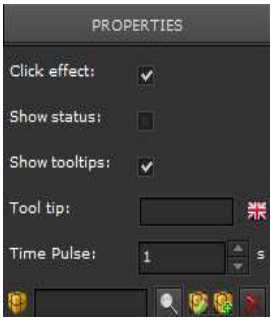
values defined under Step are added for each second that the pushbutton remains pressed. When the pushbutton is released, the result of the addition is sent to the Bus. In the example, the **Maximum value** is 3 ℃ and the **Minimum value** -3 ℃.

Pulse switch and sensors

Pulse elements send two values: Either on pressing and releasing a button or when a certain time period after switch-on has elapsed. The configuration is performed according to chapter 5.1, 5.2, 5.3



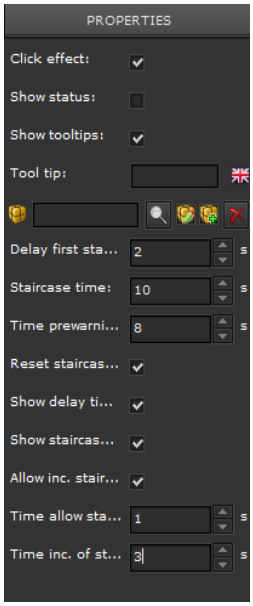

The control elements, however, have an additional parameter under status properties. Value sets the switch value for the respective status. In the example the value *On* is sent after switch-on (*First Status*). In case of a *Switch Release* the *Second Status* is sent after about 500 ms.




In case of a *Switch Delay* the *First Status* is sent when the button is pressed and the *Second Status* after the time specified in *Time Pulse* has elapsed (1s in the example).

Individual Pulse Button

This element could be used, for example, for stair case lighting. The basic function switches the light on when activated and off after a certain time has elapsed *(First Status and Second Status)*. In addition, however, the following settings can be performed:




**Delay first status:** Sets the time in seconds by which the sending of *First Status* is delayed.

**Staircase time:** Sets the time in seconds until the *Second Status* is sent (on-time).

**Time prewarning:** Sets the time in seconds after which a change from Second Status to First Status is sent. In the example the change occurs after 8 seconds in order to signalise that the on-time is about to come to an end.

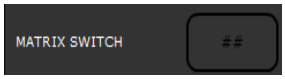
**Reset staircase:** If the button is pressed again during the on-time, the time is reset and starts again from the beginning. (Example: The on-time has been running for 2 seconds. The button is pressed again so that it runs for

another 10 seconds. Once this time comes to an end, the *First Status* has been active for altogether 12 seconds before the *Second Status* was sent).

**Show delay time/Show staircase time:** Up-to-date times are displayed on the control element.

**Allow inc. staircase:** This function allows for the repeated pressing of the pushbutton within the time **"Time allow staircase"**. Witch each click on the control element, the time is extended by the number of clicks multiplied with the time **"Time inc. staircase"**. In the above example: The button is pressed again half a second after the initial activation. This means the time is altogether 13 seconds. After this time has expired, the basic time is again 10 seconds.

Matrix Switch



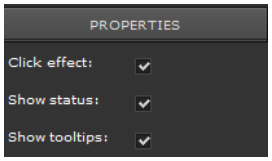

The Matrix switch is a special value sending push-button. With this control element, a process point DP Type 5: unsigned value can be configured in such way that a matrix field opens to send different values when the switch is activated.

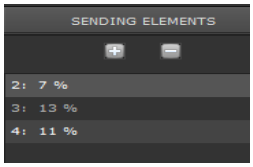
In the example, the control element has been configured for 4 values (0, 5, 7, 9).

Each field has an individual design. If the control element is activated, the matrix opens and you can press the required value setting push-button.

In the example the blue button with value 5 has been activated. After it has been activated, the matrix closes and the currently active element is shown.

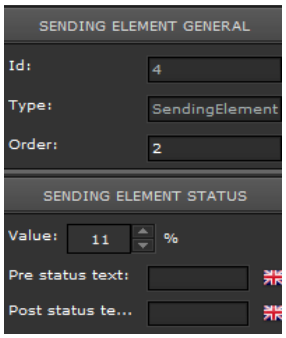
Select the field *Show status* in the *Properties* menu and the configured values




in the matrix elements are displayed. Use the "+" and "-„ buttons in the properties menu "SENDING ELEMENTS" to create and delete *Sending Elements*.

Select a *Sending Element* to open the *Sending Element General* properties.




Use *Order* in *Sending Element General* to set the place of the element in the Matrix.

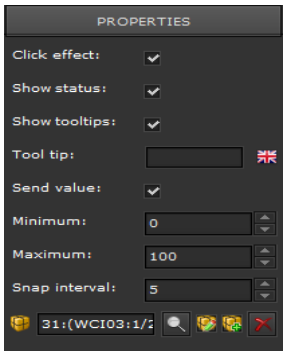
The properties of the *Sending Element* are defined in the properties menu *Sending Element Status*. In the example, the *value 11* for the configured process point is assigned to the *Sending Element ID:4* in *Order 2*. The element can be designed with the properties *Font type, colour, Frame Image*. In the example, a

background colour, corner radius and background image were set.

Slider

The slider is used to regulate, for example to dim the light. It functions similar to the value setting element and therefore requires a process point that represents a value.

Select **value status** to display the current value in the element.



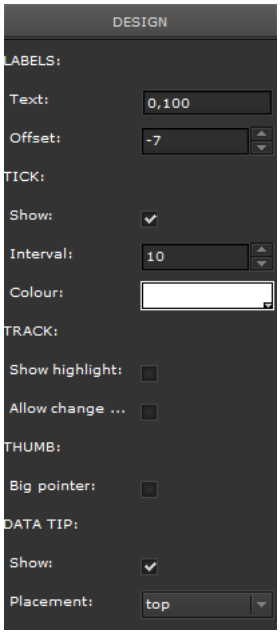

Tick the **"send value"** box next to the process point.

**Minimum:** minimum dimming value

**Maximum:** maximum dimming value

**Snap interval:** dimming increment size when the slider is activated.

The slider can be designed in the properties menu Design.




Go to **Labels** to enter the parameters for the scale.

**Text:** Two values, separated by a comma, are needed. The first is the minimum value and the second the maximum value of the scale.

**Offset:** defines the position of the scale in relation to the principal scale line.

**Tick** defines the tick format.

**Show:** Select this box to show the tick.

**Interval:** Sets the tick intervals.

**Colour:** Sets the tick colour.

The properties of the slider are defined under **Track**:

**Show highlight:** The main scale from the initial value to the position of the slider is highlighted (thick line).

**Allow change...:** If you click on the main scale, the slider jumps to this position.

If **Big pointer** is selected under **Thumb,** the slider is magnified in the element. This function is particularly useful for touch control.

Use **Data Tip** to determine whether you would like to display the current value when clicking on the slider with mouse.

**Show:** switches the function on.

**Placement:** shows the position where the value is to be displayed. You can enter top, bottom, right and left

Analogue display

This element shows a status value in an analogue display. The current value is shown underneath the pointer. The scale range can be shown in intervals that differ in colour.

The following properties can be set:

**Bounce effect:** The pointer levels off when the status is set.

**Send value:** Tick this box to turn the element pointer with the mouse and send the set value.

**Show status:** The status value is displayed in the element.

**Skin:** Two different designs are available:

Gauge Skin

Dial Skin

Dial Skin can be used as a rotary encoder.

**Min/max angle:** Use the slider to set the minimum and maximum angle.

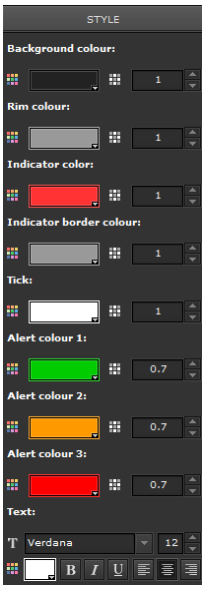
**Label y offset/ Label x offset:** Use the slider to set the position of the status value display.

**Post status text:** This could be, for example, a unit description.

**Min/Max value:** these are the minimum and maximum values that are displayed

**Showed alerts:** 4 different thresholds can be entered which appear in different colours on the display.

**Alert value 1-4:** Sets the threshold size.




Use Style for design settings, such as the colour of the pointer, background colour, threshold colours, etc

You can enter the transparency factor for each colour next to the colour field.

0: invisible and 1:no transparency.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Bar display

This element is used to display, for example, the status of a volume.

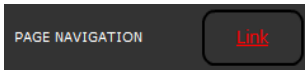
A maximum display value can be entered under volume capacity.

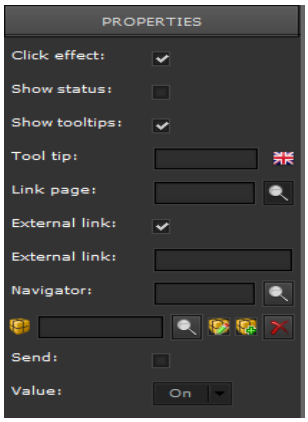
## 5.5. Navigation elements

CBS Evolution provides the user with elements for an individual navigation across pages, display frames and windows.

A frame can be placed on the desktop, page or window via drag & drop.

Page- frame alternating




This element is used to open other frames or pages. If this element is built into a window with a smaller navigator, you can use *Page Navigation* to open different pages within the navigator.

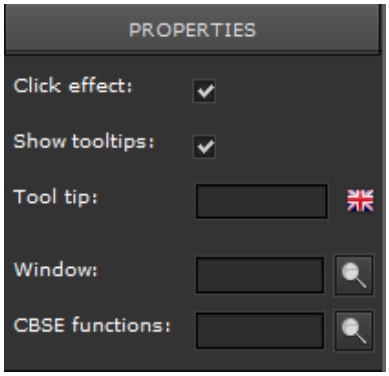
**Link page:** Select a page from a list of all available pages.
**External Link:** If you tick this box and enter a URL, the URL is loaded in a new browser.
**Navigator:** Select a display frame from a list of all available frames.

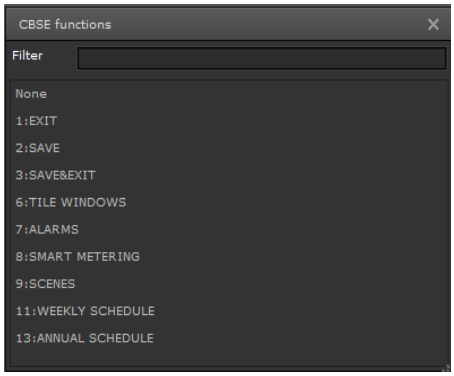
Tick the **Send** box and enter a **Value** to switch a **process point** at the same as a navigation command.

If External Link is ticked, no page can be selected.

Window navigation

Use this element to open a window or CBSE Function.

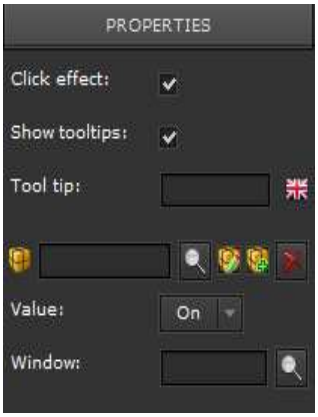



Window: Opens the window selection
CBSE functions: Opens the CBSE function selection

1: exits the application and opens the login screen.
6: displays windows in full screen mode
7: opens the alarm page
8: starts Smart Metering
9: opens scene control
11: opens weekly schedules
13: opens annual schedules

Use this element to open a window depending on the status of a process point.



PP configuration

**Value:** the window will open at this value

**Window:** Selection of all available windows. If you would like this function to be available all the time, you need to project it on the desktop. Use the design properties to choose how you would like to display the element (e.g. transparent).

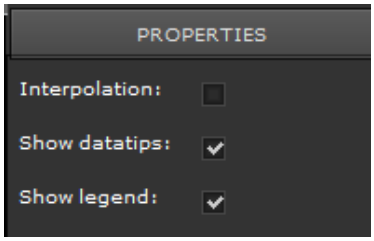
## 5.6. Info Elements

See chapter 4.7.1

## 5.7. Chart elements

In CBS Evolution process point data can be written on a database ( ☛ see chapter process points). This data is available for further applications.

Use Chart Elements for a graphical display of these process points. Drag & drop an element into the work space. Select it in order to define its properties in the menu on the right hand side.




You can tick the following boxes under **Properties:**

**Interpolation**: The values are interpolated.

**Show datatips:** If the mouse hovers over a data point in the chart, its value and time stamp are displayed.

**Show legend:** Displays the name of the measured value in the legend.

Use **Style Properties** to design the chart.

