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CubeVision

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1 INTRODUCTION

The CubeVision element is a new visualization element of the eibPort editor.

1.1 CUBEVISION ELEMENT

CubeVision element can be used like all the others visualization elements and can be integrated in existing visualizations. Even so, a visualization only can exist of one visualization page and the CubeVision element itself.

Visualizations of the Cube Vision element are executable not only on PC, but also on smart tablets with their touch function, which will offer best conditions for a new experience of visualization!

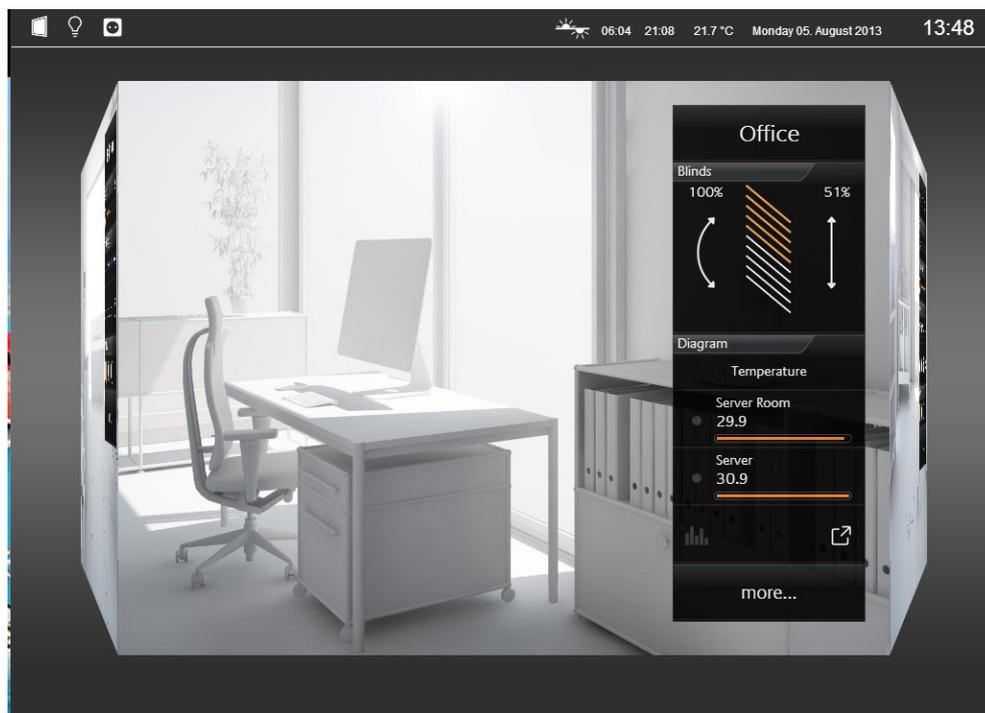


Figure 1 CubeVision visualization element

Please note: Please always use only one CubeVision element for every single visualization project and page.

CubeVision element is only available for Control L..



2 NAVIGATION AND COMPONENTS OF CUBEVISION

This chapter deals with operating and navigation of the CubeVision element. Furthermore single components will be described to find out more about characteristics, techniques and automatisms of CubeVision element.

Terms and definitions in an overview:

- View of room and navigation
- Quick Navigation
- Instant Control Panel [ICP]
- Extended Control Panel [ECP]
- Extended Element View [EEV]

2.1 ROOM VIEW AND NAVIGATION BY CUBE

Navigation through the building structure takes place by horizontally and vertically sliding in the mode room view.

Room view:

By room view, this sight will be intended, which shows a room, more precisely the front surface of a cube. This surface will be used for navigation.

Navigation:

As it will be shown in the following two figures, shifting from room to room by a horizontal finger movement is possible. In horizontal direction exits no limits. This means, that after the last room the first room will be displayed again.

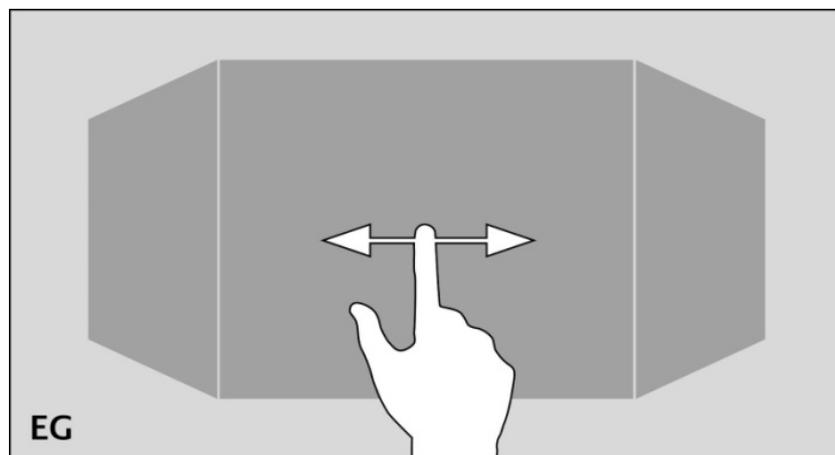


Figure 2 Horizontal finger movement for shifting the room

The vertical finger movement serves for navigation through levels resp. floors. If the end of vertical direction will be reached, an orange coloured corona appears at the border below or at the top end, according to which direction the user`s moving takes place. This indicates the end of vertical direction.

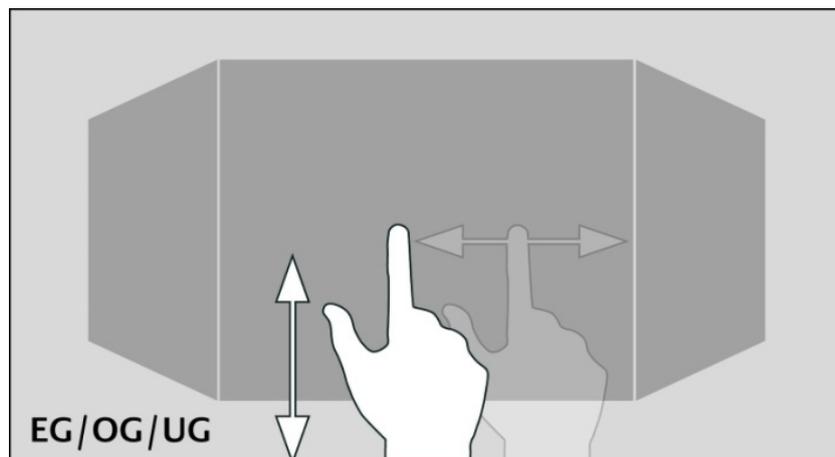


Figure 3 Vertical finger movement for shifting levels

One of the major advantage of CubeVision element is, that the user doesn`t have to be worry about navigation between rooms or levels. Working with changeover elements, how its known in classical visualization, is cancelled completely. As well the testing of the navigation: if somewhere the user will be toddle into a deadlock, from which he can`t get back to the front page, because a changeover element is simply absent on this visualization page.

Please note: To reach a room directly and without detours (also in another level), quick navigation can be applied.



2.2 QUICK NAVIGATION

In the mode Quick Navigation, all rooms will be displayed at one side for faster navigation. In this way, user can switch directly to each and every room. The creation of an overview for all rooms takes place automatically.

Opening of Quick Navigation:

Quick Navigation can be started in two different forms.

- Over the complete area of the room view
- By an arrow, this will be displayed downright in the room view.

The option how to start *Quick Navigation* can be adjusted in the configuration window (see figure 5) of the CubeVision element (in visualization editor).

Closing Quick Navigation:

By the exit symbol in *Quick Navigation*, the overview can be closed, to shift back to the room view.

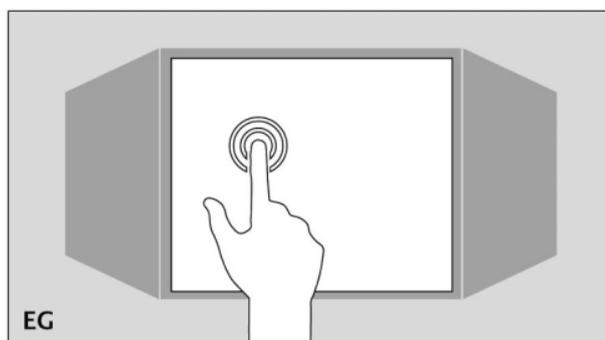


Figure 4 Starting Quick Navigation

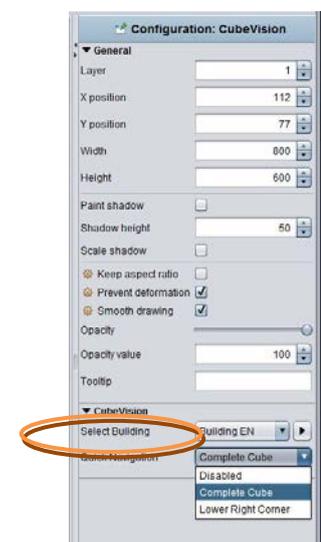


Figure 5 Configuration of „Quick Navigation”

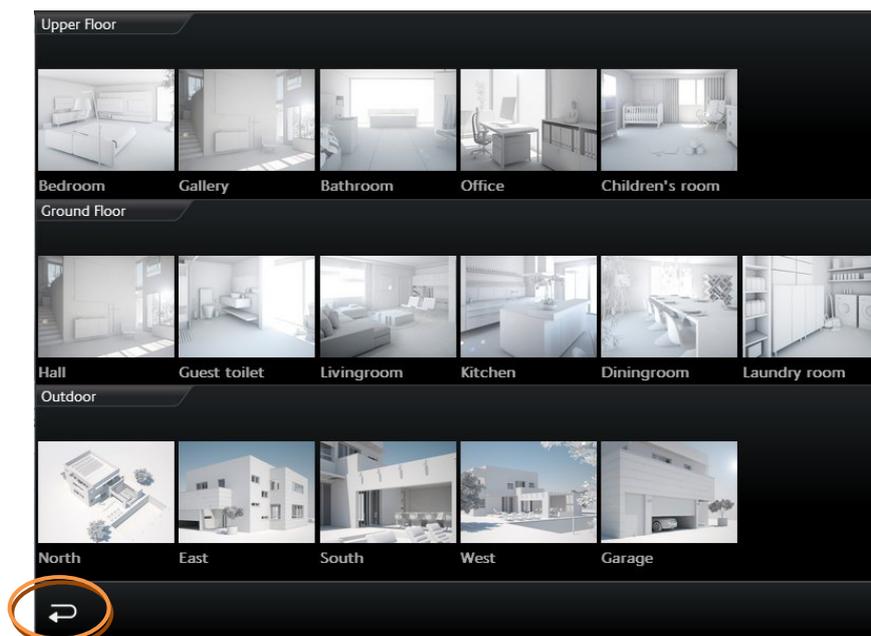


Figure 6 View of Quick Navigation

Please note: Quick Navigation can be disabled completely when necessary

2.3 INSTANT CONTROL PANEL [ICP]

Every room has an *Instant Control Panel* (shortened ICP), which always will be located on the right side. In the first place of *Instant Control Panel*, the name of the room appears. The position of *Instant Control Panel* can't be changed (see figure 7).

Instant Control Panel provides space for max. 8 elements of visualization (the elements have a height from 1 to 8 units)

If there is not enough space in the *Instant Control panel*:

If for visualization elements of the room more than 8 height units will be required, the elements, which doesn't fit into the *Instant control Panel*, will be displayed in the *Extended Control Panel* (see next chapter).

It automatically appears a "more" – button below the *Instant Control Panel*, by which the *Extended Control panel* can be activated. (see figure 9)

Instant Control Panel and favourite function:

Instant Control Panel has a particular function, which allows to arrange elements in order of their importance.

This means, that the most often used elements in one room can be displayed in the room view and therefore they could be operated directly.

The favourite function controls, how often the user will utilize particular elements and so it sorts the order of the elements on this basis in *Instant Control Panel*. This means in effect for example, that if in winter time Christmas illumination in the garden will be controlled often, this element will also be displayed in *Instant Control Panel*.

No configuration is necessary. Solely these elements have to be marked, which should be observed as favourite elements. This will be described more precisely in chapter "elements."

To position visualization elements manually in *Instant Control Panel*

As desired, even so elements of the room can be positioned manually. Therefore the favourite function will be disabled and a place in the order in *Instant Control Panel* will be given to the element.



Figure 7 Instant Control Panel (seen on the right side)



2.4 EXTENDED CONTROL PANEL [ECP]

All elements, which are used in a room, will be displayed in the *Extended Control Panel* (shortened ECP). So all elements of the *Instant Control Panel*, too. The creation takes place automatically.

Extended Control Panel:

- In this view 4 columns are displayed always at least.
- Every column has 8 height units.
- If 4 columns doesn't be enough, a page can be added when necessary.
- By column break, elements can be arranged in the columns thematically.

Opening and closing of Extended Control Panel:

Extended Control Panel will be opened by the button "more...". This button will be displayed only on demand. By the exit-symbol (arrow at lower left, see figure 9) this view can be closed.

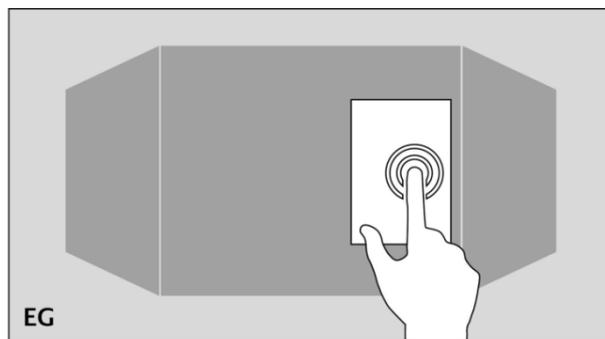


Figure 8 Opening of Extended Control Panel. Click on "more..."