Select an element to open the properties menu **Series**. You can choose between a bar chart (NewColumnSeries) and a line chart (NewLineSeries). Click on one of the two symbols to create the respective type of chart. The button deletes the selected format.

Several process points can be displayed within a chart. The display format needs to be chosen for each process point.

Select a display format to open further properties for configuration.

A name and process point are assigned to the display format under General.

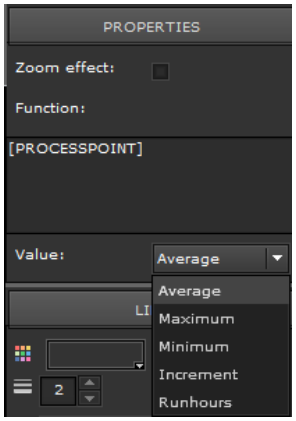
**Attention! To be able to display the process point, you need to select Save PP.**

Select **Show Legend** to display the name in the legend.

**Zoom effect:** highlights a data point when the mouse hovers over it.

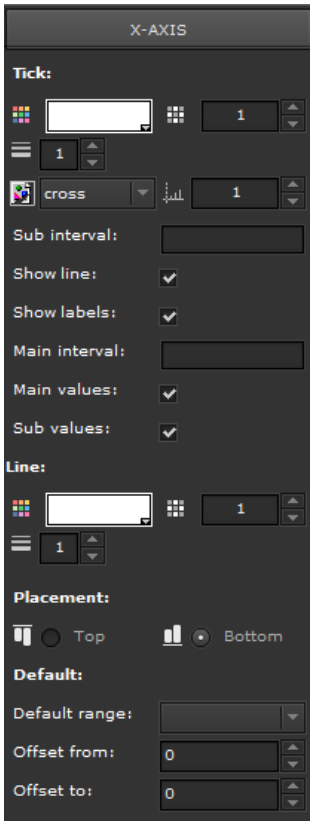
**Function:** Enter a formula to gauge the chart.

**Value:** Display format for the data. The following selection is available:

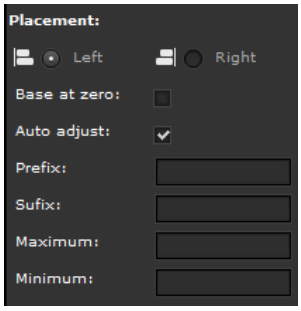



**Average:** Data points are connected through a line.
**Maximum/Minimum:** Only the minimum and maximum values are shown.
**Increment:** Only value increments are shown.

Use the properties in **Line** and **Value** to design the data points and line.
Use the **Axis properties** to design the coordinate system.
Set the **colour, transparency, thickness of the line** and type of **tick mark** under **Tick.**




**Sub interval:** Value of the intervals between the main intervals on the axis
**Show line**: shows the lines of the coordinate system.
**Show labels:** The tick marks are displayed.
**Main interval:** Value for the scale of the main intervals
**Main values:** The main values are displayed.
**Sub values**: The sub values are displayed.
Use **Line** to set the properties of the coordinate lines.
**Default:** This sets the default range of the chart and the beginning and end of the observation period.




Under the **Y-Axis** properties you can add a unit or text to the axis values.
**Base at zero:** Determines whether to display the zero base line.
**Auto adjust:** Automatically sets the tick of the Y-

axis.

**Prefix/Suffix:** Description text in front of and behind an axis value.

**Minimum/Maximum:** Limits the axis

Figure 44 gives an example of a load distribution over several days.

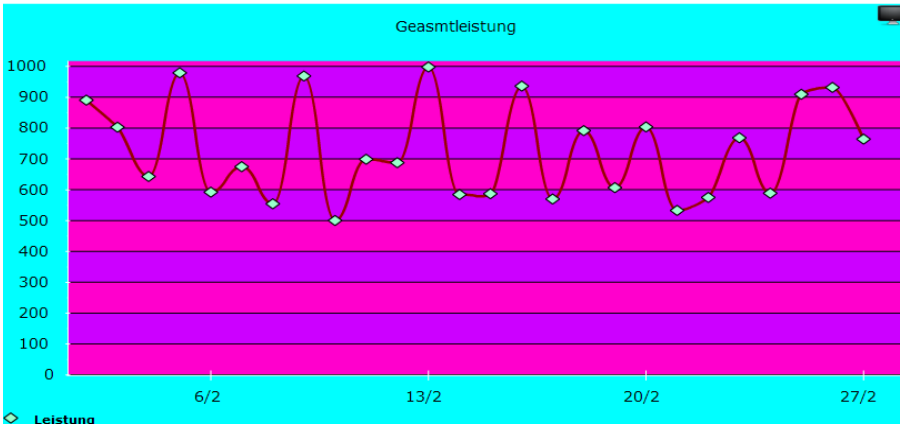



*Abbildung 43:* Display of a load distribution

Click on to edit the display online. Figure 45 shows the work space to edit the chart. The control elements for various functions are located in the top left-hand corner.

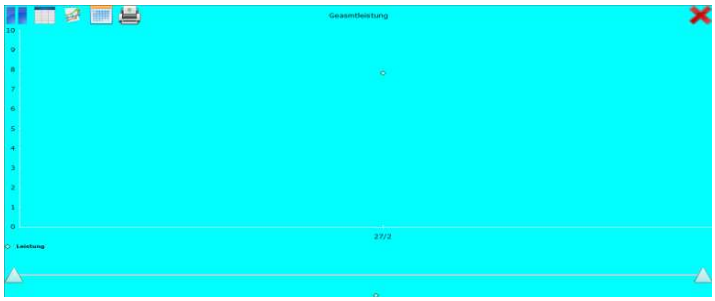


*Abbildung 44:* Online Editor

: Opens the report function, for example to print a chart.

: Click on this symbol to change the display area. The start and end date can be entered via a calendar. All dates are calculated in different tables. The available tables can display the values on a minutely, hourly, weekly and monthly basis. The data is cleaned for each time period.

*Abbildung 45:* Setting the display period

Click on to open the Editor and change the chart properties. You can add or delete charts or change the particular properties of a chart such as the display format.

Figure 46 shows the Editor window.

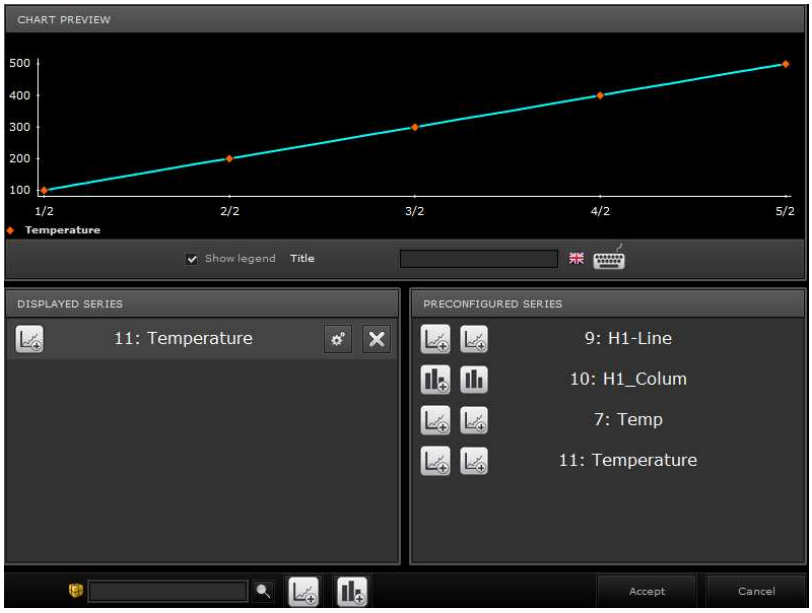
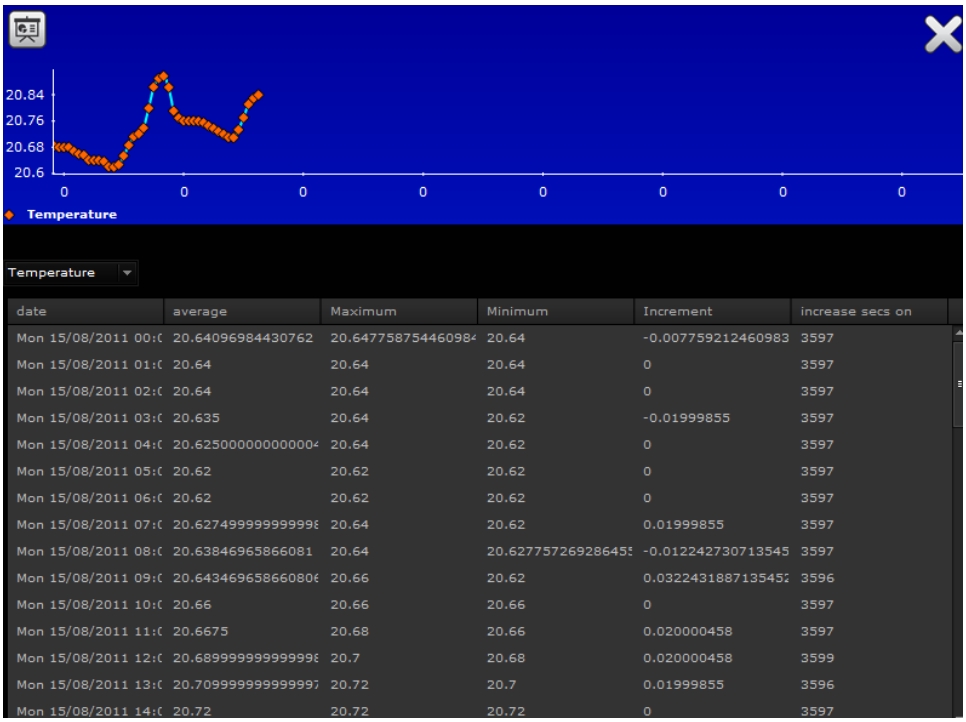



*Abbildung 46:* Chart editor (Online)

Click on to list the data in table form. From here you can also generate a CSV Export to edit the data in Excel.




| date | average | Maximum | Minimum | Increment | increase secs on |
|---|---|---|---|---|---|
| Mon 15/08/2011 00:( | 20.64096984430762 | 20.647758754460984 | 20.64 | -0.007759212460983 | 3597 |
| Mon 15/08/2011 01:( | 20.64 | 20.64 | 20.64 | 0 | 3597 |
| Mon 15/08/2011 02:( | 20.64 | 20.64 | 20.64 | 0 | 3597 |
| Mon 15/08/2011 03:( | 20.635 | 20.64 | 20.62 | -0.01999855 | 3597 |
| Mon 15/08/2011 04:( | 20.625000000000004 | 20.64 | 20.62 | 0 | 3597 |
| Mon 15/08/2011 05:( | 20.62 | 20.62 | 20.62 | 0 | 3597 |
| Mon 15/08/2011 06:( | 20.62 | 20.62 | 20.62 | 0 | 3597 |
| Mon 15/08/2011 07:( | 20.627499999999998 | 20.64 | 20.62 | 0.01999855 | 3597 |
| Mon 15/08/2011 08:( | 20.63846965866081 | 20.64 | 20.627757269284455 | -0.012242730713545 | 3597 |
| Mon 15/08/2011 09:( | 20.643469658660806 | 20.66 | 20.62 | 0.032243188713545 | 3596 |
| Mon 15/08/2011 10:( | 20.66 | 20.66 | 20.66 | 0 | 3597 |
| Mon 15/08/2011 11:( | 20.6675 | 20.68 | 20.66 | 0.020000458 | 3597 |
| Mon 15/08/2011 12:( | 20.689999999999996 | 20.7 | 20.68 | 0.020000458 | 3599 |
| Mon 15/08/2011 13:( | 20.709999999999997 | 20.72 | 20.7 | 0.01999855 | 3596 |
| Mon 15/08/2011 14:( | 20.72 | 20.72 | 20.72 | 0 | 3597 |

*Abbildung 47:* Data in table form

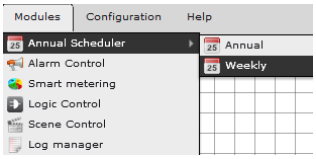
Click on to change from online to offline mode.

## 6. Modules

CBS Evolution offers the user numerous functions to automate and analyse a KNX installation. The functions are structured in module form. Go to the main menu Modules to select a function. The different modules are described below:

Smart Metering requires an additional license.

### 6.1. Weekly schedules




In CBS Evolution weekly and annual schedules can be created. Select Modules/Annual

Scheduler/Weekly to configure a weekly schedule.
Figure 48 shows the Editor for a weekly schedule.

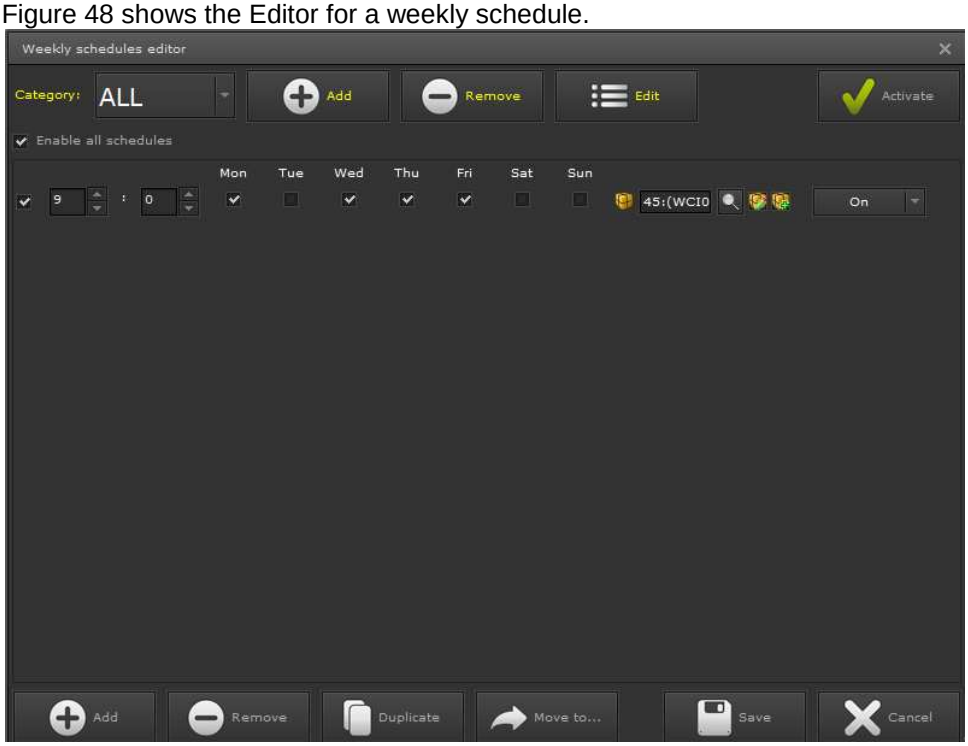



*Abbildung 48:* Configuration of a weekly schedule

Use the buttons in the footer to configure a schedule.
Click on Save to save the settings. Press Cancel to exit the Editor.
Press Add to add a schedule to the list.

Use Remove to delete a schedule from the list.
If you would like to switch a process point on and off, simply use Duplicate to copy a time schedule. You can now change the action or time. You can select a time and day(s) of the week. In addition, you can select the process point and the action.

Use the tick box next to the time setting to activate a schedule. If you tick Enable All Schedules, all schedules will be activated.
Click on Activate to activate the settings on the server.

Individual schedules can be ordered into categories such as lighting, shutters, heating, etc. Press to create a new category and to remove a category. Use to edit existing categories. Click on to insert an action into a category.
Figure 49 shows the category selection menu with the configuration buttons.

*Abbildung 49:* Category selection

## 6.1.1. Online time schedules

Time schedules can be edited online. You can create a menu element, which opens the online editing function ( ☛ see chapter 4.8.3.1).

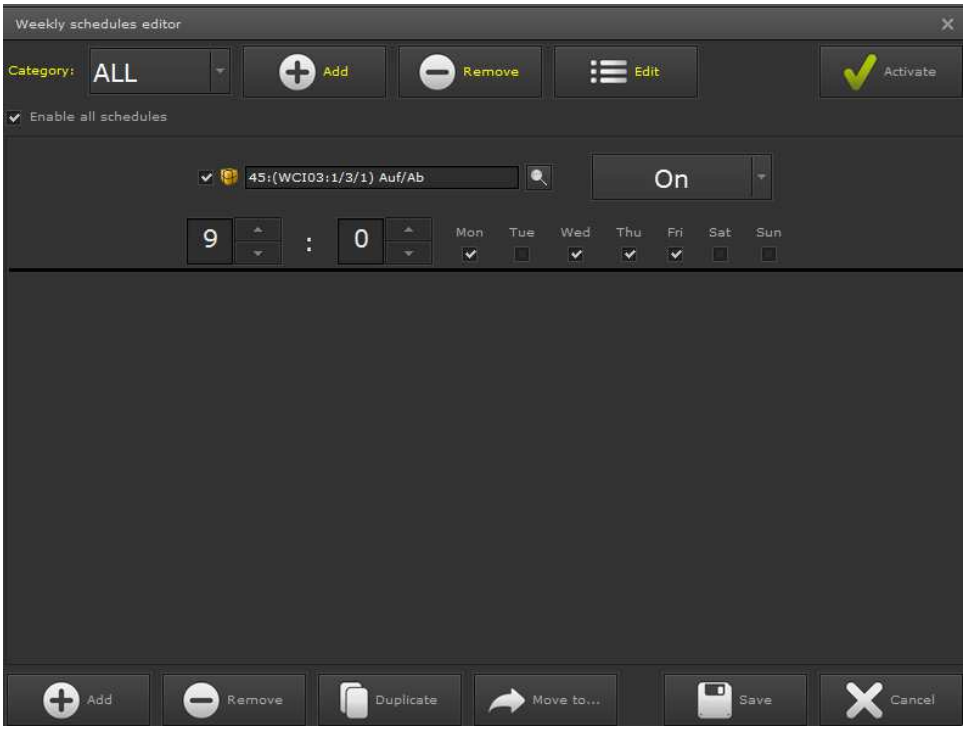
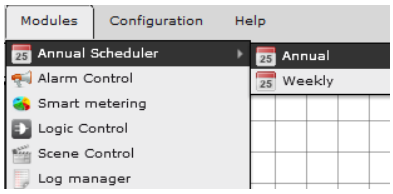



*Abbildung 50:* Online time schedules

The structure of the online editing mask is similar to that of the CBS Evolution Editor mask. The control elements are set up for touch control so that the screen is slightly different.

## 6.2. Annual schedules




CBS Evolution also supports the configuration of annual schedules.

Go to *Modules/Annual Scheduler/Annual* to open the module. Annual schedules can be used in parallel to weekly schedules. If you open the module, the configuration mask opens as shown in figure 51. The mask contains 3 views: a current calendar, schedules and periods and an event list. The calendar shows the current month and present day. Select the monthly display to open another month and double-click on the required day to bring up the date.

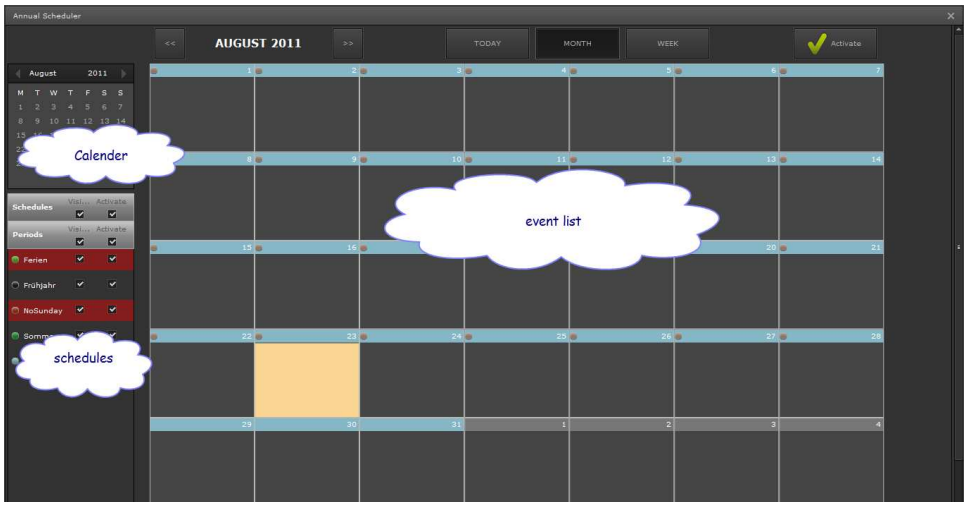
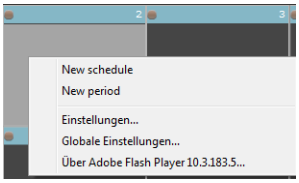



*Abbildung 51:* Annual planner view

In the CBS Evolution annual scheduler a distinction is made between time schedules and time periods. A schedule is an unlimited time period in which specified actions are performed repeatedly. Different schedules can be indicated by different colours. These are displayed in the event list (name and colour). Periods are fixed time periods. Within a period, actions are performed according to certain conditions. Periods can contain exceptions, which can change an event within a period. The first configuration step therefore is to decide whether you require a period or a schedule.

### 6.2.1. Creating a schedule




Click on the start date of the schedule in the event list. Press the right mouse button to open the menu and choose New schedule.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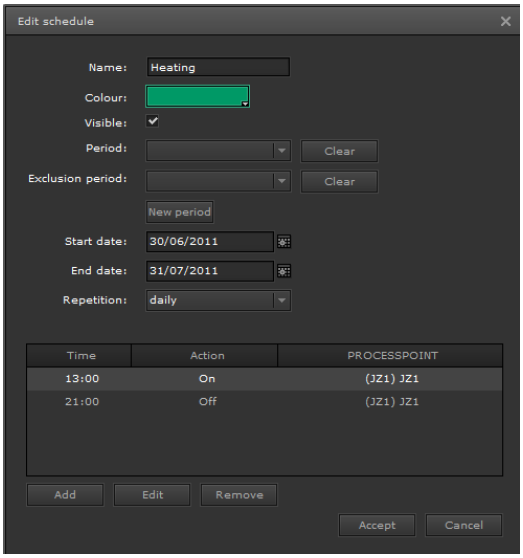
The following configuration mask opens.




**Name and colour:** Assigns a name and colour to the schedule that will be shown in the event list.

**Visible:** The schedule is displayed in the event list.

**Start and end date:** Sets the start and end of the schedule.

**Repetition:** Sets the repetition parameters. The following are available:

**None:** The event list is performed on the set date at the set times.

**Daily:** The event list is performed daily at the configured times beginning on the start date and finishing on the end date. In the example the process point JZ1 is switched on every day at 13:00 and switched off at 21:00 until the final date has been reached.

**Weekly:** The event list is performed weekly on the week day of the start date.

**Monthly:** The event list is performed every month following the start date.

**Yearly:** The event list is performed every year following the start date.

Click on Add to accept process points into the event list and configure them as shown in figure 52.

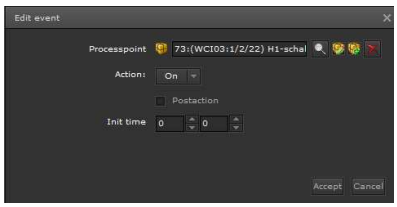



*Abbildung 52:* Configuration process point

**Process point:** Select the process point for the event.

**Action:** Shows the switch value

**Postaction:** If you restart the CBSE Server, the system checks whether an action needs to be performed.

**Init time:** gives the time in hours and minutes for the action.

Save the settings with OK.

In the example, the process point JZ1 is switched on every week from 30.06.2011 to 31.07.2011 at 13:00 and switched off at 21:00. The *Heating* schedule is displayed in the event list as shown in figure 53.

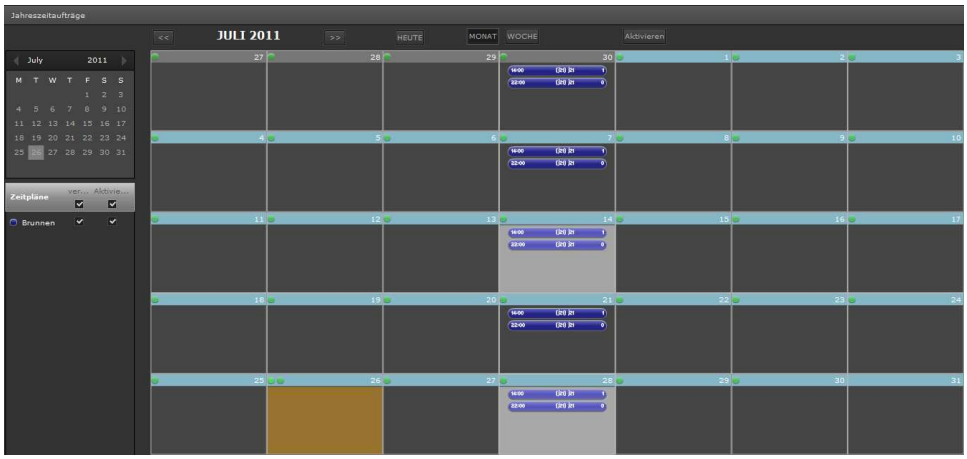



*Abbildung 53:* Schedule in the event list

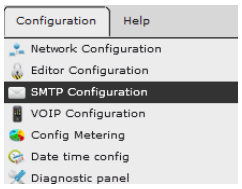
To activate a schedule, you must click on Activate .