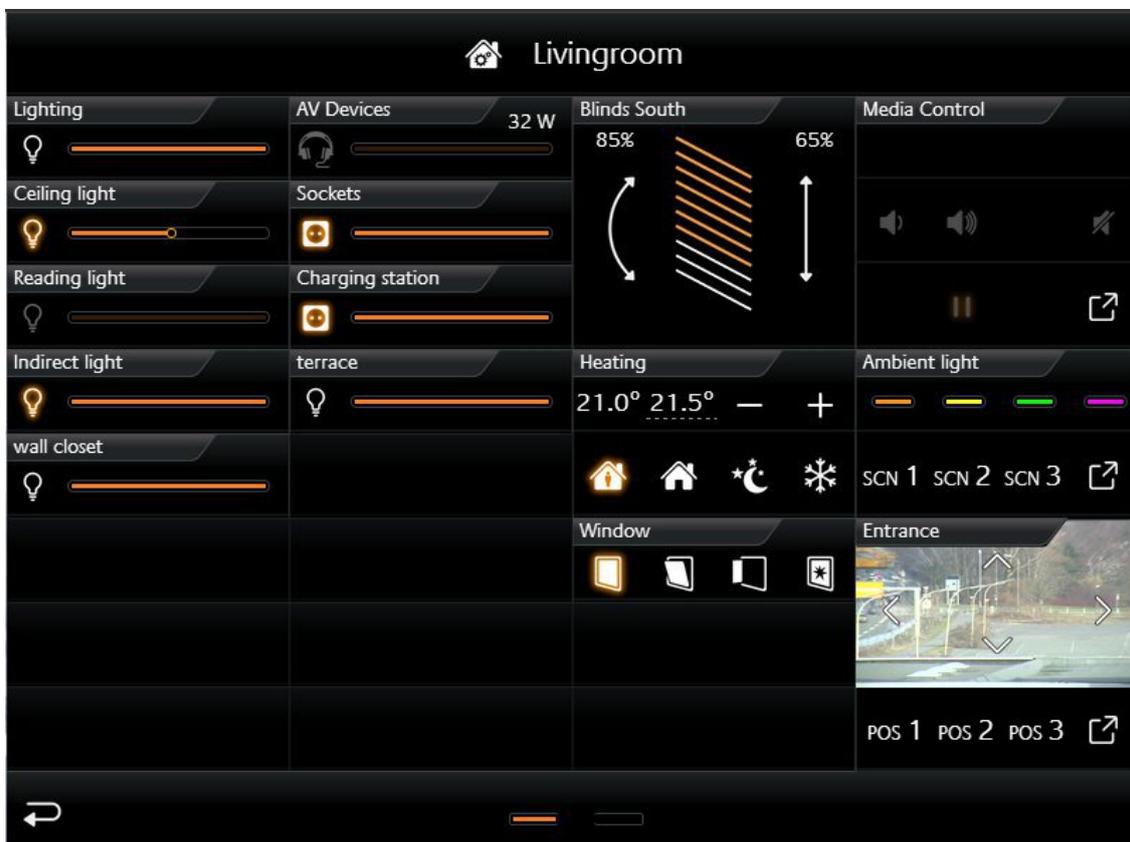


Figure 9 Extended Control Panel

2.5 EXTENDED ELEMENT VIEW [EEV]

Extended Element View (shortened EEV) offers another view of elements, in which more information (as cover, diagram, large pictures of cameras, ...) can be outlined.

Extended Element View has got 5 elements (State firmware 3.2.0)

- RGB Control
- Camera
- Multimedia
- Weather (Internet)
- Values / diagrams

In visualization, the access to *Extended Element view* is illustrated by a rectangle, from which one arrow points upwards to the right. It is located inside the element on the bottom right (see figure 10).

Example:

We will take the element “internet weather”. For the element “internet weather”, only a few weather data can be shown in view *Extended Control Panel* (see figure 10).

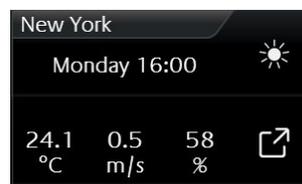


Figure 10 Example Internet Weather

A click on the symbol on the bottom right will open the extended view (*Extended Element View*). This extended view of internet weather will be shown in figure 11.



Figure 11 Example „Internet Weather“ in *Extended Element View*

If in a room several similar elements will be inserted with extended view

In our example, two internet weather elements have been inserted in the kitchen. The first shows the local weather (Dortmund) and the other displays the weather of New York. CubeVision *Extended Element View* integrates both in a list on the left side (see figure 11). In this way, the user can switch between both elements back and forth.



3 EDITOR

CubeVision visualization element has got its own editor (hereinafter known as CubeVision element) and will be opened by the Icon  beside “selection dialogue” (see figure 12 orange circle). You can see CubeVision element editor in figure 13.

CubeVision element is a kind of container, to which it will be allocated a „building“. Figure 12 shows CubeVision element in a visualization page und on the right side its related configuration window.

If a building, resp. the structure of a building was applied, in the pull-down menu (Select building) it will be listed and in this way allocated to CubeVision element for visualization.

Several buildings can be applied in CubeVision editor, but only one building can be assigned to CubeVision element. We recommend to use only one CubeVision element for every visualization project. The number of CubeVision elements for every visualization project doesn't depend on the eibPort, but on the internal memory size and the graphics performance of the visualization client.

Hint:

Please always use only one CubeVision element for every single visualization project and page.

CubeVision element doesn't be displayed in editor, when the Live Modus is activated.

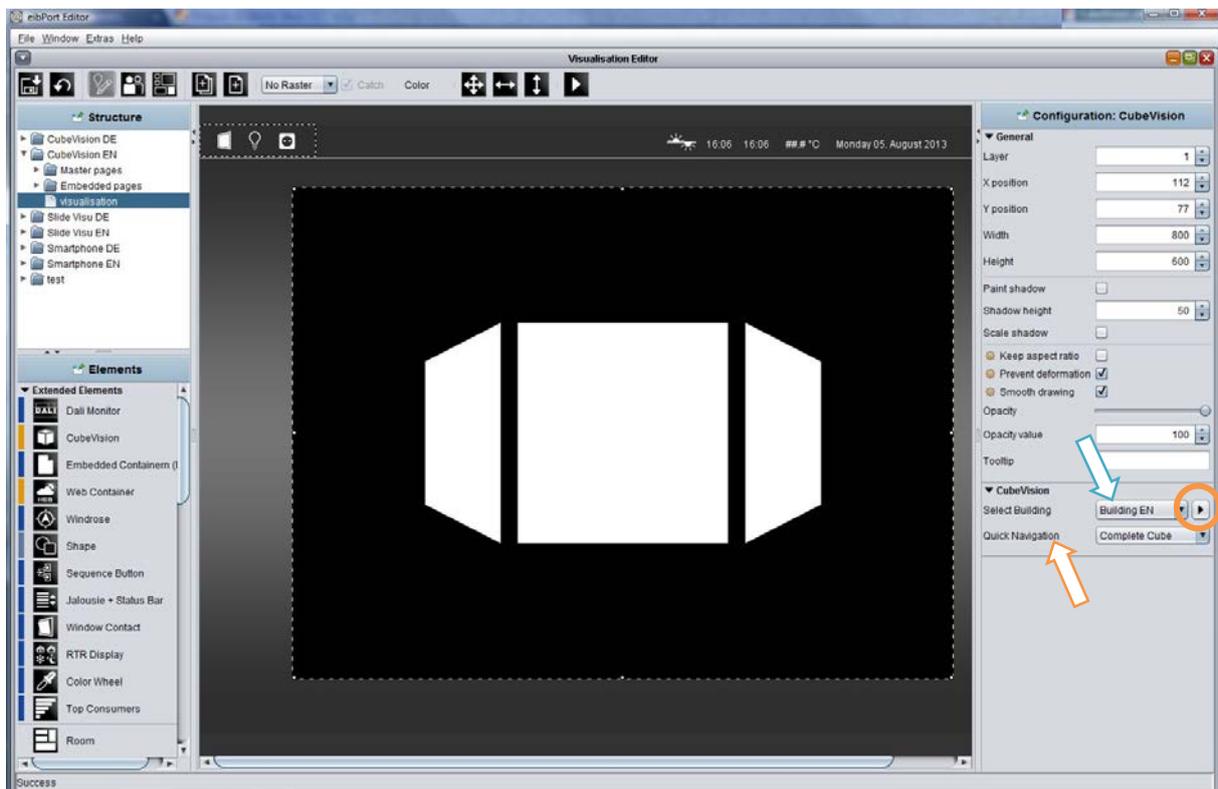


Figure 12 eibPort visualization editor with CubeVision element

3.1 STRUCTURE OF CUBEVISION EDITOR

CubeVision Editor is divided in two areas (see figure 13). The left side shows the topology of the building. The topology is similar to a directory structure, as you can see in figure 13.

As „building“, we describe a complete structure, which consists of floors (levels), rooms and elements. This structure will be described in form of a directory tree. This means that a directory depicts a level and a file presents a room. The elements (like switch, dimmer, jalousie, RTR, ...) will be added to the room in the form of a list.

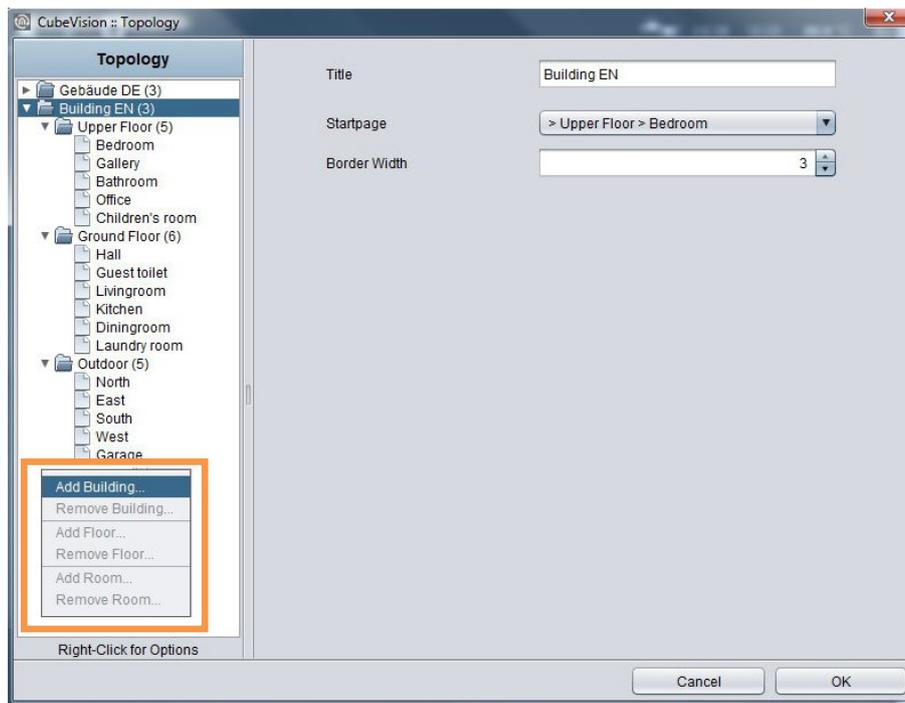


Figure 13 CubeVision editor

The right half is reserved for configuration. That can be the configuration of a building, of a level, of a room and of operating elements. To call up respective configuration of these components, it would be enough to select them simply. Depending on selected component, in configuration window corresponding options will be displayed.



3.2 BUILDING, LEVEL AND ROOMS

A little bit about topology of the buildings (see figure 13). The first directory represents a building; it stands for the “root directory” of the building structure. In other words: “here is the beginning of the building”. One directory level lower, below of the buildings, the building levels are placed. They present the floors of a building. Below the last directory level, the rooms can be found.

In figure 13, the topology of a complete building is laid out already. The name of the first directory “home cube” represents the building`s name and this name will be displayed for selection in the pull down menu of the visualization editor. Three levels exist in the building. They carry the names “Upper Floor”, “Ground Floor” and “Outdoor”. At the end, below the levels, the rooms will be listed.

Buildings, level and rooms will be added or erased by a popup menu in the topology window. The popup menu can be opened by a right click. In figure 13, an orange box encircles the popup menu.

3.2.1 BUILDING

By popup menu „Insert a building... a new building will be created. An input window appears, in which the building`s name can be entered. Later on, this name will be displayed into a list in the selection dialogue of visualization editor in the CubeVision element.

After appending the building, the right side of the configuration window shows corresponding options, as shown in figure 14. These are:

The building`s name, which already has been entered before in “Insert a building”. This name can be altered in this field afterwards.

Front page. This option confirms, which window will be displayed, when CubeVision starts. In the pull down menu, the entries will be shown in double figures. The rooms will be displayed after following scheme: > [level] > [room].

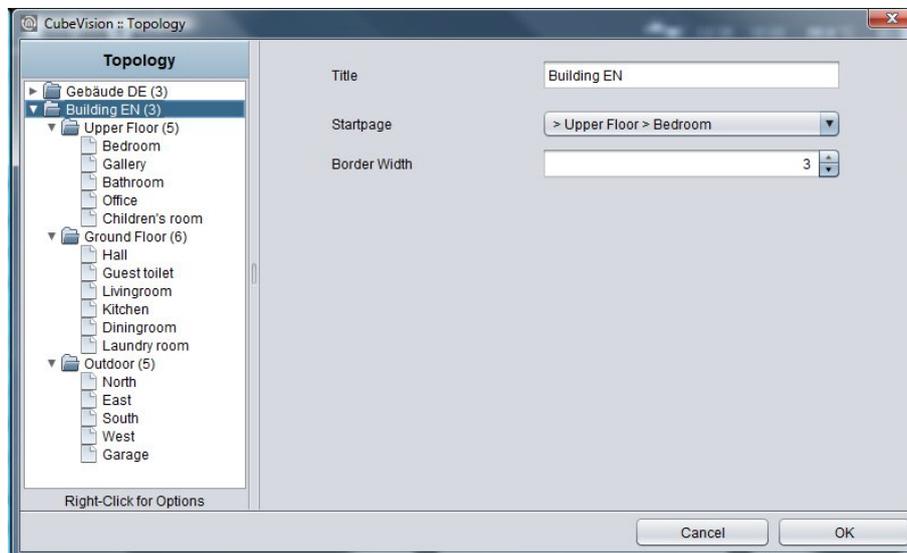


Figure 14 configuration window for buildings

In case that the building will not be required anymore, it can be eliminated by the popup menu`s function „Delete building“. A right click has to be executed on the entry of the building, which should be erased.

3.2.2 LEVEL

For appending levels to buildings, you have to use also the pop-up menu with its function „Append levels“

The pop-up menu has to be opened over the building, to add a level to this building. Like the procedure in creating a new building, a window will open here, in which the name of the level has to be entered.

If the level is appended, the right side of the configuration window shows the attendant options (figure 15)

The level`s name. The name of the level was entered already by the creating of the level. But it can be altered in this field afterwards.

The Name of levels will be used in *Quick Navigation*. Every line of pictures in this view will be indicated with these names (see also figure 6).

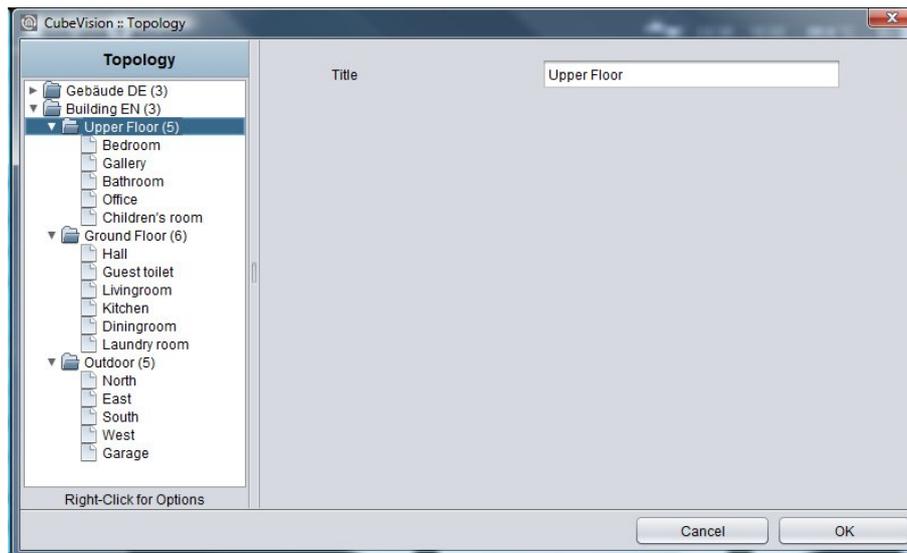


Figure 15 configuration window for levels

If a level should be erased, this will happen by the pop-up menu`s function „Delete a level“. A right click has to be executed on the level`s entry, which should be deleted.



3.2.3 ROOM

By the same procedure as in buildings and levels, rooms will be added. An input window opens with the function “append a room”, in which the room`s name has to be filled in. The configuration window at the right side displays respective options. Possible options and configurations are the following (see figure 16 to this):

- The room`s name. The name of a room was entered by its creating already, but in this field it can be changed afterwards.
- The name of levels will be used also in Quick Navigation and in ICP. Every picture (background image), which was assigned to the room, will be indicated with these names.
- Background image. To every room a background image will be assigned. It fills out a complete face of the cube. (which illustrates a room) The image can be elected in the pull down menu or by a selection dialogue. This image will also be displayed in Quick Navigation, combined with its name.
- List of operating elements. Below these two fields, a list of operating elements is situated. Three switches belong to this list.
 - Minimize all. Folding in all operating elements, which are located in the list.
 - Maximize all. Folding out all operating elements of the list.
 Operating elements can be fold out or fold in, for getting a better overview or for controlling all group addresses. The elements could also be fold out or fold in separately. See more in chapter 3.3.
 - Append. If an operating element will be appended, a dialogue with a list of 13 different operating elements opens and at the same time, a text field for the identifier, too. The configuration of operating elements is described detailed in chapter 4.2.

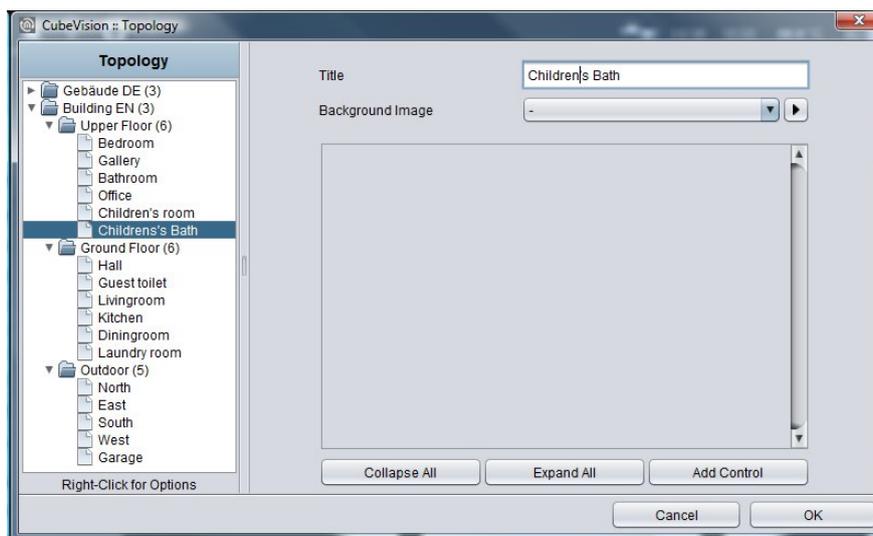


Figure 16 configuration window for rooms

If a room should be erased, this will happen by the pop-up menu`s function „Delete a room“. The right click has to be executed on the room`s entry, which should be deleted

3.2.4 NAVIGATION UND QUICK NAVIGATION ...?

CubeVision element cares for the complete navigation and the Quick Navigation. They will be created automatically. No configuration or testing is necessary.

Only a little still should be configured. It is the option (see figure 12, orange arrow), when Quick Navigation will be opened or if it will be disabled completely. It is available:

No Quick Navigation. Quick Navigation will not be created for this CubeVision element.

Complete area. Quick Navigation will open by a click on the background image Downright. In room view, a little arrow will be displayed in the bottom right corner. Quick navigation opens only by a click on this arrow.

3.3 OPERATING ELEMENTS

If an operating element should be appended, several possibilities are still available. So the operating elements can be relocated in list or be deleted. Also it will be convenient for proofing the sequence of the elements, to blank out the configuration of operating elements. In this case, only the headline with name und control element will be shown.

Figure 17 exposes the operating elements of the child`s room.

Header operating element. All operating elements are folded in, so that you can only see the header of this element. On the left side, the name of operation element will be shown. On the right side, three buttons are located. Two of them will move this operating element up and down in the list. The third button will delete this element

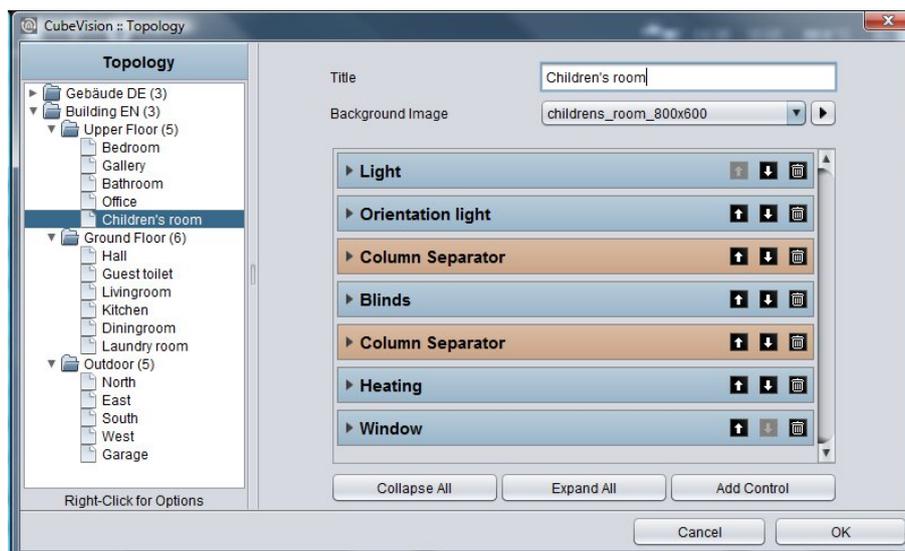


Figure 17 Operating elements



3.4 TIPPS

3.4.1 PLACING OF ELEMENTS

Visualization elements can be pulled to visualization by drag & drop with the mouse. There to CubeVision element has to be positioned centrally by hand on the visualization page. But if a CubeVision element will be added to visualization page by a click in the list of the visualization elements (in visualization editor), it automatically will be positioned centrally on visualization page by the editor. If necessary, only the vertical position has to be adjusted. This adjustment only will be required, if in visualization page a part of the height will be designated for other elements. The height of this area has to be subtracted from the total height, to define the vertical position for the CubeVision element. See figure 12; at this visualization page a “status bar” was placed at the top edge, containing diverse information and visualization elements.

Please note: In order that the 3D effect will be shown to its best advantage, enough space should be included around the CubeVision element. This is why if the visualization page will not be large enough, three dimensional effect will be lost by moving the cube. While moving the cube, the size of the front face changes perspectively and cannot be seen completely.

If a level contains more than 4 rooms, rooms will be displayed right and left from the exposed room. Example: A level with 5 rooms constitutes a five-sided figure in cross section (6 rooms a six-sided figure et cetera) and therefore these rooms are seen left and right from the displayed room.

3.4.2 ELEMENT SIZE

To use CubeVision element in a visualization, a visualization page with a recommended resolution of 1024 x 768 pixels is necessary. The CubeVision element will be inserted in visualization by the editor in a size of 800 x 600 pixels. The size of CubeVision element can be enhanced. That makes sense, in case the visualization client is about a display of 16:9 and 16:10. Placed optimally, Cube Vision element is situated in horizontal and vertical centre of visualization area.

Please note: In case if CubeVision element will be created for a wide screen (also 16:9 or 16:10), Cube Vision element uses the additional space for ECP. That means, that the four columns will not be spread in a wide range, but they will be displayed in so many columns as possible.

3.4.3 BACKGROUND IMAGE

Recommended resolution for the background image of a room is the same size as the size of the CubeVision element. Therefore visualization clients don't have to be rendered, when visualization will be activated

3.4.4 ... STORING?

A small hint. After the visualization project was stored by the CubeVision element in visualization editor, it will be sufficient to close CubeVision editor with “ok” for storing modifications. So the modifications will be saved in eibPort!

So it is useful, to open parallel the visualization in a browser, for checking it directly while working with editor. If a new level, room or an operating element will be added, modifications are confirmed by “ok”. To show modifications in the browser, it is only necessary having a keystroke on “F5” (refreshing) to display them.

4 CUBEVISION ELEMENTS

For CubeVision (Visualization-) element, 13 complete new (operating-) elements with new functions are created. The size of these elements is stated in height units, because elements will be placed in always equal broad columns. These columns are always 8 height units high. CubeVision elements have a height between 1 and 8 height units.

Beside this “column-view”, some elements own a second “expanded-View”. In this view, more functions and information will be displayed. “Expanded View” occupies always a complete page.

„Column-view“ will be shown in ICP and ECP and „expanded-view“ in EEV. These shortcuts have been explained in chapter 2.

4.1 STANDARD OPTIONS FOR ALL ELEMENTS

Following three options exist equally in all 13 elements und will be treated at this place. Here the options:

- **Labelling.** This name will be displayed in the title bar of the element (CubeVision).
- **Favourite setting. By this menu item it is defined, whether this element will be quoted in ICP as a favourite or if it will be displayed at all.**
 - *Automatically.*
Adding this element in favourite setting. This means, that CubeVision defines itself the position of one element in ICP (favourite ranking) and if necessary modifies its position. The more often the element will be used, the higher it will be placed in list.
Never showing as a favourite.
By this selection element will not be displayed in ICP, but also only in ECP.
 - *Always showing as a favourite.*
This choice causes the deactivation of favourite ranking for this element and that the position could be defined manually. The element always will be displayed in ICP.
- **Favourite-Ranking**
This option only will be enabled, if favourite setting „always showing as a favourite“ is selected. The option offers the choice to select which strong position the element will take place in ICP. A position value from 1 to 8 can be assigned
- **Can be operated**
This parameter defines, whether the element can be operated or if it should only serve as an indicating element. In this case, this element sends out no telegram, but it will receive telegrams only.

Please note: Favourite list is 8 height units high at a max. Depending on the space, which every single element needs, not always 8 elements will fit in ICP (according to the element, 1 to 8 height units will be necessary)



4.2 ELEMENTS

Following the configuration and the function of all 13 elements are explained. Here the list:

Column break

- Switch/Dimmer
- Button
- Temperature/RTR
- Jalousie
- Window contact
- RGB controlling
- Camera
- Multimedia
- Weather (local KNX)
- Weather (Internet)
- Values / Diagrams
- Group switches / Scenes

4.2.1 COLUMN BREAK

Cube Vision elements automatically will be inserted in ECP by the editor. So above all, the user only has a bearing on the sequence of elements.

By the help of column break, the user has the possibility to interfere additionally in the distribution of elements in the single column in ECP.

This element possesses no configuration and cannot be seen in visualization.

In following example (figure 19), a column break element was set between the elements „wall cabinet“ and „AV consumer“. Thus the elements „AV consumer“, „socket“ and „charge station“ will be moved in the second place. (Although they would fit the first column)



Figure 18 Column element of CubeVision configuration window

It also will be possible to insert several columns breaks consecutively for putting elements to the next ECP page.

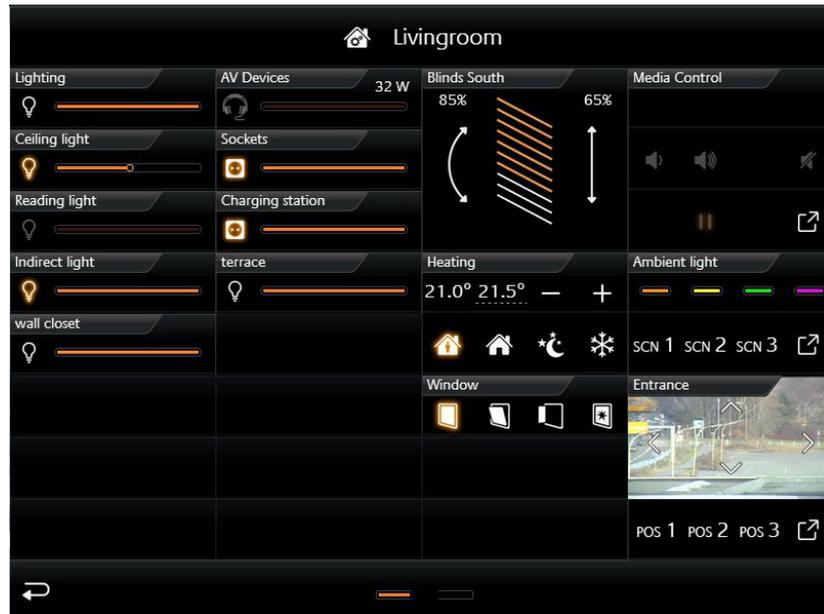


Figure 19 Extended Control Panel [ECP]



4.2.2 SWITCH/DIMMER

- Option: Operability? Yes
- Extended View: No
- Height units: 1



Figure 20 Element Switch/Dimmer

The element switch/dimmer disposes of a switch and a dimming function (see figure 20). The dimming function offers the feature sending telegrams to the bus already by „sliding“, to watch the change of lightness for example.

For the element, 34 different symbols are available for selection. For giving a clear hint to the function, a combination with the symbol and a short identifier exists. Furthermore element offers a value object (top right in element), to display additional information. This is useful for example to keep one eye always on the actual dimming value, operating hours or power consumption of this participant.