## 6.3. Alarm configuration

In installations where security is important, alarm notifications enable users to find out more about the status of the installation. The user can define actions that when triggered pass on certain information. The easiest way to pass on information is directly on the screen. If it is not certain, however that such information will be read, other services such as e-mail or SMS notification are also available. An Internet provider is required for both e-mail and SMS notifications. The corresponding access details are configured under Configuration/SMTP Configuration or VoiP Service.

Before you start the alarm configuration, we recommend you configure the SMTP and/or VoIP Service. An e-mail account is required for the SMTP Service. Please pay particular attention to the settings the provider requires for the SMTP Service.

### 6.3.1. SMTP configuration




Go to the menu item Configuration/SMTP Configuration

Figure 54 gives an example of an SMTP configuration. Click on Add to create an account. Enter the SMTP Service and the **Port** of the provider in the **SMTP Host** field. Use the **From Mail** field to enter the address that is to be displayed as sender in the alarm e-mail. **Active** activates the service. **SMTP User** is the address sending the alarm. The corresponding password authorises the process. Click on Save to complete the

configuration. The SMTP Service is now configured.

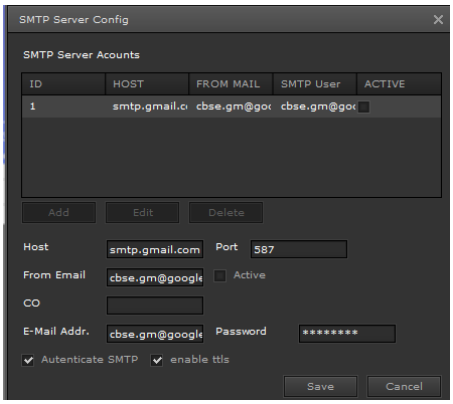
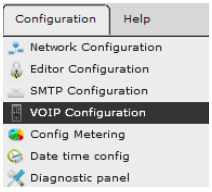



*Abbildung 54:* SMTP Configuration

See chapter 7.7 for the configuration of a number of free e-mail providers for which the CBSE E-mail Service has been tested. It may be that other providers use different e-mail parameters.

## 6.3.2. Configuration VoIP Service




Go to the menu item Configuration/ VoIP Configuration.
Click on Add to create an account.

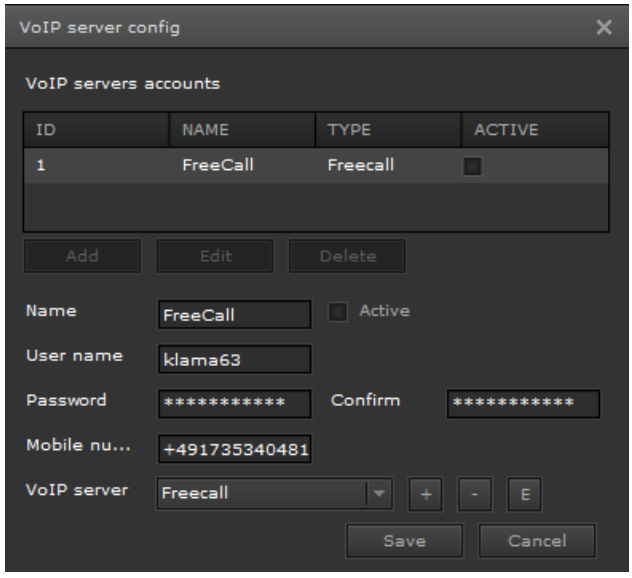



*Abbildung 55:* VoIP Server Configuration

Figure 55 gives an example of a VoIP configuration.
Name: Account name

| | |
|---|---|
| Aktiv | Activates the account |
| User name: | User name of the account |
| Password: | (Confirm) Password of the account |
| Mobile number: | Mobile number of the VoIP account |
| VoIP server: | Sets the provider for this service. |
| + - | Other services can be added or removed via “+“ and “-“ |

The providers listed in the pull-down menu have been tested for the SMS service.

## 6.4. Alarm configuration

Open the configuration window *Modules/Alarm Control*. We recommend you first edit the contact details (if you require alarm notification via E-mail or SMS) and only then define the actual alarms.

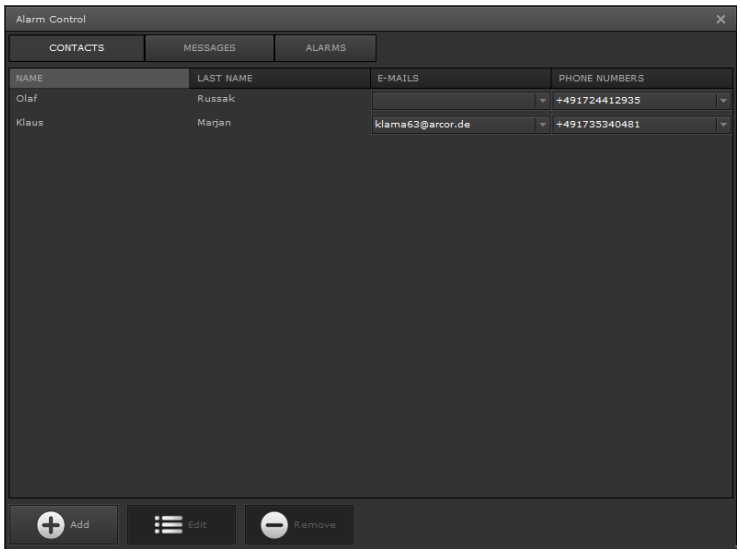



*Abbildung 56:* Alarm configuration

Figure 56 shows the main alarm control window.

### 6.4.1. Contacts

Click on *Contacts/Add* to enter a contact.

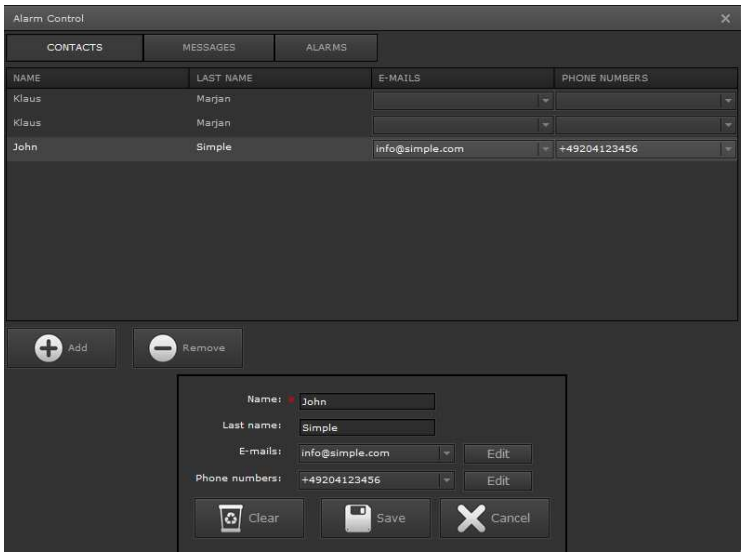



*Abbildung 57:* Configuration Contacts

Figure 57 shows the configuration of contact details which consist of name, first name, e-mail address and phone number. Press on Save to accept the settings. If the e-mail and/or SMS service are configured, alarms are forwarded to the e-mail address or sent as SMS to the phone number.

### 6.4.2. Messages

Click on *MESSAGES/Add* to create a new e-mail message.

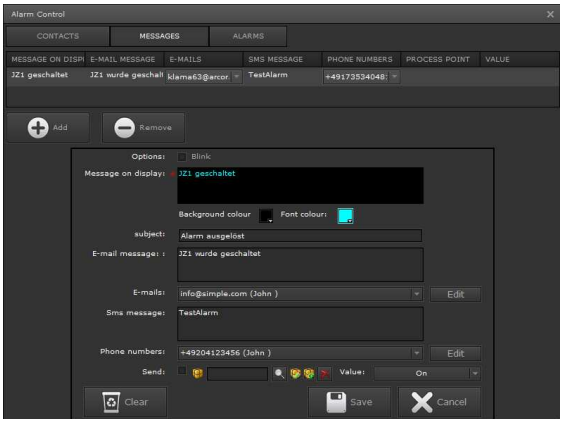



*Abbildung 58:* E-Mail message

**Message on display:** Shows the message that is displayed in the message list.

**Subject:** Short info in the subject line of the e-mail.
**E-mail message:** The actual e-mail message
**E-mails:** An e-mail address can be selected from the list of available addresses.
**SMS message:** Text that is sent as SMS.
**Phone numbers:** Phone number that the SMS is sent to.
**Send:** The set process point value is sent with each alarm. Use this function for example to open a window in the visualisation that contains alarm information.

### 6.4.3. Alarm

Go to *Alarm/Add* to configure a new alarm. Alarms are ordered according to priority.

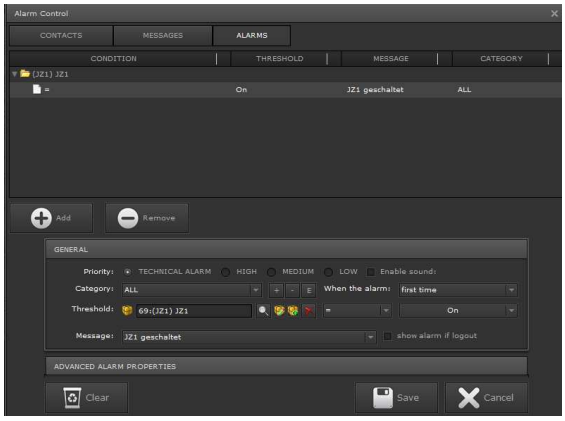



*Abbildung 59:* Alarm definition

The alarm definitions are set in the General window.
Alarms that have been given the **priority** MAX, MEDIUM, LOW can be seen and edited on each desktop. ADMIN ALARMS can only be edited on the Administrator Desktop.
**Category:** Use to define new categories. Categories can describe groups where an alarm originates such as lighting or heating.
**When the alarm:** sets the conditions for when an alarm is sent.
Always: A new alarm entry is generated for each alarm.
First time: A new alarm entry is generated only the first time an alarm occurs.
**Threshold:** Sets the process point and switch threshold.
**Message:** Select the required alarm message from the pull-down menu. The message contains all information for the CBSE alarm display, alarm e-mail and alarm SMS.
**Show alarm if logged out:** Shows alarm info on the login screen

Click on ZUSÄTZLICHE ALARMEIGENSCHAFTEN to open a further window (Figure61), where the following process points can be configured:

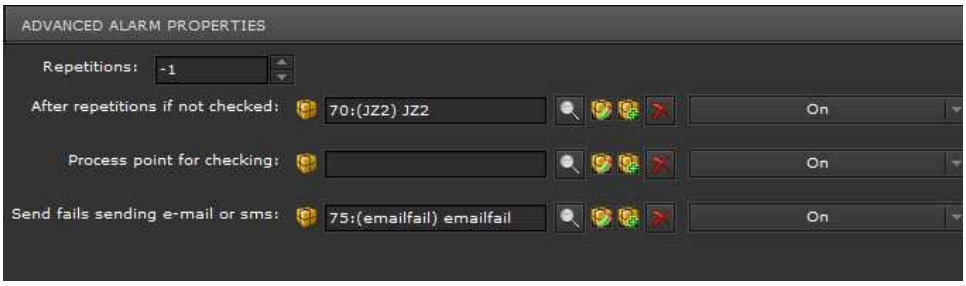



*Abbildung 60:* Advanced alarm properties

**Repetitions:** If you enter a number > 0 in the Repetitions field, an additional Delay field appears. These two parameters are used to set the number of repetitions and time in seconds after which an unchecked alarm is re-sent to the E-mail or SMS service. In the example an unchecked alarm is sent 3 times every 30 seconds to the E-Mail and SMS Service. After this the alarm is no longer sent.

**2. After repetitions if not checked:** If the repetitions have expired, a second alarm object is sent.

**Process point for checking:** The unchecked alarm can be acknowledged via a process point.

**Send fails sending e-mail or SMS:** If no e-mails can be sent because the service is not active, the configured process point is sent instead.

### 6.4.4. Online alarm management

Alarms can be edited on-line. To do so, a user needs to have administrator rights. Alarms are shown in the visualisation through an information window in the bottom right-hand corner.

*Abbildung 61:* Alarm information window

Alternatively you can configure a menu element that loads the CBSE function *Alarm.*

The time of the last alarm is shown in the header of the window. The alarm name, here JZ1 geschaltet, is displayed in the window.

Click on the symbols to edit the alarm as follows:

**Check alarm:** Opens the alarm management window according to figure 62. This window can only be opened if no alarm is active.