Following configuration fields this element possesses (Identifier see figure 21):

1. **Icons.** These 34 symbols are located on the left side and can display one active or inactive state (see figure 20, left).
2. **Address switching (EIS1).** Therewith the group address is meant, on which the EIS1 telegram will be sent. By activating, the digit “1” and by breaking, the digit “0” will be transmitted.
3. **Feedback switching (EIS1).** To the function “switching”, a separate feedback address can be applied. Then the symbol and the bar are showing the registered state.
4. **Address Dimming (EIS6).** The group address of the function “dimming” supports absolute dimming (data type EIS6, value range 0-255). To modify the dimming value, bar (slider) will be used, thereto you can slide on the bar with mouse or finger, from left to right. The left side of the bar represents the dimming value „0“ and the right side the value „255“. The orange circle indicates a) that it is about a dimmer and b) the position of the slider (actual state of dimming).
5. **Feedback Dimming (EIS6).** This is the separate feedback object for the dimming function. Received state of dimming will be displayed proportionally. In case a group address was specified, value “Address dimming” has no influence to the bar graph (see also TIPPS, item 4).
6. **Dimming Interval (T/s).** Enables periodic sending with up to 4 telegrams per second. This means, while the dimming state is altering, telegrams will be sent just in time. This function can be disabled to reduce the bus load. In this case, dimming level will be sent only then, when the slide will be released.
7. **Value display data type.** For value display, data type of the group address will be selected at this point. For selection are available EIS5, EIS6 and EIS9.
8. **Value display address.** The value of a group address is shown in the value display (see for example figure 20 top right). This example displays the actual dimming value as a value object).
9. **Value display format.** Here the display format will be defined, which includes the unit, the pre- or post-decimal place of the value object (see TIPPS item 6).

TIPPS:

- The element of a dimmer or a switch can be distinguished by an orange circle in the bar. If a circle is seen there, it is about a dimming element and if the circle is absent in the bar, it is about a pure switch.
- In a switching element, the complete area of the element reacts as a switching button.
- A combined switching and dimming element will be switched by a short typing on the complete surface. Dimming takes place by moving the circle of the bar, starting with the actual position. A longer hitting to an arbitrary position in the bar causes “jumping” at this dimming value. As long as the bar doesn’t be released, dimming value can be changed.
- If to the feedback objects no group addresses were assigned, so the values of switching and dimming group addresses will be displayed in a feedback state.
- While dimming, the value object will be blinded out and the actual dimming value appears. After dimming, dimming value will be blinded out and the value object comes out again.

- Formatting of the value display. The digit „0“ implies a fixed digit and will be displayed always. „#“ is one optional digit (as it will usually use as a post-decimal digit) and it will be displayed only if it is necessary. The „.“ stands for a decimal separator. After that formatting, you still can append the unit.
For example: 00.0 watt will always be shown with two digits before the decimal separator and one digit after it. The letters “watt” will appear after the displayed value and will serve as the value`s unit.

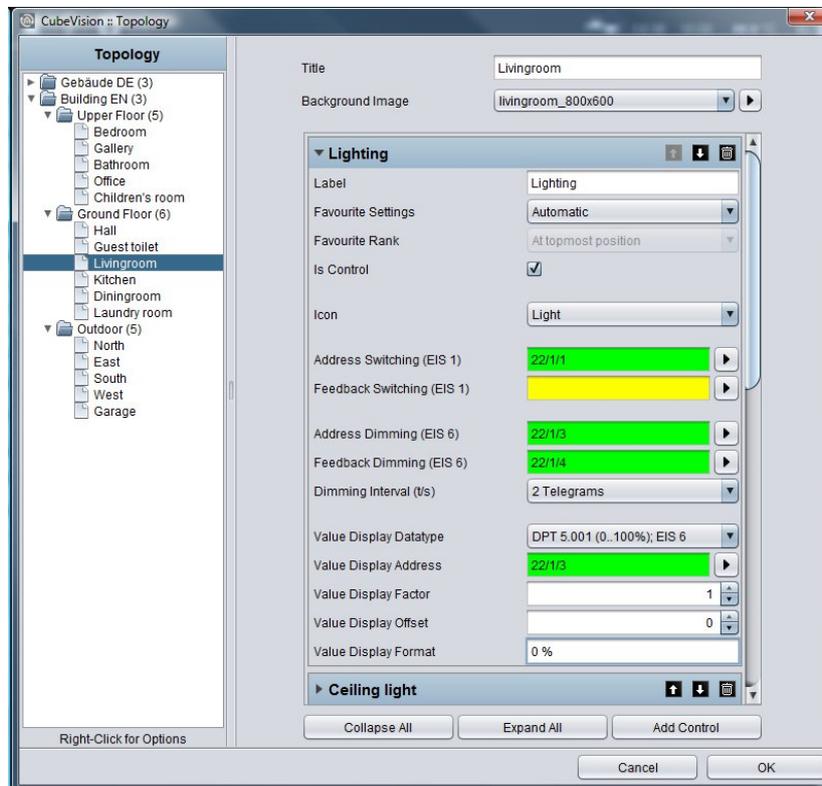


Figure 21 configuration window of switching/dimming



4.2.3 PUSHBUTTON

- Option: Operability? Yes
- Extended View: No
- Height digits: 1

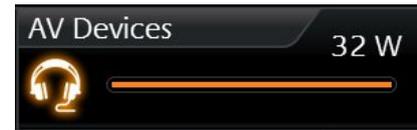


Figure 22 Element pushbutton

This element is a pure switching element, without a dimming function. But on the other hand, you can select the function of the pushbutton. At choice there are switch, pushbutton and a value sending function. Telegram values and data types are selectable freely. The options feedback and value object are available for the states “ON”, “OFF” and “button free selectable”. The options feedback and value object are similarly available, as in the switching and dimming element. Also for these elements different symbols are selectable, too (here they are 34)

This element has got following configuration fields (identifier see figure 23).

1. **Icons.** These 34 symbols are located on the left side and can display one active or inactive state (see figure 20, left).
2. **Data type.** For switching function, data type of the value, which has to be sent, will be selected at this place. At choice there are EIS1 (0,1) and EIS14 (0-255).
3. **Address switching (EIS1 or EIS14).** Group address, on which the switching telegram will be sent.
4. **Feedback switching (EIS1 or EIS14).** A separate feedback, which displays the actual state of the element. The symbol and the bar show the confirmed state.
5. **Function.** Hereby it is determined what will happen, if the pushbutton is actuated. Here the options:
 - a. **Changing (Toggeln).** Every push of a button changes the state between ON and OFF and will hold it. Only a telegram will be sent. Exception, values can be assigned freely for every state (also not only “0” or “1” are possible).
 - b. **Pushbutton.** Actuating this button, two telegrams will be sent. The first telegram by pushing the button (for example ON) and the second by releasing the button (for example OFF). Here also values for ON and OFF can be assigned and inverted freely.
 - c. **Value Sender.** A freely selectable value can be chosen, which has to be sent by actuating the pushbutton.
6. **Value „ON“/mouse-pushing and value „OFF“/mouse-releasing.** These two fields define values, which will be sent by ON or OFF. They are freely selectable.
7. **Value display of data type.** For the value display, data type of the value will be displayed and selected here. For selection are available EIS5, EIS6 and EIS9.
8. **Value display of address.** Value of this group address is shown in the value display (see for example figure 22 on the right. This element displays the actual power). Data type of this group address will be selected in field *value display data type*.
9. **Value display of format.** Defines the display format. In other words, the unit, the pre- and the post- decimal places can be specified.
 Formatting of value display. The digit “o” implies a fixed digit and will be displayed always. “#” is one optional digit (as it will usually use as a post-decimal digit) and it will be displayed only if it is necessary. The “.” stands for a decimal separator. After that formatting, you still can append the unit. For example: “00.0 watt” will always be shown with two digits before the decimal separator und one digit after it. The letters “watt” will appear after the displayed value and will serve as the value`s unit.

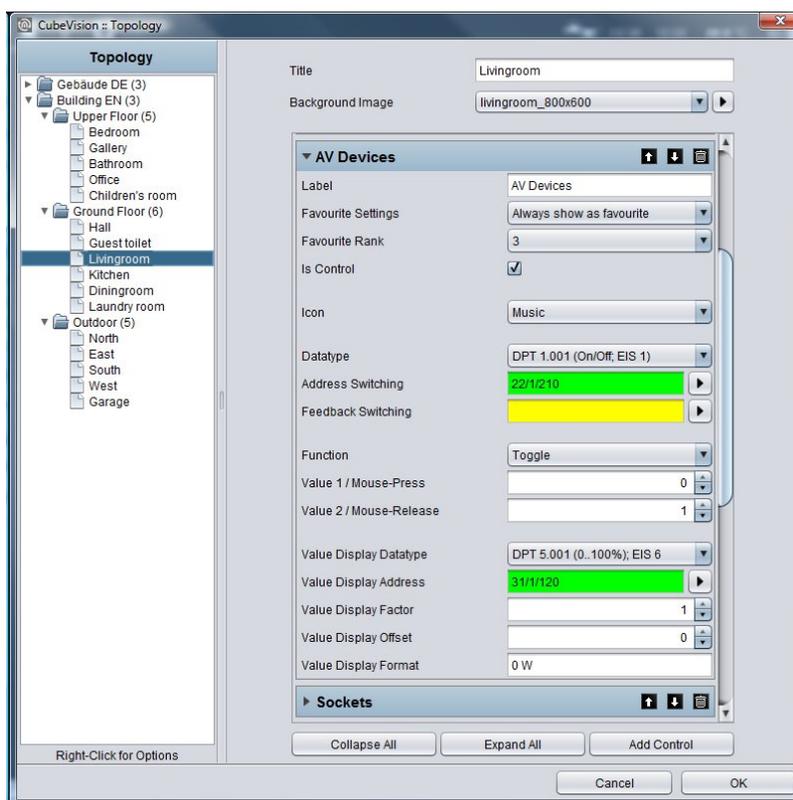


Figure 23 configuration window of pushbutton



4.2.4 TEMPERATURE/RTR

- Option: Operability? Yes
- Extended view: No
- Height digits: 1 or 2

Temperature/RTR element undertakes the control of the heating in CubeVision element. So this element offers the opportunity to display the actual value of temperature, the operating mode and to set the nominal temperature value or the mode of operation. The two temperature values, which will be shown in the first line (figure 24 and figure 26), display on the left side the actual temperature and on the right side a nominal value.

Nominal value can be adjusted by a PLUS and MINUS symbol. If this element will be configured as a substation, the base nominal value will be modified by PLUS and MINUS symbols. In addition, the actual temperature value indicates also, if just heating or cooling is working.

Both states differ from each other by colour orange and blue. Blue means cooling and orange signifies heating. If temperature will be displayed in white, neither of both modes is enabled or the display was not configured before.

Another feature is the control of operation modes. These are *comfort*, *standby*, *night reduction* and *frost protection*. Switching can take place optionally by three group addresses or by one group address with four different values. For this element three different views are for selection:

- Temperature und RTR display (Figure 24)
- Temperature Display (Figure 26) and
- RTR Display (Figure 25)

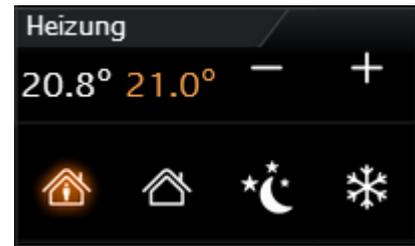


Figure 24 Element RTR/Temperatur

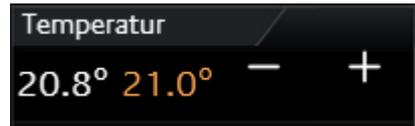


Figure 25 Element Temperatur



Figure 26 Element RTR

This element has got following configuration fields (identifier see figure 27).

1. **Type.** This choice defines the element's view. For selection are *temperature and RTR*, *only temperature* and *only RTR* (only the symbols of operation modes).
2. **Address of actual temperature (EIS5).** Group address of a temperature sensor for actual temperature.
3. **Address nominal temperature (EIS5).** Group address for the actual temperature. If the element isn't configured as a substation, adjusted nominal temperature will be displayed on this group address. In this case, the modified nominal temperature (with PLUS and MINUS) will also be sent on this address. But if the element is configured as a substation, only the NOMINAL temperature will be shown.
4. **Is a substation.** This function defines, whether the element will work as a substation. If this function is enabled, the field *base-nominal-value shift* will be activated. By PLUS and MINUS symbols, the *base nominal value shift* will be modified, which afterwards refreshes the *nominal temperature display*.
5. **Base nominal value shift (EIS14s).** This group address modifies the base nominal value. The Value range extends from -128 to +128. If the value has to be changed, RTR calculates the new nominal value and will send it to the address of nominal temperature.
6. **Max. basis set point adjustment (+/-).** This value defines the maximal negative resp. positive basis set point adjustment. In case you fill in here a value of +/-6 for example and the configured step range is 0.5°C, so a possible set point adjustment from up to +/-3°C is the result of.
7. **Address Heating Display (EIS14u).** In order that the actual temperature is able to display the state of heating (value is coloured in orange), the group address of RTR will be filled in here, on which RTR will sent, when RTR switches to the state of heating.
8. **Value heating active (0-255).** At this place, the value will be defined, which will be sent by the group address heating display, if this state was activated. Possible values are 0-255.

9. **Address Cooling Display (EIS14u).** In order that the actual temperature is able to display the state of cooling (value is coloured in blue), the group address of RTR will be filled in here, on which RTR will send, if RTR switches to this state of cooling.
10. **Value cooling active (0-255).** At this place, the value will be defined, which will be sent by the group address cooling display, if this state was activated. Possible values are 0-255.
11. **Data type operation mode (EIS1 und EIS14u).** Das RTR/Temperature element offers the possibility to control operation mode in two different ways:
 - a. *Over EIS1.* In this setting, the configuration window displays three (EIS1) group addresses, each for **comfort/standby, night reduction and frost protection**. If also a “1” will be received on the group address Comfort/standby, the element will highlight the symbol *comfort*, in case of a “0”, the symbol *standby* will shown as active. Operation modes night reduction and frost protection will be displayed each other as active by receiving a “1”. Only one symbol can be highlighted or displayed as active.
 - b. *Over EIS14u.* At this choice, the configuration window displays a field for the group address **address mode input** and in addition four lines, in which the values of the operation modes *comfort, standby, night reduction* and *frost protection* will be defined. The value range of these fields extends from 0 to 255. In figure 27, switching of operation mode by EIS14u is configured. If the user switches to the mode comfort for example, the element will sent the value “1” to the group address 22/3/3. The other way round, if the element receives value “2” on the group address, the RTR display will switch to standby.

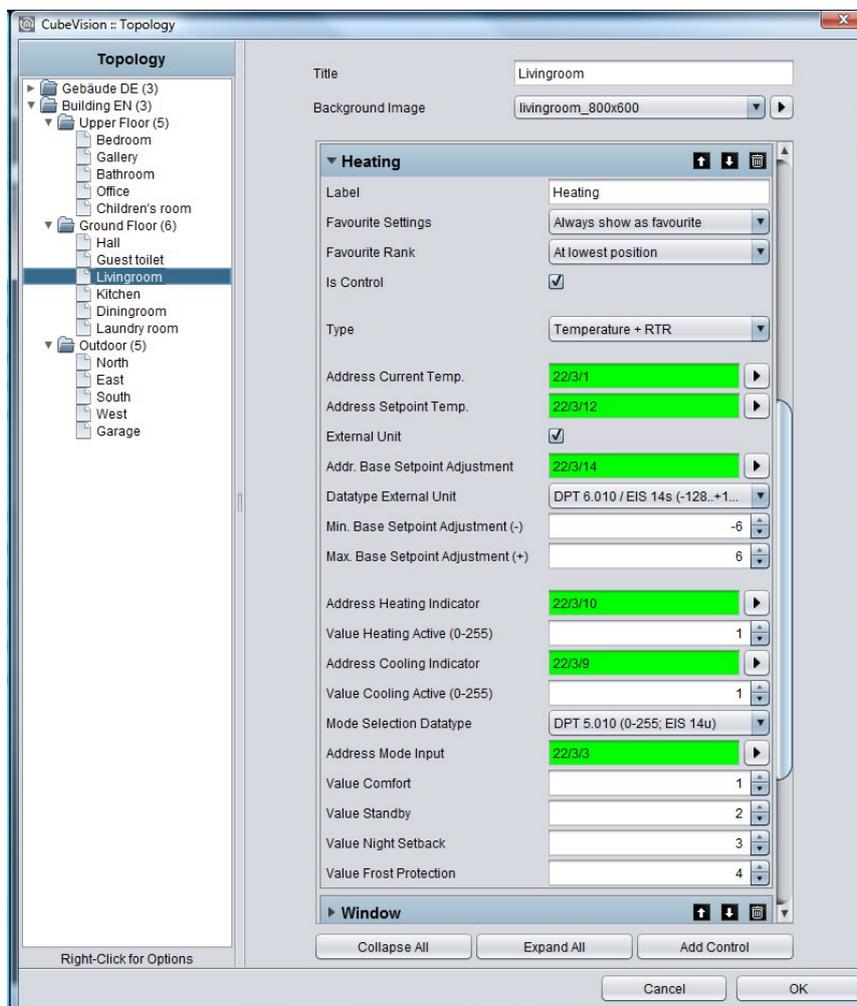


Figure 27 configuration window of RTR/temperature



4.2.5 JALOUSIE

- Option: Operability? Yes
- Extended view: NO
- Height units: 3

Shadowing will be controlled by the element jalousie. The element shows graphically the vertical position und the angel of the jalousie.

In addition to the graphical display, positions will be shown as values. These values are displayed in percentage terms for position (right value) and angel (left value) of the jalousie. In figure 28 and 29 two types of jalousie element are illustrated. The control of these elements takes place in two ways:

- Standard (for push-button; Figure 29)
- Touch & Slide (for sliding; Figure 28)

As its name implies, you can use in type „standard“ a button and in type „touch & slide“ a slider. Figure 28 shows how to control the element by “touch & slide” and figure 29 displays the controlling of “standard”

In mode „touch & slide“, you will simply position your finger on the left side to the angel control or on the right side to the position of jalousie and then you move the finger in the desired direction. While moving the finger, you get an optical feedback over the angel or the position of the jalousie. If the desired position will be reached, jalousie will approach to it, just as you will release the element.

Three different modes of shadowing can be controlled:

- Jalousie. Classical jalousie with lamellae, which can be inclined in both directions.
- Roller blind. It can only be moved high and low.
- External blind (venetian blind). Similar to the classical jalousie, but with the different, that the lamellae can be inclined in only in one direction out of its horizontal position.

Depending on selected types of jalousie, element displays only these controls, which are required actually. So it will be displayed no button or no arrow for adjustment of an angel in the element type roller blind. Also this element possesses feedback objects. In this element they are position and angel (which can be enabled or disabled according to the type of shadowing). Also one input for wind alarm is available of course.

This element has got following configuration fields (identifier see figure 30):

1. **Display.** This choice defines the type of control unit for the jalousie element. You can choose between a typical control and an intuitive gesture control (touch and slide). While a typical control displays buttons, the touch & slide control depicts two arrows. The different to the typical control is the fact, that the desired position can be defined as well as by tapping directly or by sliding with the finger from an arbitrary position to the desired position. Furthermore positive is the effect, that the position, which will be approached after releasing, at the same time will be displayed in the element, also a kind of preview.
2. **Type.** This element optionally can be predefined to the three different types of jalousie, which were explained detailed in previous chapter.
3. **Angel area.** This feature was implemented to fit the angel area according to the type of jalousie. This is necessary, so that the angel can be displayed correctly in visualization. Depending on the manufacturer, the angel will be specified in 0-100% from left-hand or right-



Figure 28 Element jalousie touch & slide



Figure 29 Element jalousie standard

- hand hinge of lamellae. Also the alternative (-100% to +100%) exists, in which the value 0% describes the horizontal lamellae position.
4. **Direction inverting.** For the reason, that the direction of the jalousie will be interpreted differently again and again, movement direction of the jalousie can be defined by this option. With this option can be selected, whether jalousie will be run up by “1” or “0”.
 5. **Address move (EIS7).** This group address controls the up and down of the jalousie.
 6. **Address stop/step (EIS7).** This group address sends the order for stop or step.
 7. **Address position (EIS6).** One desired position of the jalousie can also be approached directly by an entered value (0-255). If the user touches the middle of the right arrow (touch & slide type) for example, to this group address the value 127 will be sent, and thereby the jalousie automatically moves to this value (position). If in field *feedback position* no group address was entered, jalousie element uses this value for displaying the position of the element.
 8. **Address feedback position (EIS6).** If in this field a group address is filled in, so the element doesn't show the position, which was adjusted by address position, but it will display the actual position, which this group address will receive.
 9. **Address feedback angel (EIS6).** If in this field a group address is entered, the element doesn't show the angel, which was sent over *address angel*, but the value of the angel, which this group address will receive.
 10. **Address wind alarm (EIS1).** In jalousie element an optical message for wind alarm will be displayed, if this group address will receive value „1“. So the jalousie will block and the controlling of the jalousie will not be possible anymore, as far as value “1” is applied to this group address.

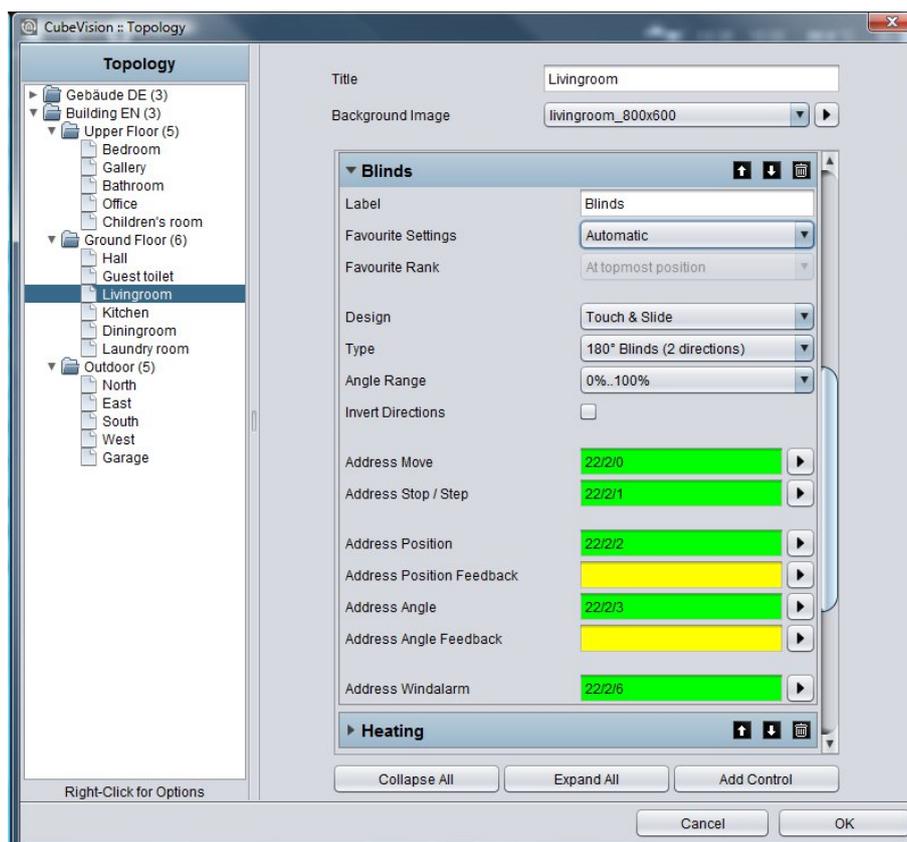


Figure 30 configuration window of jalousie



4.2.6 WINDOW CONTACT

- Option: Operability No
- Extended view: No
- Height units: 1



Figure 31 Element "window contact"

To illustrate the state of windows, element window contact is used. It shows following positions resp. states:

- Closed
- Open
- Tilted
- Glass breakage

Every position und the glass breakage have got its own symbol, which can be displayed in the element. If one position is activated, corresponding symbol will be highlighted in orange. In case no group address was applied for a position or a state, corresponding symbol will not be shown.

The position of the window can be displayed by two different data types. There are data of type EIS14 (0-255) and EIS1 (0 or 1). The different between both data types is the number of group addresses. This means, that in data type EIS 1 the position by the group address and in data type EIS14 the position by values have to be defined. Furthermore this element can announce glass breakage. Independent from the data type, this element always has its own group address.

This element has got following configuration fields (identifier see figure 32):

1. **Data type input.** You can select, which position of the window will be evaluated. The functionality of both types was explained in previous chapter.
2. **Data type EIS14.**
 - a. **Address position.** By this one group address, the window position will be received.
 - b. **Values closed/tilted/open.** These three values define, when the positions closed, tilted, and open are activated in visualization. These values can be assigned freely.
3. **Data typ1 EIS1.**
 - a. **Address tilted.** By this group address the state of the position "tilted" / "closed" will be received. In case of value „1“, the symbol of the titled and closed windows with Value "0" will be highlighted.
 - b. **„Titled“ inverted.** But if the window contact announces position „titled“ with the value „0“, this option can invert the evaluation.
 - c. **Address open.** On this group address, the received value „1“ for the position „open“ will be shown in visualization.
 - d. **„Open“ inverted.** Just as in field *titled inverted*, evaluation can be inverted here also. By the way: This type has got no group address for the window position "closed". This position will be shown, if the group addresses (open, titled) have got the value "0".
4. **Address glass breakage.** Address of glass breakage. If a glass breakage sensor exists, so an optical warning of glass breakage can be displayed by this address. Value „1“ signifies glass breakage and '0' stands for no glass damage.
5. **Glass breakage inverting.** Also here, evaluation can be inverted, so that value „0“will be interpreted as a glass breakage.

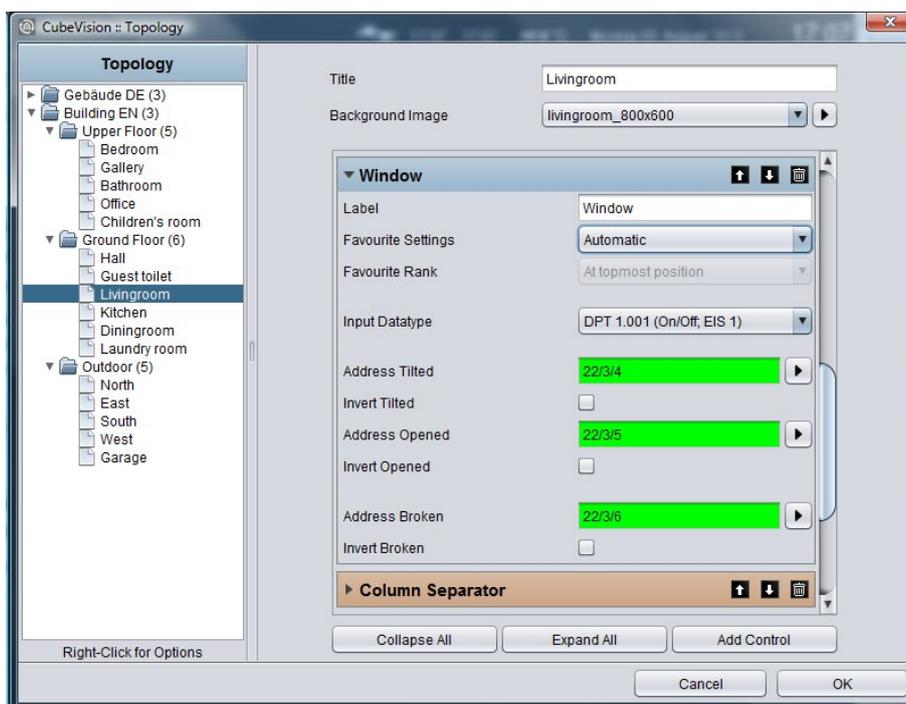


Figure 32 configuration of window contact



4.2.7 RGB CONTROL

- Option: Operability? No
- Extended View: Yes
- Height units: 2

Of course, a control of RGB lighting must not be absent in CubeVision element. The element RGB control undertakes this task. The possibilities are given to call up light scenes and predefined colours and to blend colours over visualization freely.

This element has got two views: A compact one with two height units for the *ICP*, resp. for the *ECP* and another one in *EEV*. The compact view shows 4 freely selectable colours at a max in the first line and maximal 3 buttons for scenes in the second line. The second view shows the RGB element in *EEV* with more possibilities of operation. Beside the choice of colours and light scenes, *EEV* will use also colour channels (up to four RGBW) and a colour circle. Figure 34 displays the RGB element in *EEV* view. In the right column, the slider is situated, by which the single DMX channel can be controlled.

By the way, if no group address is entered for the channel “white”, this channel will not be displayed in visualization. In the center of this view, the colour circle is located, by which colours are chosen by fingertip. Just below, 2 lines with each 4 buttons of predefined colours and light scenes are situated. In the line of the light scenes, an additional reserved button is located to stop the running light scene.