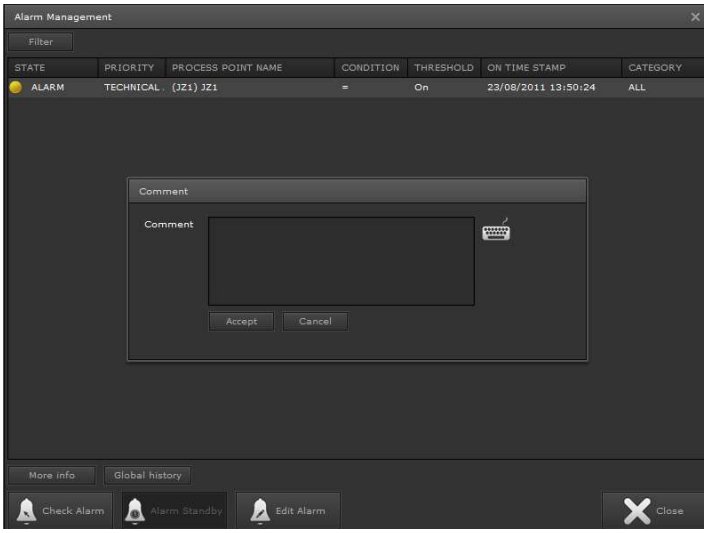



*Abbildung 62:* Alarm management

If an alarm has not been acknowledged, the Comment window is also open so that these alarms can be acknowledged with a comment. After they have been saved, all alarms are listed under alarm info. Select an alarm and click on Alarminfo to display the alarm details.

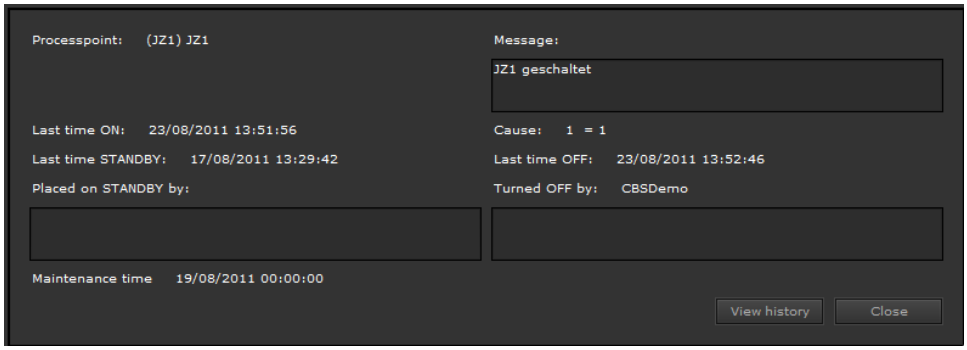



*Abbildung 63:* Alarm info

Figure 63 shows the alarm info. If an alarm has been acknowledged, the alarm info contains the alarm name, condition, date of acknowledgement, the user who acknowledged the alarm and the acknowledgement comment.

**Stand-by:** An alarm can only be acknowledged once it has stopped. If an installation is undergoing maintenance or refurbishment, for example, alarms

might be triggered permanently. To prevent this from happening, an authorised user can set alarms on stand-by. Click on the symbol to open the following alarm management window:

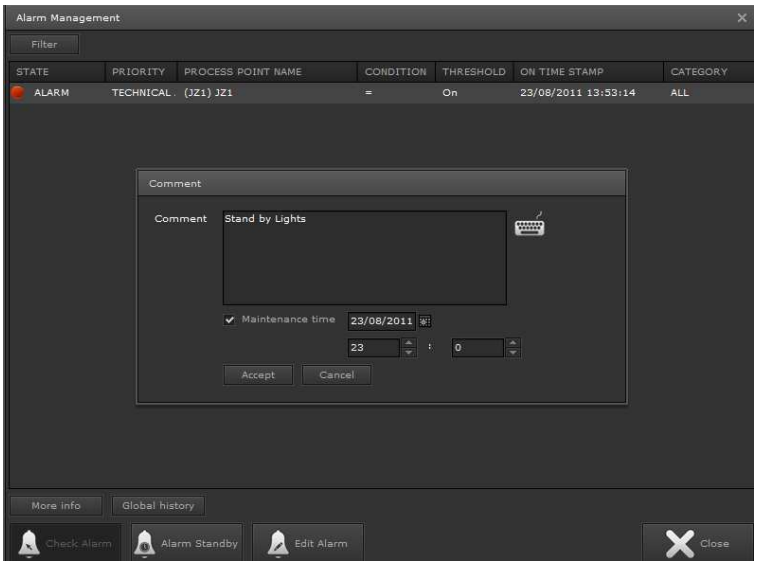
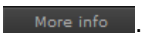



*Abbildung 64:* Stand-by alarm management

You can now enter the reason for the stand-by in the *Comment* window.

**Maintenance time**: Sets the time for the alarm stand-by. In this time period no alarm will be triggered.

If you save these settings, the alarm info is again listed in the alarm management window. To see more details, click on 

. Figure 65 shows the alarm info for an alarm in stand-by mode.

The acknowledgement details, comments and the user who edited the alarm, are displayed.

*Abbildung 65:* Alarm on stand-by

**Alarm list**: Opens the alarm management and lists all alarms. Use

to only display certain alarm types such as active ones.

**Editing:** Opens the alarm configuration described in chapter 6.4

## 6.5. Scene control

The CBS Evolution scene control module can define any number of scenes. A scene consists of a list of process points that are executed depending on an event (trigger).

Go to the main menu of the Editor and select *Modules/Scene Control*.
Click on New to open the scene editor. Figure 66 shows the scene configuration window. Use Edit to open an existing scene, Delete to remove and Copy to copy a scene.

To create a scene, select SCENES.

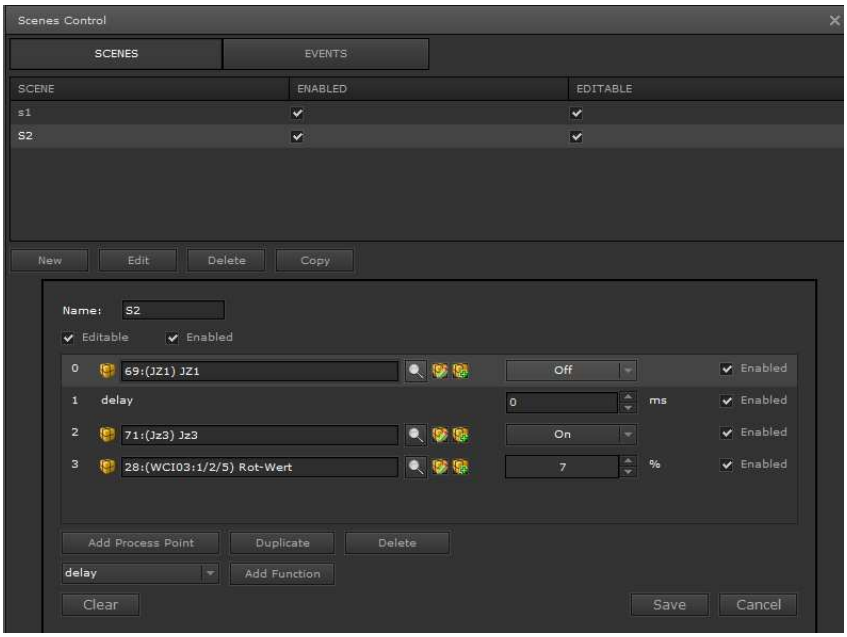



*Abbildung 66:* Scene configuration

**Name:** Name of the scene
**Editable:** The user can edit the scene.
**Enabled:** The scene is active and can be played.

Add Process Point — Adds a process point to the scene
Duplicate — Copies a process point from the scene
Delete — Deletes a process point from the scene

Use delay Add Function to insert a delay into the scene. The delay is entered in ms.

Save Saves the scene.

Define the event that triggers a scene by clicking on EVENTS. Click on New to open the event editor.

All triggers are listed in the main window. If you select a trigger, the trigger conditions are also displayed.

**Process point:** Process point selection

**Condition play:** Conditions of the value that triggers the scene.

You can also use the scene module to program scenes with new scene values on-line. For new scenes programming, the current scene values in the installation are recorded.

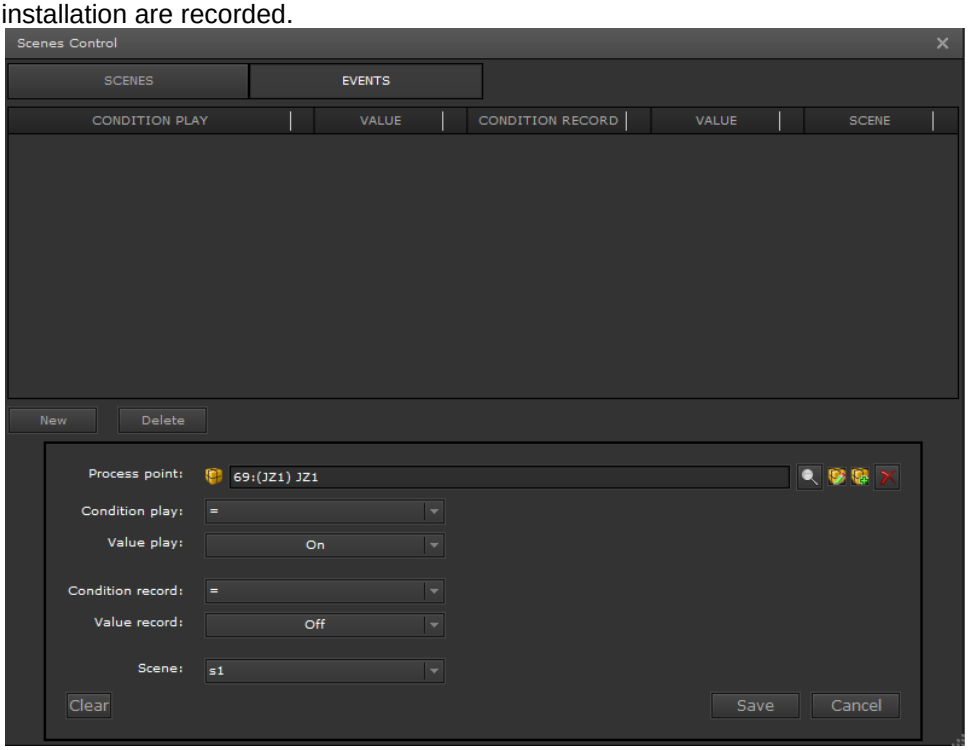



*Abbildung 67:* Event configuration

**Condition record:** Conditions for recording an individual status value that will be transferred into the scene as a new scene value.

**Value record:** Sets the value to meet the recording conditions.

**Scene:** Opens a list of available scenes so you can select the scene that will be assigned to the trigger.

So that values can be read by the KNX Bus, the Read flags for the respective process points need to be selected. If you would like to use this function, we suggest you assign both the Set Value data point and the corresponding data point for status value to the process point for the scene value. Select the Write flag for the value setting data point and the Read flag for the status data point. If you play the scene, the scene values are transmitted to the bus via the writing data point. New scene values are read via the status data points.

Save saves the settings

### 6.5.1. Online scene editining

CBS Evolution scenes can also be edited on-line. Open the CBSE function ”Scene control“ via a navigation element. Figure 68 shows the scene control window. All scenes are listed in the main window. To edit a scene, you must select it first.

*Abbildung 68:* Online scene control

Play scene: Starts the selected scene

Reads the current scene values from the bus and saves these as new scene values

Opens the scene editor. The following settings are possible:

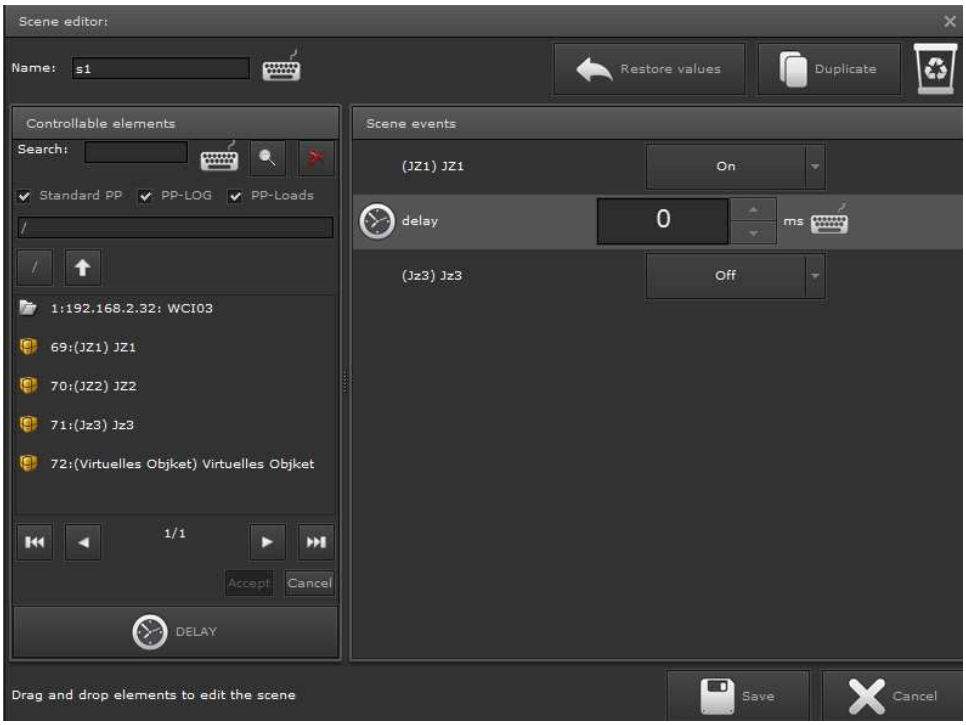
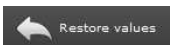



*Abbildung 69:* Scene editor

Add scene elements to a scene via drag & drop.



restores the original scene settings.

copies a scene

Drag & drop a scene element into this symbol to delete it.

opens a screen keyboard, for example to enter values from a touch display.

disables the selected scene

A click on

in figure 68 opens the Editor according to figure 70.