To send a colour value to a RGB lamp, different methods exist, depending on the lamp`s type. They differ either in having one group address for all colour values or in offering a separate group address for every colour value. Data types:

- 4x1byte values (one object for each R, G, B und W; EIS6; 0-255; for the most applications)
- 1x 4byte value (one object for each R, G, B und W; similar to DTP232.600 plus an extra channel for white)
- 1x 3byte value (one object for R, G und B; DPT 232.600)

In order that, the possibility exists finding out the correct control mode for nearly every RGB lamp type. Configuration of light scenes consists simply in allocation of the group addresses. If the group address for a light scene is absent, so this address will not be displayed in Cube. If one of the light scenes will be released, *eibPort* transmits to this group address “1”. By a click once more to an active/running light scene, *eibPort* sends the value “0” to this group address. In RGB control element, there is a place for 4 light scenes at a max. The lettering of the light scenes are “Scene 1” up to “scene 4” and can`t be modified.

Just right to the light scenes, the button “scene blocking” is located. This button is a light scene as well and will be reserved in case, a scene will not be desired at all and a simple stop of the light scene will not be enough. Therefore a separate light scene can be arranged, which dims down the RGB lamps as long as they are turned off or they have changed to a selected colour.

In addition to the four buttons for the light scenes, another four buttons of the favoured colours exist. For configuration of the colours, it is only necessary to select the desired colour by the colour selection dialogue.

Also there is no handling with colour values needful. CubeVision editor uses this colour out of the colour selection dialogue of visualization. The colour values come from the colour selection dialogue and the group addresses of colour values from the RGB control element.



Figure 33 Element RGB control



Figure 34 extended element view of RGB control

This element has got following configuration fields (identifier see figure 35):

1. **Output type.** Types differ from, if all colour values (red, green, blue and white) will be sent to a single group address or if every colour value should be sent with a separate group address. Thereby it is about a 1 byte data type with a value range of 0-255 resp. 0-100%. The chapter before explains these data types.
Address channel red, green, blue and white. At data type 4x1byte, configuration mask shows four fields for group addresses. These fields are labelled with the respective channel colour. In case another data type will be used, configuration mask displays accordingly only one field for a group address. These group addresses are used also in the colour circle (in *EEV*) and for the favourite colours.
2. **Scene starting #1 ... #4.** Light scenes will be started by this field with value „1“ and will be blocked with value „0“.
3. **Scene blocking.** Also a scene button, that is reserved for a light scene, which will be activated if a running scene will not be desired anymore or a lighting has to be shut off. This button works exactly as the other scene buttons, but it is only labelled with “scene blocking” in contrast to the others.
4. **Favourite colour #1 ... #4.** Opens a colour selection, in which desired colour can be chosen. CubeVision editor cares for colour value, group address und colour fields.

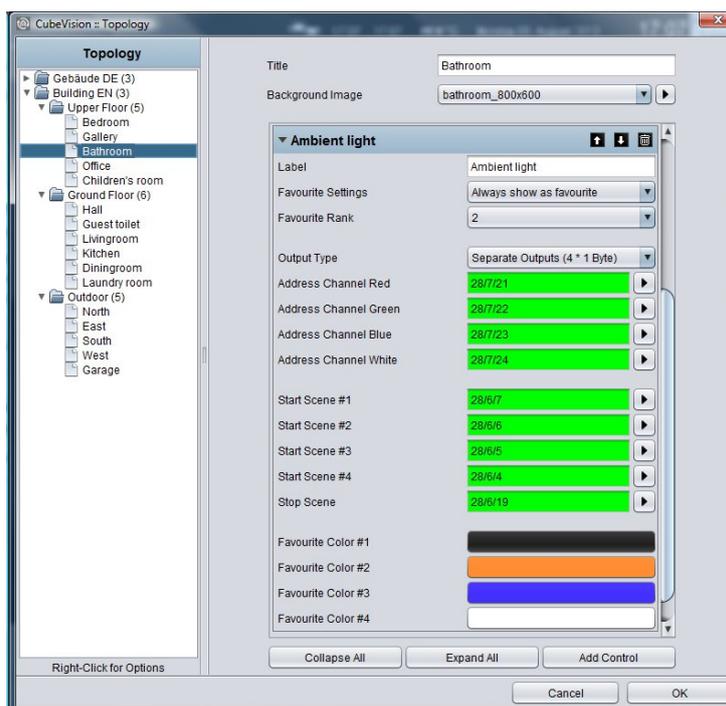


Figure 35 Configuration window of RGB control



4.2.8 CAMERA

- Option: Operability? No
- Extended view: Yes
- Height units: 3

The camera element also has got two kind of views. A small camera view (preview), with a small choice of functions for ICP and ECP (see figure 36). EEV displays the second view, in which additional options and functions are situated, beside a larger display of camera view. To the functions of the smaller camera view belong Pan, tilt control and three fixed positions, which can be activated. The movements can be controlled directly by the arrow symbols in the camera picture itself. Just below the camera picture, three position buttons are situated, to call up confirmed positions. In the view of EEV however, there is space for a fourth button, for a zoom function and for the possibility, to switch between the formats motion JPEG and static JPEG. (see figure 37).

The configuration will be very simple. Start will be the "base URL", which typically consists of the IP-camera's address and if necessary, of the http-port. After that, paths to the JPEG camera pictures (motion and static), positions and PTZ orders will be filled in. Here it is about a so called http-request. These will be composed on demand out of the basis URL and the corresponding path.

Example: *In case arrow symbol „left“ will be released in visualization, visualization assembles basis URL and path of action „left“ to a http-request and transmits it.*

A configuration of http-request control is optional. If paths of functions will be left off, the element also will not display these in visualization. As a feature, camera element offers the possibility to display the three different display formats 4:3, 16:9 and 16:10.



Figure 36 camera element

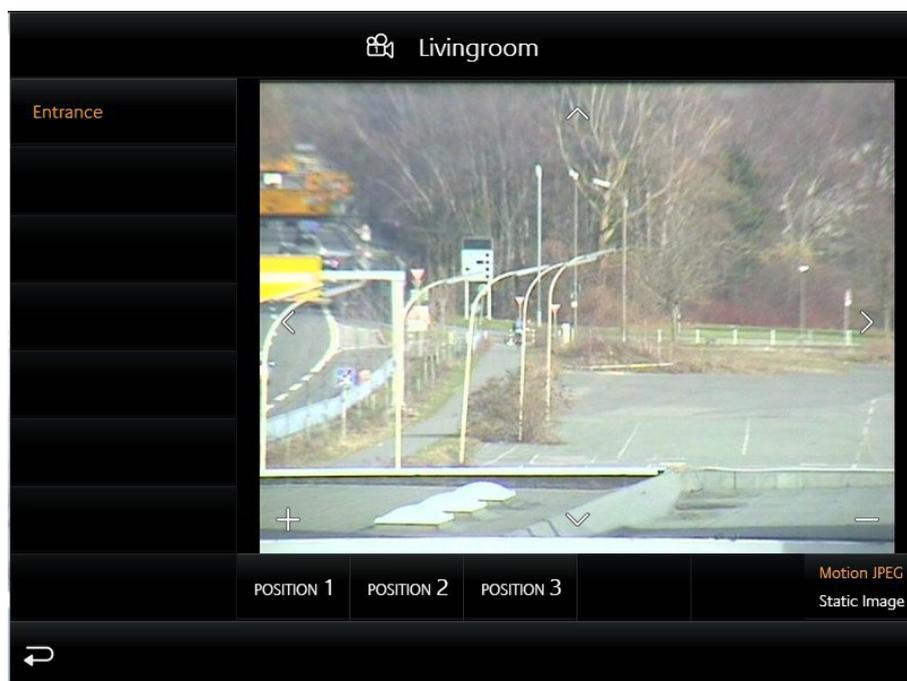


Figure 37 extended element view of camera element

This element has got following configuration fields (identifier see figure 38):

1. **Basis URL.** This URL is the basis and it always will be written in front of the paths of PTZ-control or camera picture. As a rule:
http://<IP-address or DDNS names>:<http-port>
2. **Aspect ratio of picture.** In order that, the aspect ratio of the picture can be adapted to the camera. Formats 4:3, 16:9 and 16:10 can be selected
3. **Path motion JPEG.** In this field a direct path to stream will be filled in. This pattern of display is very fluent in a simultaneous quality, but it also needs more resources.
4. **Path JPEG Image.** Nearly all IP-cameras possess a path to a static picture. It is about the picture, which the camera records in the moment of calling. In case this path will be used for visualization, it attempts to call up the picture several times, so that a motion picture will be created.
5. **Path zoom in/out.** These fields are connected with the plus and minus symbols in the camera view. Paths contain the orders for scaling down and for scaling up the camera picture.
6. **Path movement up/down/left/right.** These fields are connected with the arrow symbols in camera view. The paths contain the orders for the left, right, up and down movement of the camera picture.
7. **Path position #1 bis #4.** Paths for configured and stored positions of the camera.

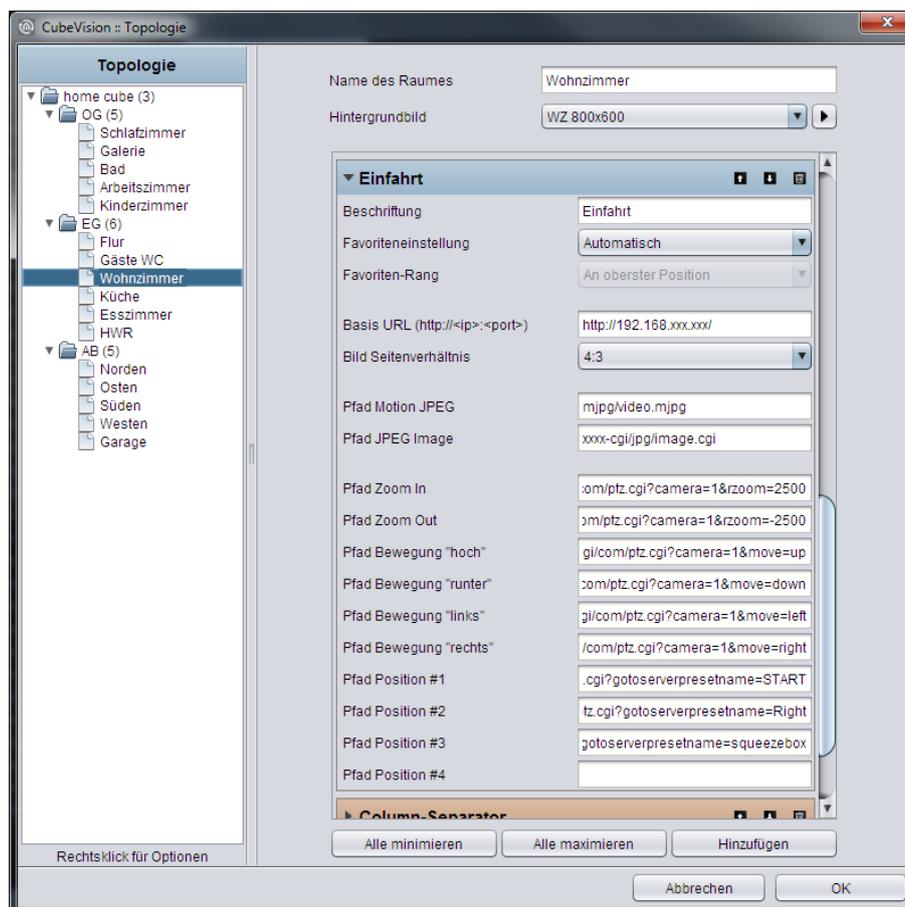


Figure 38 Configuration window of camera

Please note: Path for configuration fields 3 to 7 may not contain basis URL. Basis URL will be completed by CubeVision.



4.2.9 MULTIMEDIA

- Option: Operability? No
- Extended view: Yes
- Height units: 3

Of course a multimedia control must not be absent in CubeVision. In view of *ICP* and *ECP*, functions “Volume louder/quieter“, „silent“, „playlist forth/back“ and „play/pause“ are accommodated. In the first line, music information will be displayed. See figure 39. If *EEC* will be opened for this element, a cover and a dynamic playlist selection appear additionally.

As a multimedia client, Squeezebox and Sonos system are provided. That means for configuration, that these multimedia clients will be configured as always in existing editors (job editor resp. UPnP editor, see eibPort manual) and at this place only have to be selected out of a list. It is an advantage, that you don` t have to handle with group addresses laboriously here in multimedia element. In case, that another multimedia client has to be provided, the possibility arises for manually configuration. Thereby a separate group address field are displayed for every multimedia function (pause/play, louder/quieter ...). Beside control options, multimedia element also displays information. To this belong interpreter, album, track and cover (as far as music information are available).



Figure 39 Multimedia element

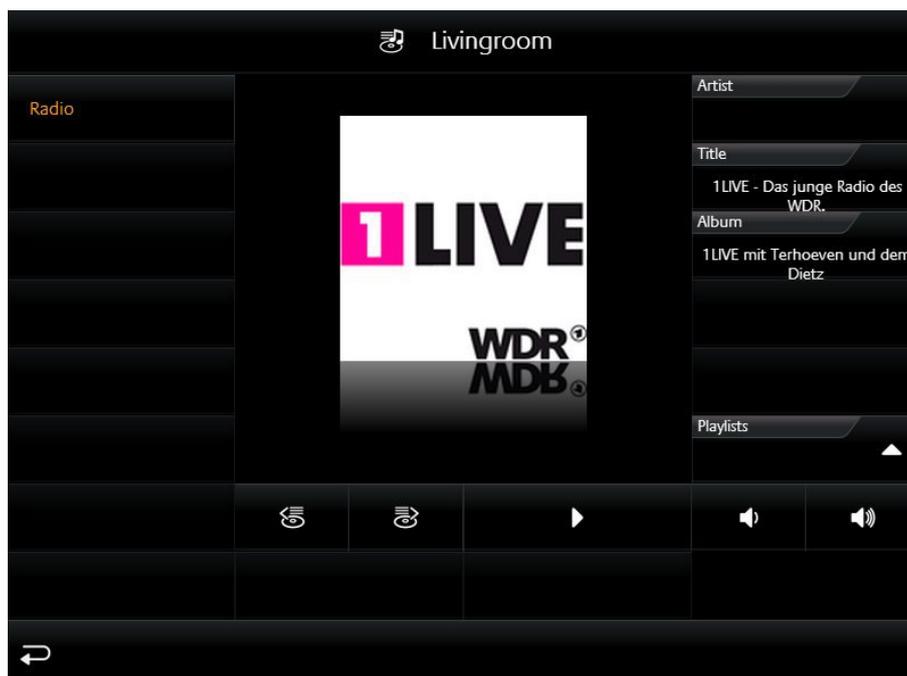


Figure 40 extended element view of multimedia element

This element has got following configuration fields (identifier see figure 41):

1. **System.** What kind of type should be controlled by multimedia. For selection are:
 - a. Manual configuration
 - b. UPnP (Sonos) and
 - c. Squeezebox
2. **UPnP unit choice.** In this list, all UPnP multimedia clients (et al. also Sonos) will be listed, which are configured in *eibPort*. For this configuration only the client has to be selected out of a list.