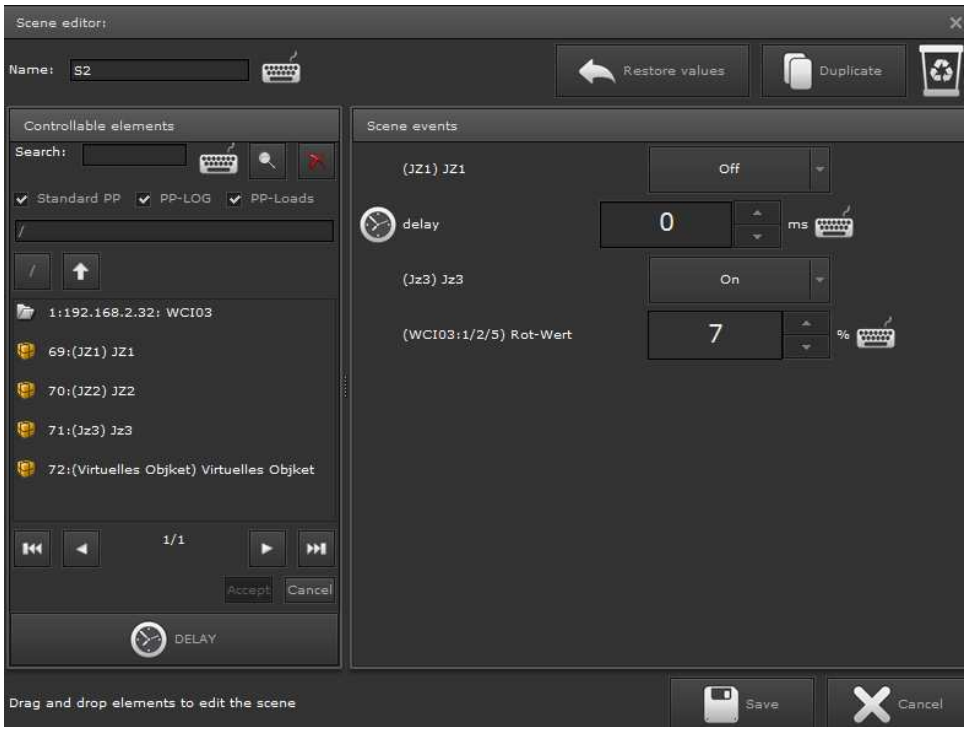



*Abbildung 70:* Creating online scenes

Use drag & drop to move objects as “possible scene objects“ into the window Scene events. After this, you can edit the scene elements as described above.

## 6.6. CBSE Logic Module

ComBridge Studio Evolution offers the user a powerful, graphical logic module. In addition to standard gates such as “AND“, “OR“, “INVERT“, etc., comparators, mathematical operators, converters, gates and others can be used in complex logic plans. Logic functions are configured on logic pages. Logic pages can be assigned to sub-folders so that the logic function can be structured in ordered groups. Start the logic module with Modules/Logic Control.

Figure 71 shows the open logic editor. If no logic pages have been created, only the main page *LOGICPAGES* is visible.

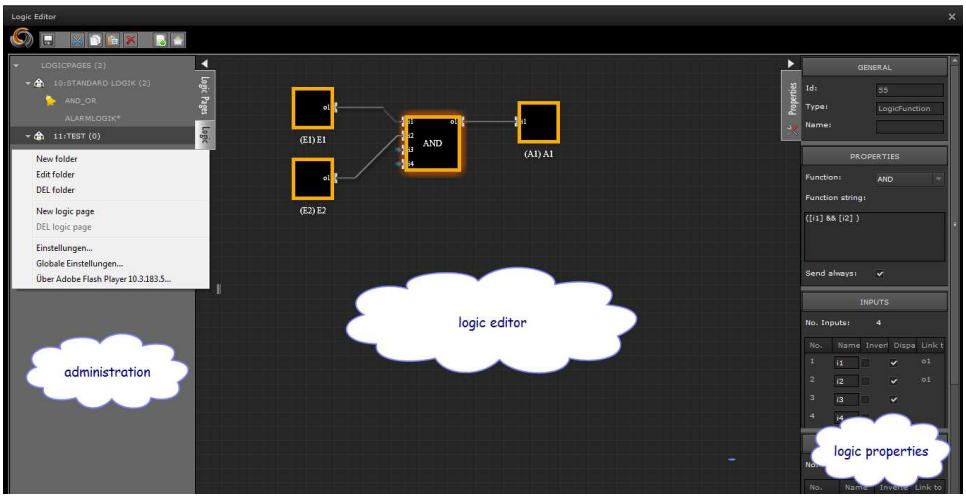



*Abbildung 71:* Logic Editor structure

Select

and click on the left-hand side menu to open the selection menu with the following functions:

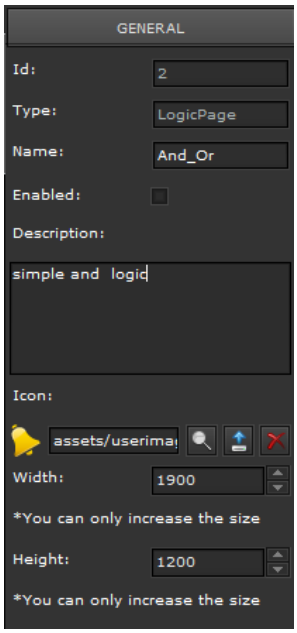
**New folder**: Creates a folder for logic pages.

**Edit folder**: The folder name and image can be edited.

**Delete folder:** Deletes a folder

**New logic page**: Creates a new logic page in the selected folder

**Delete logic page**: Deletes the selected logic page




If you select a logic page or a folder, the corresponding properties appear in the properties window on the right-hand side.

Name: Name of the page or folder

Enabled: Activates the page or folder

Description: Description text for the page or folder

Icon: Image or page symbol. Symbols are assigned to a page/folder description via the elements


Width/Height: The standard size of a logic page is 1900x1200 pixels. The size can be enlarged for complex logic plans but not reduced.

The following functions can be found in the header of the Logic Editor:

: saves the logic page in the Editor

: cuts the selected element

: deletes the selected element

: activates the projected function of the selected logic page in CBSE

: activates all logic pages in CBSE

: inserts a copy of the selected element

If a logic page is not enabled, the function projected on the page is not executed in CBS Evolution. Saving only saves the settings in the Logic Editor.

Figure 72 shows the structure of a simple logic function. Principally a logic function consists of an input, a logic gate and an output. Interconnections of several gates with inputs and outputs is possible.

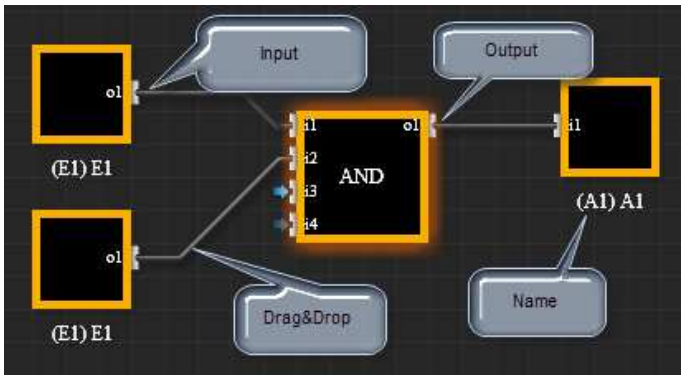
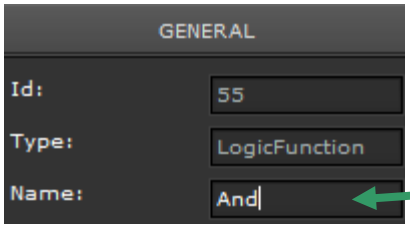


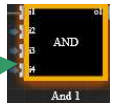

*Abbildung 72:* Structure of the logic elements

The central element of a logic is the gate with inputs on the left hand side and outputs on the right hand side. Inputs and outputs are configured with the respective process points. If the connector of an element is selected with a pressed-down left mouse button, a line to another connector can be created by dragging the mouse along. Select an element to configure the parameters in the properties menu on the right hand side. The general properties are the same for all element types.

**General**




Name: describes the element (inputs, outputs and gates). The name is displayed on the element.




**Properties**

Process points can be selected for inputs and outputs. If a process point is configured for the first time, the name of the process point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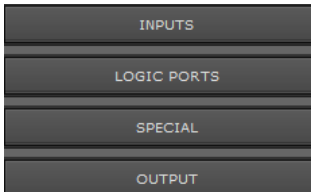
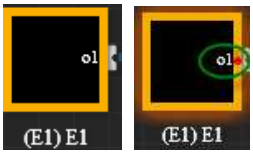
automatically becomes the name of the element. If the process point is changed, the name might have to be adjusted manually.

Click on to open the function menu on the left hand side of the Editor.

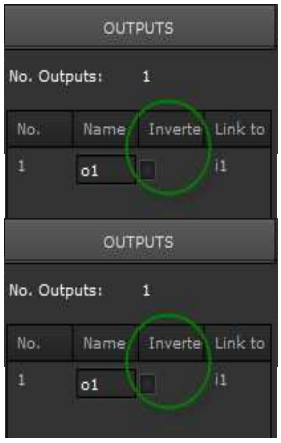



The logic functions are ordered into the following groups:

## 6.6.1. Logic inputs and outputs



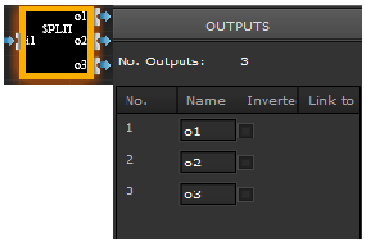

Logic inputs have one output as an element. Select the input to configure the corresponding properties in the properties menu on the right hand side.



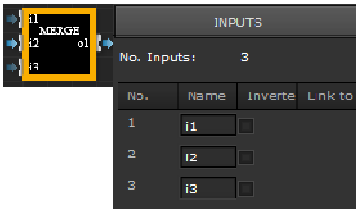
Logic outputs have one input as an element. Select the output to configure the corresponding properties.

Select

to invert the input or output. Inverted inputs or outputs are shown on the element through a red dot by the connector.




**Split** splits the input signal into up to three output signals. The output signals can be inverted individually.^




**Merge** merges up to 4 input signals to one output signal (OR gate). The input signals can be inverted individually.

## 6.6.2. Logic ports

Three standard gate types can be selected in the logic ports menu: CMP (comparator), MTH (mathematical operations) and LOG (logic functions).

All gates have up to 4 inputs and one output. Select a gate to configure its properties.

### 6.6.2.1. CMP Comparator

This gate compares the inputs with one another. If the condition is met, the output is set to true.

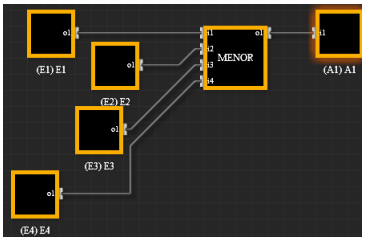



*Abbildung 73:* Comparison: Menor

The following compare functions can be selected in the properties menu.

| | |
|---|---|
| **EQUAL** | E1 = E2 = E3 = E4 = A1 |
| **MENO**R | E1 < E2 < E3 < E4 = A1 |
| **Mayor** | E1 > E2 > E3 > E4 = A1 |
| **DISTINC**T | E1 <> E2 <> E3 <> E4 = A1 |
| **<=** | E1 <= E2 <= E3 <= E4 = A1 |
| **>=** | E1 >= E2 >= E3 >= E4 = A1 |

Use the **Function string** field to enter an individual compare function.