However, UPnP configuration has to be parameterized before. Figure 41 shows the configuration mask for UPnP clients.

3. **Squeezebox Controller selection.** If for system the Squeezebox is selected, so only Squeezebox multimedia clients will be listed. The client simply will be chosen out of a list. As additional information, the IP address and the http-port of the Squeezebox server are necessary. Figure 42 shows the configuration mask for Squeezebox clients.
4. **Manual configuration.** If this choice is selected for the system, the element displays a list of group address fields (see figure 43). This precept will be used for controlling different media (RS232, http-request, infrared, group addresses etc.) for example.
Functions, which can be linked with group addresses:

- a. Play/Pause. EIS1 group address
- b. Playlist forth/back. EIS1 group address
- c. Track forth/back. EIS1 group address
- d. Loudness gradually. EIS1 group address
- e. Silent. EIS1 group address
- f. Info track. EIS15 group address
- g. Info interpreter. EIS15 group address
- h. Info album. EIS15 group address
- i. Cover URL. Path to actual cover



Figure 41 Configuration window of multimedia for Sonos

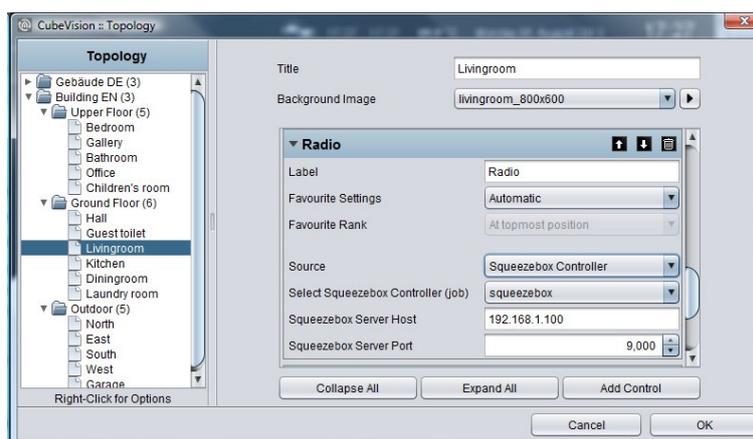


Figure 42 Configuration window for Squeezebox

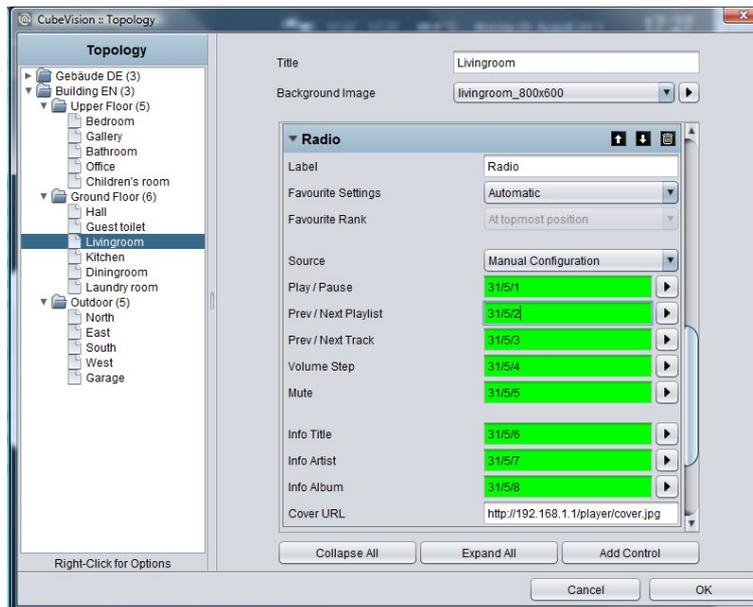


Figure 43 Configuration window of multimedia for manual configuration

4.2.10 WEATHER (LOKAL KNX)

- Option: Operability? No
- Extended view: No
- Height units: max. 5

This is an element for simply showing measured data of the home weather station, in the CubeVision element. The element standardly displays (across the complete width of the element) the outdoor temperature in the first line. Following lines are divided in two columns. Every field shows beside of the measured value, an identifier, the unit of the measured value and a suitable symbol. (see figure 44).

Beside the temperature indicator, following measured values are applied with symbols: These are:

- Wind speed and direction
- Brightness
- Air pressure and humidity
- Percipitation

If the desired type will not be displayed, the seventh type is ready, which can be used universally. The only difference to the other types is, that this type displays no symbol in visualization. In figure 44 for example, both values in the second line (h.temp and t.temp) are created by the universal type.



Figure 44 Element Weather (Local KNX)

This element has got following configuration fields (identifier see figure 45):

1. **Temperature Data type.** For temperature value, data types EIS5 and EIS9 are selectable.
2. **Temperature Address.** This group address is designated for outdoor temperature. The value will be displayed in the first line of the element.
3. **Append/modify/delete.** By these buttons, additional measured values can be appended, deleted or modified. If deleting, marked values of the list will be erased. By appending and modifying, another configuration window will open (see figure 46), in which new measured values can be applied or existing values could be modified. Options:
 - a. **Type.** For weather element, the six most usual measure values are deposited with a symbol. These are the types: wind speed, wind direction, brightness, air pressure, humidity, percipitation and the universal value. If one of the types will be selected, following the two fields "name" and "unit" will be filled in automatically. But these entries can be modified afterwards.
 - b. **Name.** Identifier for this measured value, which are placed in CubeVision element below the measured value
 - c. **Unit.** The unit, which will be entered here, will be shown in CubeVision element under the measured value.
 - d. **Value format.** In this field the formatting of the measured values takes place. The Pre- and post decimal places of the value object can be defined as follows. A "0" means a fixed digit and will be displayed always. A "#" is one optional digit (as it is used commonly for post-decimal places) and only will be displayed on demand. The "." signifies the decimal point.
 - e. **Address.** The real group address of the measured value.
 - f. **Data type.** For value display, at this place data type will be selected, which has to be shown. For selection are DTP1.002, DTP5.001, DTP5.010, DTP7.001, DTP9.001 and DTP 14.

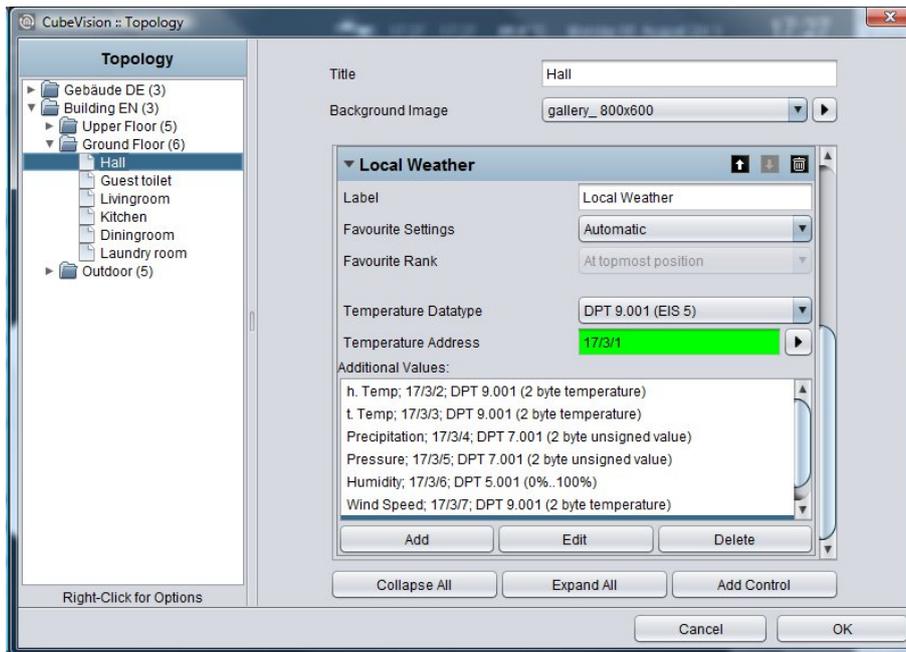


Figure 45 Configuration window WEATHER (local KNX)

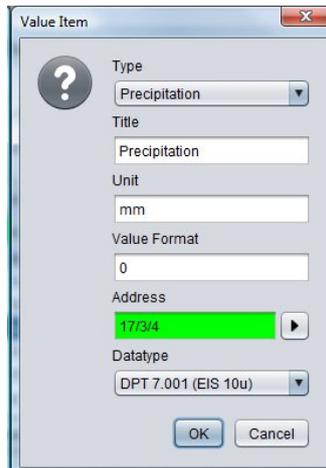


Figure 46 Configuration of measured value

4.2.11 WEATHER (INTERNET)

- Option: Operability No
- Extended view: Yes
- Height units: 2

If there is no local weather station or weather data should be displayed from a certain place, CubeVision element is able to download weather data out of the internet. The element has got two types of a view. In view for ICP and ECP, actual time, day of the week, actual temperature, actual wind speed, rain probability and a icon, which shows the actual weather conditions (see figure 47).

In the second view, additional to the stated data, air pressure, time, time of sunrise and sunset, a four days weather forecast (incl. lowest and highest temperature) and four diagrams (illustrating temperature [incl. highest and lowest temperature], humidity, wind speed and precipitation) will be displayed (see figure 48). Accurate values will be shown by “tracing” the diagram with finger or mouse. The values will be displayed in a kind of a speech ballon.

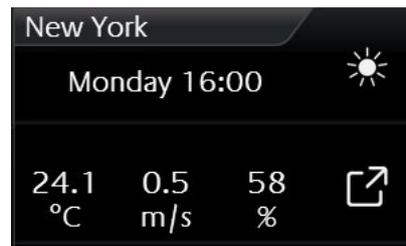


Figure 47 Element Weather (INTERNET)



Figure 48 Extended element view of weather (INTERNET)

In spite of the enormous information and the comfortable display of data, the configuration of this element only consists of two fields, which have to be filled in. There are: 1 These will be: 1. time zone (necessary for displaying the time of sunrise and sunset correctly) and 2. the name of the town, which weather data should be displayed. The town, whose weather data should be displayed. When these details are done, editor will search for the desired town. By the help of a hit list, desired town will be selected and confirmed. That`s all. Figure 49 shows configuration of element and figure 50 displays the hit list of searched town „Dortmund“.

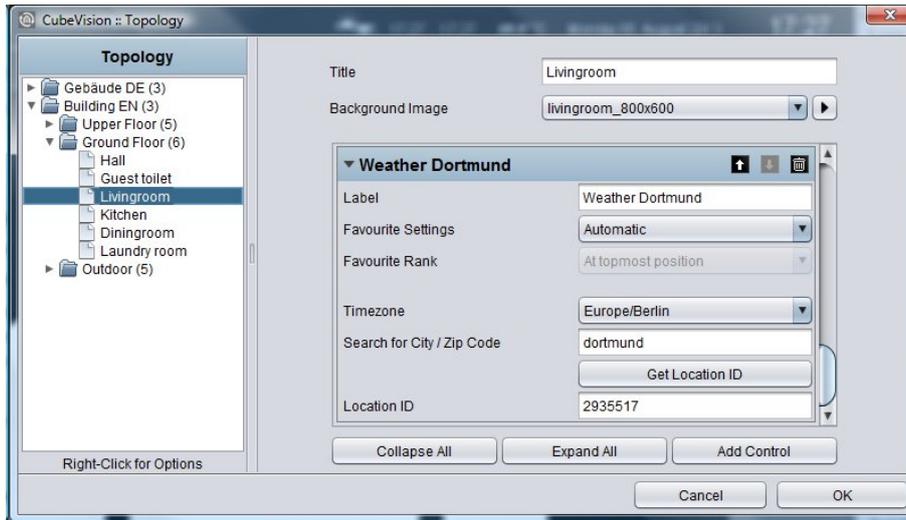


Figure 49 Hit list. Selection Configuration window of WEATHER (INTERNET)

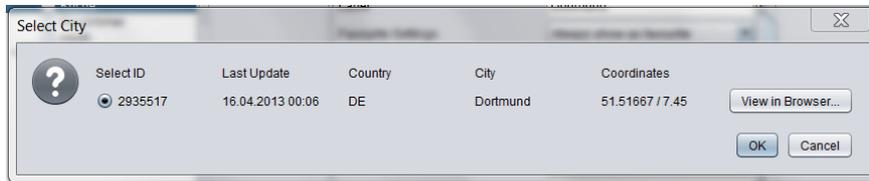


Figure 50 Hit list. Selection window of town

4.2.12 VALUES / DIAGRAMS

- Option: Operability? No
- Extended view: Selectable
- Height units: 2-8

Behind the element “values and diagrams”, a lot of capabilities for visualization, comparing, sending and charting of values are situated. A function for trend and ranking completes the range of functions. For configuration, only a group address of the value has to be entered.

The element has got one compact and one diagram view. The compact view is shown in ICP and ECP. At this place, only values are displayed (see figure 51). In EEV, one large diagram and further information additionally are situated. This extended view will be created by the editor, in case this option was activated before (see figure 51).

Compact View: Following possibilities are situated in this view: (see figure 51 as well).

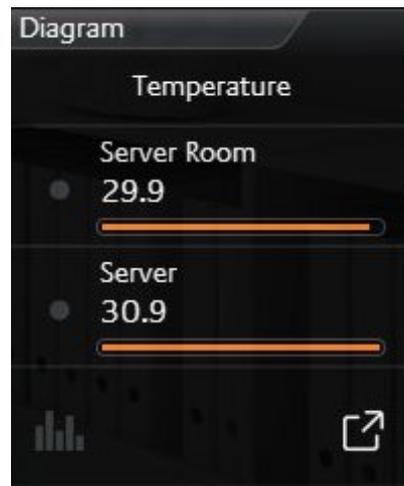


Figure 51 element of values/diagrams

Trend function means, that in front of every value a symbol stands, that depicts, in which “direction” this value is in move within the hit list.