**Send always**: If you tick this box, the output is calculated and sent for each event. If the box is not ticked, the output is only sent if it changes after an event.

If you select the comparator gate, the parameters for input and output are shown in the properties menu on the right hand side.

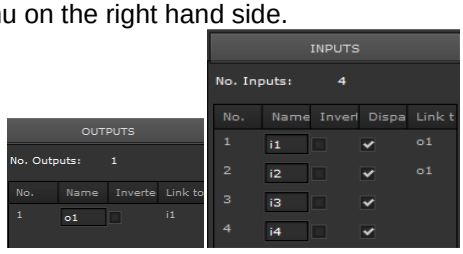



*Abbildung 74:* Input and output parameters

In figure 74 two inputs E1 and E2 are connected to the gate. The maximum number of inputs (4) is set in the input properties. Input i1 is inverted; i1 and i2 are connected to output o1. All inputs are sending to the output.

### 6.6.3. MTH mathematical functions

These gates calculate a mathematical function depending on the input values. The inputs are linked to an operator and calculated. The result is sent to the output.

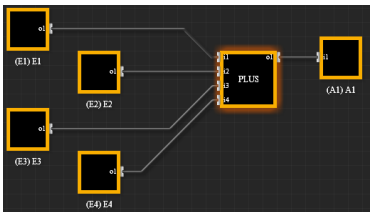
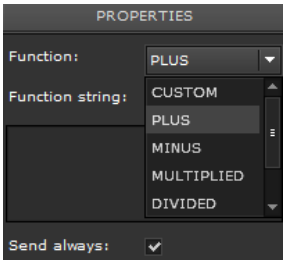



*Abbildung 75:* Addition of the 4 entries




**CUSTOM**: Use the Function field to enter a formula that will calculate the output in relation to the inputs.

**PLUS:** E1 + E2 + E3 + E4 = A1

**MINUS**: E1 - E2 - E3 - E4 = A1

**MULTIPLIED**: E1 * E2 * E3 + E4 = A1

**DIVIDED**: E1 / E2 / E3 / E4 = A1

**MODULE**: calculates the rest b of the division n/m (Modulo).

**EXPONENT:** calculates the value of basis and exponent. Input 1 (E1) is the basis and input 2 (E2) the exponent. $E1^{E2}$=A1

### 6.6.3.1. LOG Logic

Use this gate to create logic connections with the standard gates **AND** and **OR**. Up to four inputs can be connected to a gate.

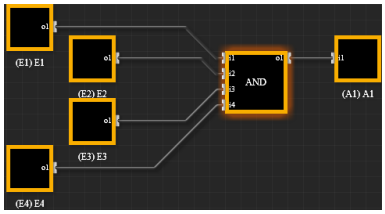



*Abbildung 76:* Example of an AND gate

Custom: Use the Function window to enter any type of logic connection with up to 4 inputs.

AND: E1 ^E2 ^ E3 ^ E4 = A1

OR: E1 v E2 v E3 v E4 = A1

## 6.6.4. Advanced gates

Additional gates for a logic plan can be selected from the logic menu Advanced gates.

### 6.6.4.1. Signal delay

This gate delays the signal relay. The delay time can be set in the properties menu if the gate is selected.

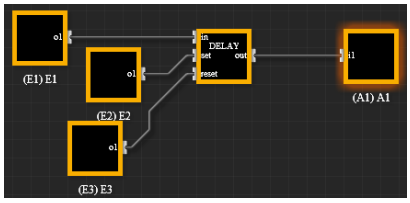



*Abbildung 77:* Example of a signal delay

A1 is the delayed signal of E1. The delay time can be set via the process point E2 (set).
The delay time at the input set overwrites the standard delay time.
Use the process point E3 (reset) to reset the delay. With a new signal on E1 the delay starts again from 0.

### 6.6.4.2. Gate signal relay

A signal is only sent to the output, when a relay signal is enabled.

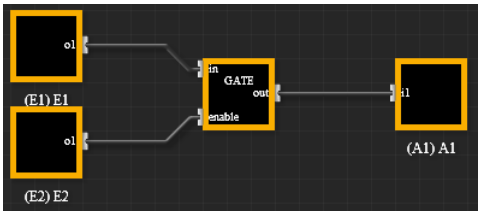



*Abbildung 78:* Example of signal relay

### 6.6.4.3. Stair impulse sequence

This gate creates an impulse sequence. E1 = 1 then becomes A1 for the length of the delay time 1. After the delay time, the output A1 returns to 0.

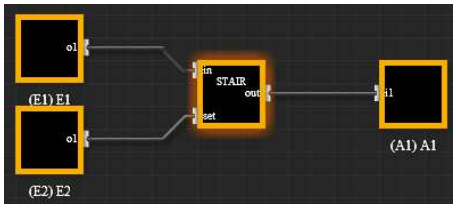
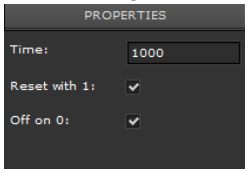



*Abbildung 79:* Example of an impulse sequence

Select the gate to configure the following properties.




**Time:** represents the delay time in {ms]. This time can be overwritten with input E1 (set).

**Reset with 1**: If during the delay time, the value 1 is sent at input E1, the delay time is reset. If this box is not ticked, there is no reset.
**Off on 0**: If during the delay time, a value other than 1 is sent at input E1, the output is immediately set to 0.

### 6.6.4.4. Counter

This gate is used to count signal impulses. The gate can count forward (+) and backward (-).

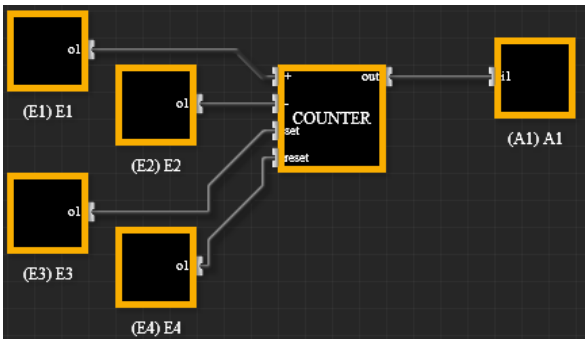
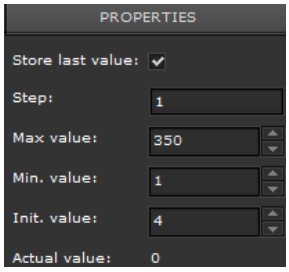



*Abbildung 80:* Example Counter

Use E3 (set) to pre-set the initial counter reading. With the next impulse on E1, the reading continues. Input E4 sets the counter reading back to the initial value. Select the gate to configure its parameters.




**Store last value**: saves the last reading
**Step:** sets the increment size for the reading
**MAX-/MIN value**: the minimum and maximum counter value
**Init. value:** initial counter reading. Use Reset to return the counter to its initial value.
**Actual value**: current counter reading

### 6.6.4.5. CYCLICAL repetition

Use this gate to repeat signals at input (E1) after a certain time period. Enter the number of repetitions required. The repetition cycle is turned on and off via a switch.

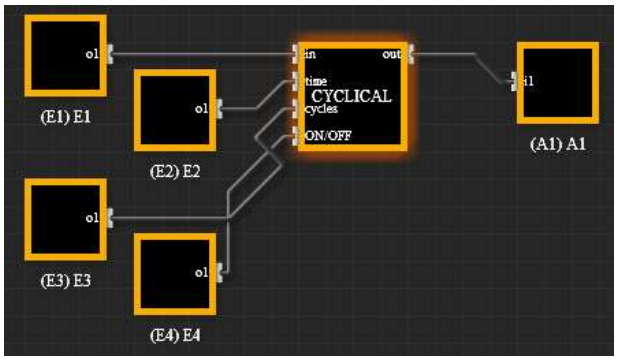
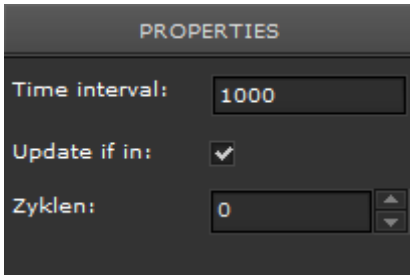



*Abbildung 81:* Example signal repetition

E1 (in) is the input signal. E2 (time) is the repetition time. E3 (cycles) is the number of repetitions. E4 = 1 (ON/OFF) starts the repetitions. A1 (out) is the output signal.

The following properties can be projected for the gate:




**Time interval:** This sets the repetition time. The value can be overwritten via the input "time".

**Update if in**: Tick this box to send the input signal to the output if it changes during the repetition cycle. If the box is unchecked, the changed signal is only sent to the output after the end of the current cycle and a re-start.

**Cycles:** Sets the number of repetition cycles. If the value is = 0, the output signal with input ON/OFF = 1 is sent to the output.

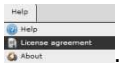
# 7. Appendix

## 7.1. CBS Evolution Server data sheet

| | |
|---|---|
| **System** | |
| · Processor | Intel® Atom™ N270 1.6GHz |
| · CPU Socket | On Board |
| · Chipset | Intel® 945GSE + ICH9M |
| · Memory | 1 x DDR2 533/667 MHz SO-DIMM, up to 2GB |
| **I/O Interfaces** | |
| · Display Port | 1 x DVI-I |
| · Super I/O | Front I/O : 2 x USB, Power Button, 3 x COM<br>Rear I/O : 2 x RJ45, DVI-I,2 x USB, 1 x COM, DC Jack |
| · USB | 4 x USB 2.0 |
| · LAN | 2 x Intel® 82574L GbE LAN |
| · Storage | 1 x SATA II HDD |
| · Application | Automation, POS, Digital Signage, Car PC |
| · Power Source | DC 12V |
| **Mechanical and Environmental** | |
| · Dimension | 220 mm x 135 mm x 43 mm (L x W x H) |
| · Operating Temperature | 0℃~40 ℃ |
| · Storage Temperature | -20℃~80 ℃ |
| · Regulatory Compliance | CE, FCC, BSMI, VCCI, C-tick<br>RoHS Compliant |
| | |

## 7.2. License agreement

A CBS Evolution user is entitled to use CBS Evolution applications after agreeing to the CBSE terms and conditions. When you first log in, the license terms and conditions appear in the browser. You are asked to read these carefully. When you have reached the last page (page 8/8) of the license agreement, you can accept the conditions by clicking on OK. The information page closes. Only when another user logs in for the first time, will the terms and conditions be shown again.

You can see the license agreement at any time by clicking on 

.

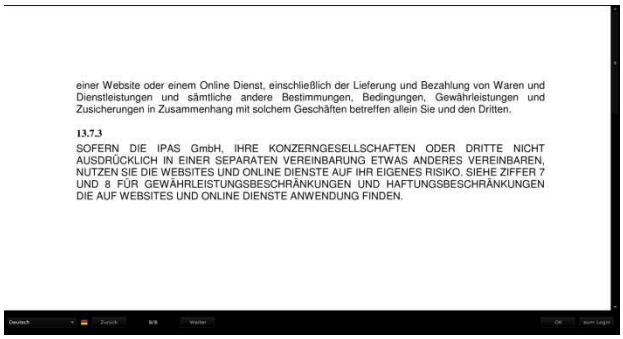



*Abbildung 82:* Confirmation of the license agreement

## 7.3. License upgrade

CBS Evolution comes with a basic license for 3 users and one gateway. A license upgrade enables you to use additional modules, gateways or users. Go to www.ipas-products.com for information on a license upgrade. To upgrade the license, IPAS requires the MAC address of the CBS Evolution Server. You will receive a license file that has to be installed on the CBS Evolution Server. CBS Evolution offers a download page on the server for this installation. To install the license upgrade, open a browser window with the following URL:

http://IP-CBSE-Server:8181/license.php

You will now be asked for security details. The user name is “admin“ and the password is “ipas4u“. The following download page opens.

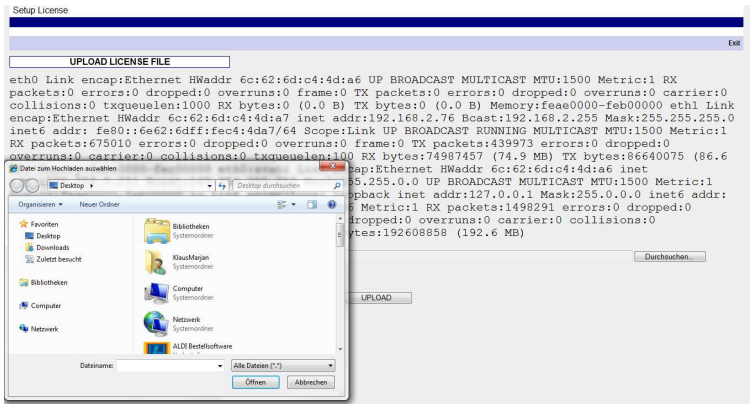



*Abbildung 83:* CBSE License upgrade

Click on Durchsuchen... to enter the path for the license upgrade. Click on UPLOAD to install the license upgrade.

Before the installation, please ensure that the license corresponds to the MAC address.

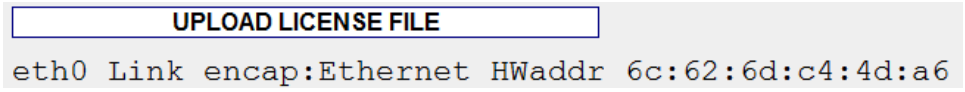
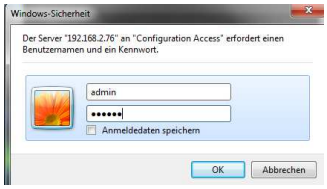



*Abbildung 84:* Information about the MAC address

## 7.4. Software update

IPAS endeavours to improve its CBS Evolution software all the time. The CBS Evolution software can therefore be updated at any time. The software update can be installed via a CBS Evolution update page. Open the CBS Evolution update page with the URL http://IP-CBSE-Server:8181/upload.php.




You will now be asked for security details. The user name is “admin“ and the password is “ipas4u“. The following download page opens.

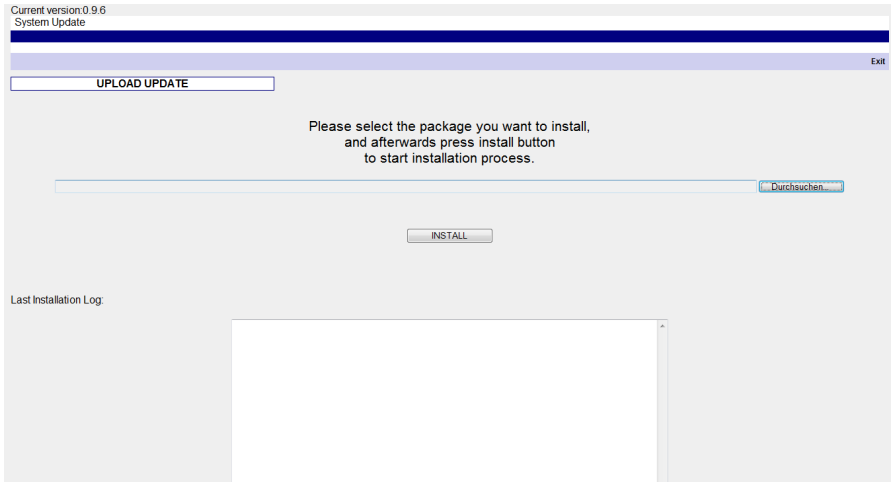



*Abbildung 85:* CBSE update page

The currently installed CBS Evolution version is displayed in the upper left hand corner.

You can only ever install the next higher update. This means if the installed version is version 0.9.4 and the most recent update is version 0.9.6, you need to install 0.9.5 first.

Click on Durchsuchen... to select the current update. Click on INSTALL to start the installation. The information window beneath INSTALL informs about the end of the installation. You need to restart the CBS Evolution Server after the installation.

## 7.5. FTP Access

Use FTP to upload user-specific data such as images to the CBS Evolution Server.

Enter the following URL for FTP access:
ftp://IP-Adress.
You will now be asked for security details.
The user name is “veuser” and the password is “veadmin”.
The file structure is displayed as shown in figure 87. You can now for example copy images into the directory *galleries*.

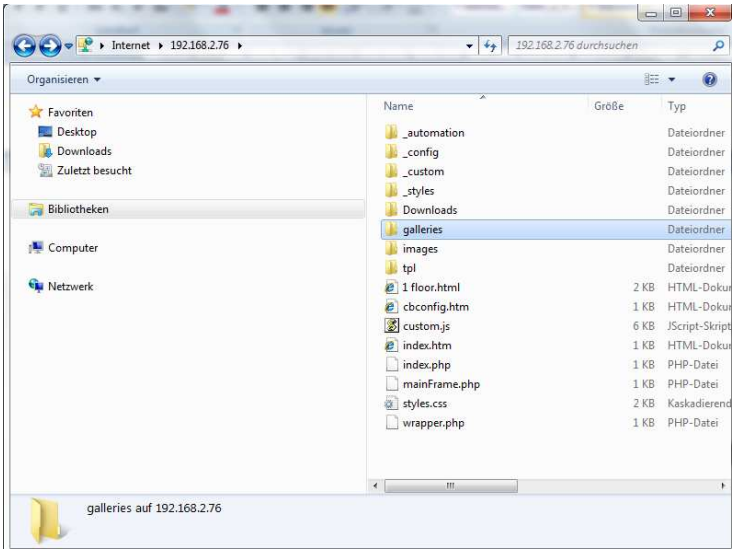



*Abbildung 86:* FTP file structure on the CBSE Server

You can also use FTP to copy project images into the directory ftp://IPCBSE/images/custom/Projectname or to delete them.

## 7.6. CBSE Diagnostic tool

CBS Evolution offers the integrator a powerful diagnostic tool. This tool informs about the available licenses and the number of connected and unconnected gateways.
Figure 87 gives an example of available licenses and registered process points.

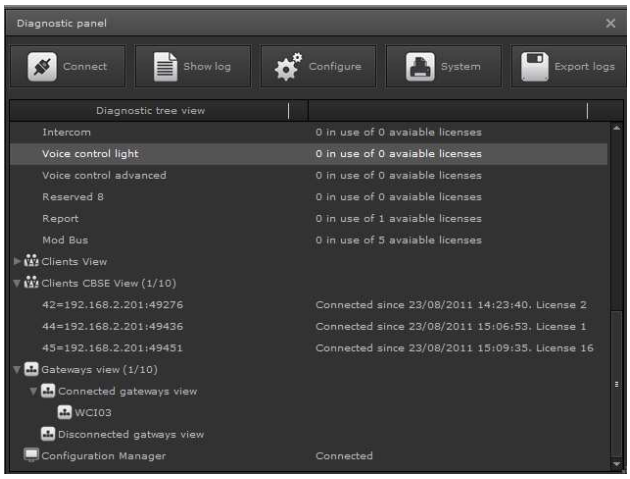
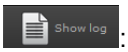



*Abbildung 87:* Start page diagnostic tool

Use the menu list for additional functions.

: Click on this element to manually break the connection to the Client Manager. When you start CBSE, the connection is normally made automatically.




: Click on this element to open CBSE Log Manager. The Log Manager records the entire communication that occurs either via the Client Manager or the CBSE application gateway. The recordings can be saved and sent to IPAS if you have a support request.

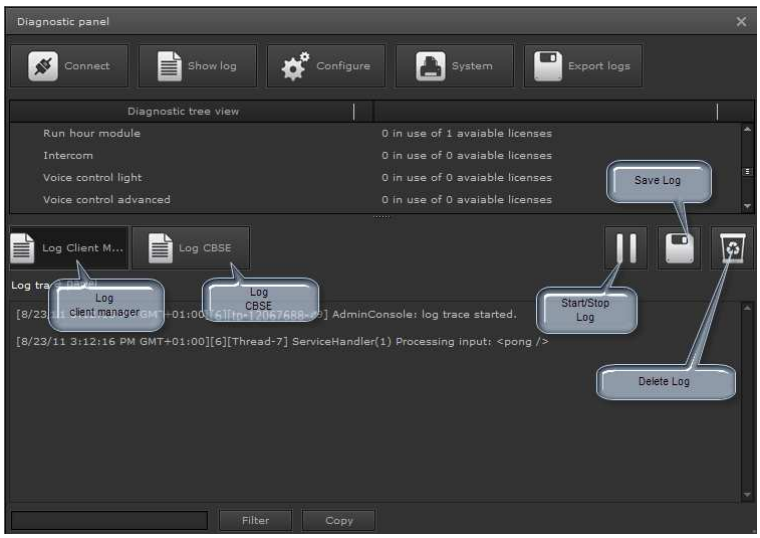



*Abbildung 88:* Diagnostic: Recording

Click on this element to open the configuration of the diagnostic tool. The tool connects to the CBSE Configuration Manager via the IP address of the CBSE Server and port 7680. All information can be read from the system via

this connection.

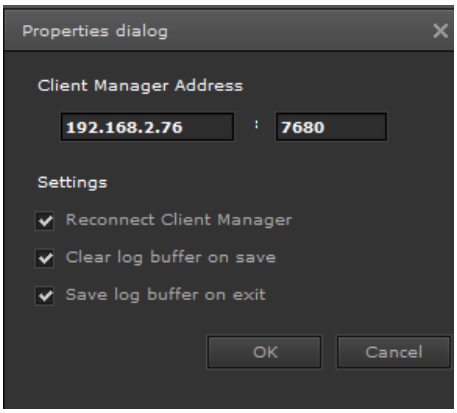



*Abbildung 89:* Example configuration

Figure 89 gives an example of a possible configuration.

Click on this element to open a system data window.

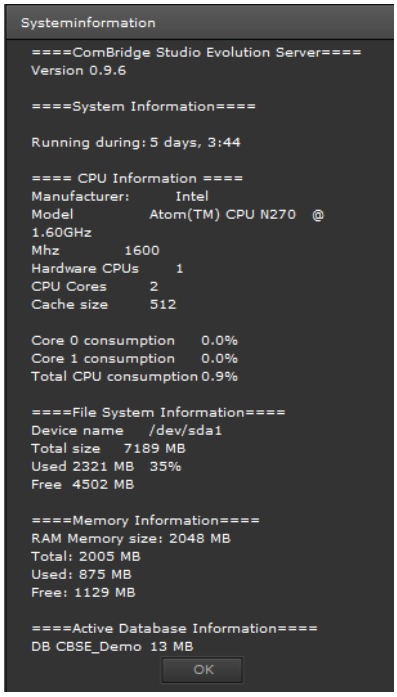



*Abbildung 90:* System data view

Click on this element to export all logs into a file. The file can then be sent to IPAS if you have a support request.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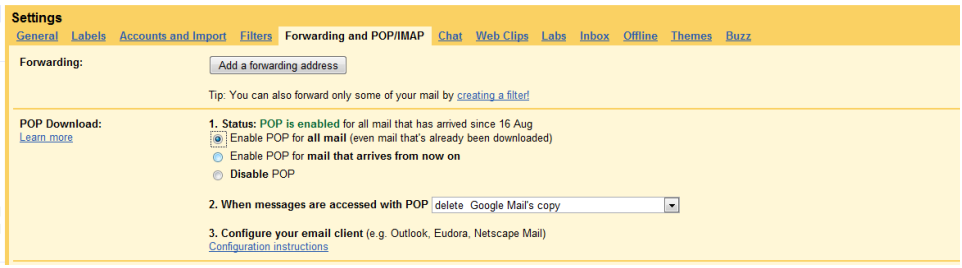
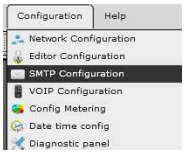
## 7.7. Various e-mail configurations

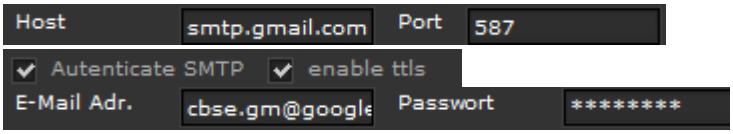
### 7.7.1. GoogleMail

To use the provider Google for the CBSE SMTP Service, you first need to create an e-mail account at www.googlemail.com. Once the account has been created, the required PoP Download needs to be set. To do so, open the E-Mail Settings.




Now the following SMTP Service needs to be configured in CBSE :




Attention: If you client does not support SMTP authentication, you cannot access your Google Mail.

## 7.8. Online-Support

IPAS offers its customers the best possible support. We offer an online support for quick help. With the remote control software TeamViewer (you can download the required software free of charge from www.teamviewer.com) IPAS can offer direct online support for all questions around the projection. For system related technical questions, IPAS requires direct access to the CBS Evolution Server. To enable the access, you need to set port forwarding in your internet router.

The following ports are required for a faultless operation and support:

| | | |
|---|---|---|
| Port 80: | -> | Web access Flash application |
| Port 100088 | -> | Policy security request (Flash player) |
| Port 3671: | -> | KNX Communication |
| Port 7680: | -> | Configuration Manager |
| Port 22: | -> | Support |

| | | |
|---|---|---|
| Port 8181: | -> | Updates and Licenses |
| Port 21: | -> | FTP |

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