A triangle with the top up signifies, that the value has increased within the sequence (value is gone up). If the top points downwards, value has decreased within the sequence (value is gone down). A circle points out, that this value did not move within the sequence.

Ranking function has a bearing on sorting of values in the list. In case this function is activated, value will sort in decreased order, top down. The advantage is, that the biggest value always stands in the first place and doesn` t have to search in the list of values. If this function is disabled, values don` t change their order and will be displayed in the order, in which they was applied in the element.

Option **bar graph**. This option extends every value with a bar graph. The bar of the highest value will be filled out totally, while the remaining bars will be filled out as a percentage (to the highest value). So you can recognize at a glance, as far as values differ from each other.



Figure 52 extended element view of values / diagrams

Because the element will be used as a value display also, it **can send out values**, too. This option can be activated for all values. In visualization, this option will be shown by a “notepad and pen” symbol,



which is always situated right beside the value. By a click on this symbol, within the value/diagram element, a numeric field opens, by which value can be entered and transmitted conveniently

Extended (diagram) View: Here the functions and hints to the diagram.

To open the diagram, a click on the symbol in the lowest line of the element (see figure 51) will be enough. By the way, this line with the diagram symbol only will be displayed, if the diagram was activated for this element.

Value for diagram selecting Always if the diagram will be opened (see figure 52), also the list of applied values will be displayed. Out of this list, the user selects these values, which should be shown in the diagram. This list is placed on the right of the diagram (see figure 51). Selection takes place by a simple click on desired values. By a click on the header, the list will be folded in.

Selected values will be listed below the diagram. There also the assigned colour of the value will be shown (see figure 52). In case, one of the selected values should be erased out of diagram again, this can happen by dragging out the selected value upwards out of the list (below diagram). While dragging out the value, a symbol of a trash barrel will appear.

To read more precise values out of a diagram, it will be enough to move a finger over the desired graph. In this way a **speech balloon** opens, which will show the point of time, the identifier, the unit and the value. In figure 54 (or figure 56) such a speech balloon is seen. Also possible is to tap the position in the graph; this option is more suitable for touch visualization clients. Graphs also allow zooming, which enables to scale for a detailed view. Zoom area simply will be drawn up by the mouse (with pushed button) or by a finger (horizontal movement). Figure 54 shows a blue arrow, which marks, how far the time range was drawn up. Figure 53 displays, how desired time range has be enlarged afterwards. By the button "Reset Zoom", enlargement will be cancelled. This button only will be displayed in the centre above diagram, if the time range was enlarged.

Time range modify. By the help of the two arrows above the diagram, you can page up (to the right) or page down (to the left) the displayed time range. The current date is shown on the left side above the diagram



Figure 54 Zoom area enlarged



Figure 53 Diagram area enlarged



Figure 55 Temperature comparison

Value comparison. On the right side, above diagram, the **freeze function** (Date comparison) is located. This function makes possible to “freeze” the current pointed graph. These freeze graphs still will be shown, if now the time range will be modified. So it is possible to make a comparison between the values out of different time ranges. In figure 55 temperatures from “server room” and “server” will be compared with temperatures of the previous day. Time ranges are displayed above the diagram, on the left (current date, that can be modified; solid graph) and on the right side (confirmed (reference) date; “freeze” graph will be pointed out in a spotted line)

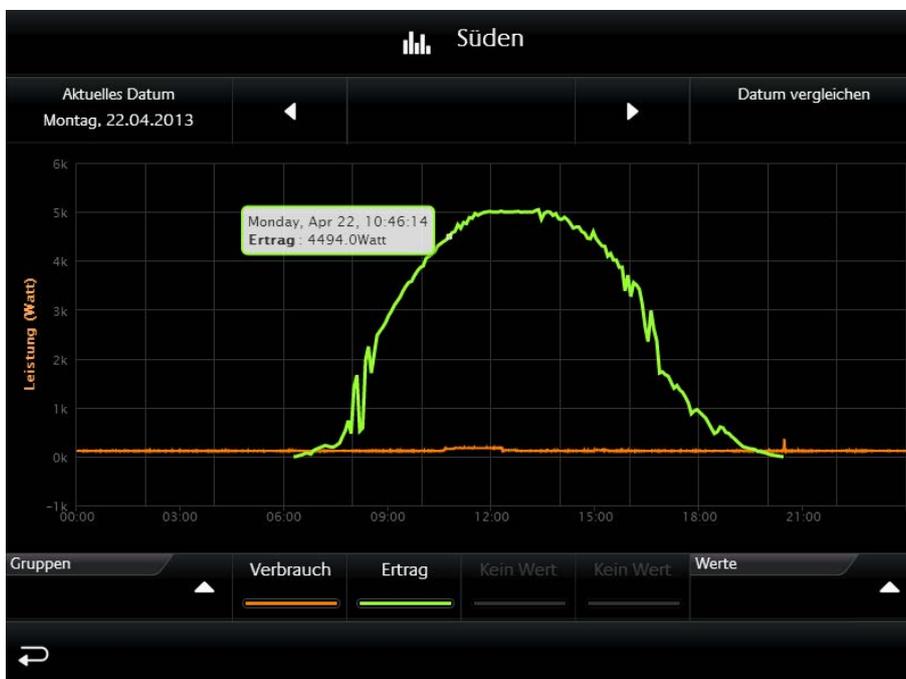


Figure 56 Different values from different diagrams

Comparing values of different diagrams with each other. Another feature of this element is, that selected diagram values will not be eliminated, if the diagram will be closed and in another room one another diagram will be opened. So values of different diagrams can be displayed together and compared with each other.

Example: In figure 56 two values are compared with each other. The green value “return“ comes out of diagram „pv-unit“, which is located in the outdoor view South. The second (orange) value shows the



consumption and is located in diagram “home office”. So both values out of different diagrams can be placed in one diagram (in this example, the value will be displayed in the same unit).

Also in the event that values with different units should be integrated in one diagram, diagram element has a solution. In a further example (figure 57), two values are compared with each other, which have got **different units** (temperature, power). In this case, diagram element inserts a second y-axis with the second value`s unit. In example both axis are placed on the left side, but it is configurable, on which side the axis should be displayed.



Figure 57 Comparison of different values with different units.

TIPP: These units can be applied in the editor, configured and used again in other diagrams. This ensures, that always the same unit, formatting and identifier will be displayed.

This element has got following configuration fields (identifier see figure 32):

1. **Description of values.** This text will be used for the headline in visualization and in diagram.
2. **To display as a diagram.** This option activates the diagram of an element. In doing so, an additional line will be inserted, by which the diagram can be opened. (see figure 512, last line)
3. **With bar graph.** This option blends a bar graph below every value. The bar of the highest value will be filled out totally, while the remaining bars will be filled out as a percentage to the highest value.(see figure 51)
4. **To sort values.** Thereby, the function will be activated for sorting the values in a descending order top down. If this function is disabled, element displays the values in that order, in which they were applied.
5. **Values.** In this field, applied values resp. group addresses will be listed, applied and arranged, which should be displayed. To do this, three buttons are located below the field.
 - a. Delete. For erasing marked group addresses resp. values off the list.
 - b. Modify. Opens configuration window of marked group address.
 - c. Append. Opens configuration window to append a new group address resp. value.

Figure 58 shows the configuration window, in case a new value was appended or modified (modify button). The options:

- Name. This identifier will be shown in visualization element above the value or in diagram above the colour.
- Address. This is the group address of the value, which is displayed. Group address can be selected by ESF selection dialogue (button with a triangle, which points to the right). If option „data entry“ is enabled, element also will send to this group address.

- Data type. Data type which describes the value. Possible choices are: DTP1.001 (EIS1), DTP5.001 (EIS6), DTP5.010 (EIS14u), DTP6.010 (EIS14s), DTP7.001 (EIS10u), DTP8.001 (EIS10s), DTP9.001 (EIS5), DTP12.001 (EIS11u), DTP13.001 (EIS11s) and DTP14 (EIS9).
- Factor. Received group address will be multiplied by this factor.
- Offset: Offset value will be added to the received value, before it will be displayed in visualization. Hint for factor und offset: The result of this calculation will be used solely in visualization. Order of calculation: First, the factor will be calculated and afterwards the offset value will be added, before the result will be shown in visualization or in diagram.
- Entering values: This option permits the user, to send values to this group address. Thereto a symbol will be blended beside the value, which opens a numeric field for entering desired value.
- Input: min. / max. value. There to a value range with an upper or lower limit can be defined for entering values.
- Y-axis und selection dialogue: Herewith the unit for the y-axis can be chosen. Units, which often will be used, can be „applied“, to avoid configuration of them for every element again and again. Applied units will be listed in a pull-down menu and can be selected easily. In another configuration window (see figure 60), which will be opened with the selection dialogue, units can be administrated. In this configuration window, units are configured centrally. Possibilities of configuration:
 - On the left, existing y-axis configurations are listed. By + and – button below this list, new configurations will be appended or deleted.
 - Name. This name will be displayed vertically combined with y-axis and in the tooltip
 - Unit. Unit will be displayed in brackets after the unit`s name.
 - Page. Defines, whether axis will be shown left or right of diagram.
 - Minimum/Maximum Limit. This option activates the min or max border of y-axis. In this way, a fixed scaling of y-axis will be achieved. If no limits were set, diagram element scales automatically the y-axis.
 - Minimum/Maximum Value. These data represents the upper and lower border of y-axis.
- Graphics Colour. The colour, which is selected here, will be used for the graph.
- To draw in levels. If this option is enabled, graph will be drawn in grades. This is useful for example, when it is about an EIS1 data type.
- Type of graph. The type of graph determines the method of data processing for the graph.
 - Absolute: The absolute value is pointed out. Generally temperatures or other actual measured data.
 - Difference: The difference curve can be used to create day profiles of steadily increasing actual counts.
- Interval. If for type of the graph the option difference will be selected, the interval time can be specified in minutes by this parameter, in which the difference to the last interval will be calculated. The larger the interval time, the more smoothed the graph will appear.
- Timeout. If a sensor will send out no value for a certain time, graph can be blanked out for this period. The parameter timeout defines, after how many minutes the graph will be blanked out.

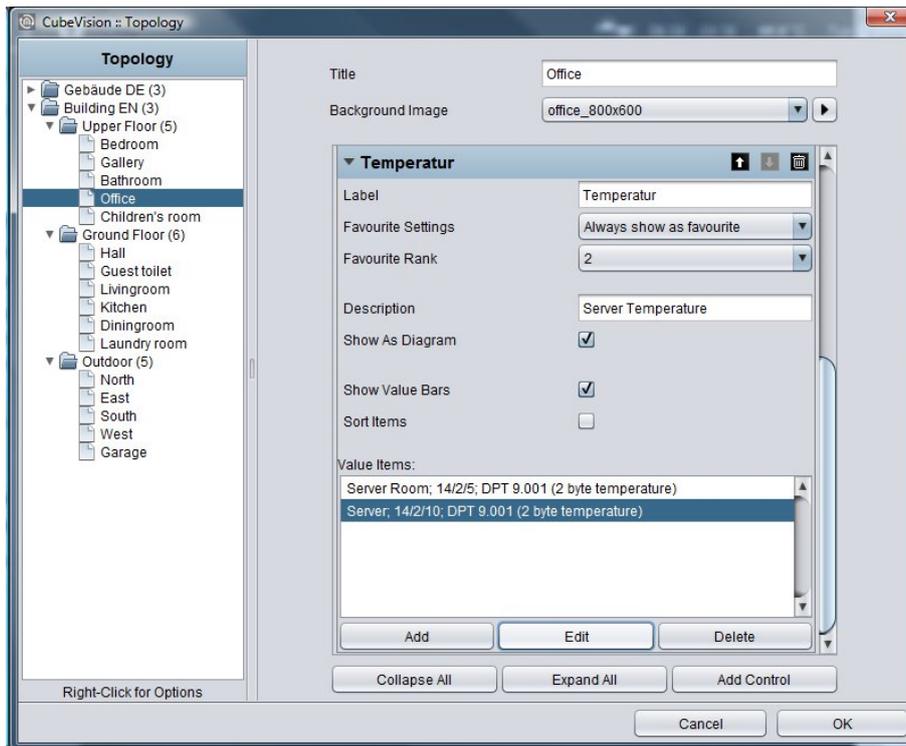


Figure 58 Configuration window of value /diagram element

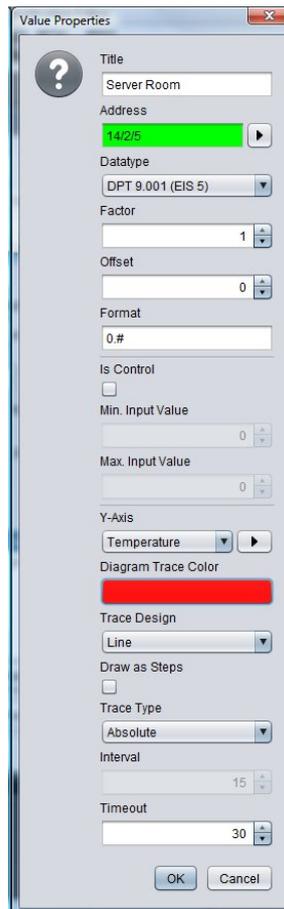


Figure 59 Configuration window value

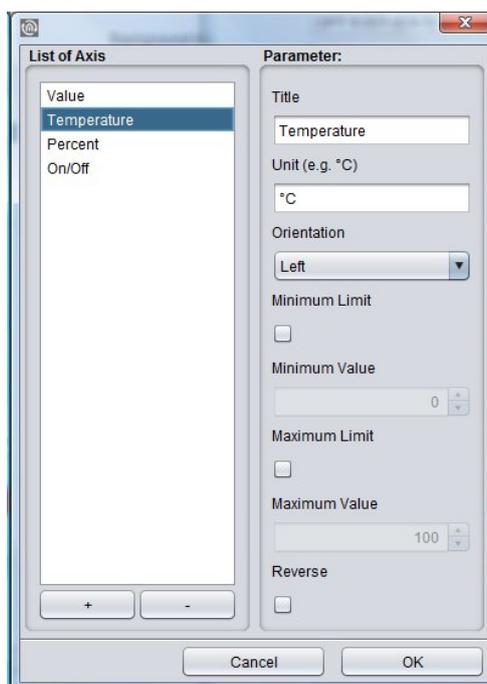


Figure 60 Configuration window units



4.2.13 GROUP SWITCH / SCENES

- Option: Operability? No
- Extended view: No
- Height units: 1 und 2

Sense and purpose of this element is, that a group of symbols, which contain different group addresses (four at a max), can be collected/placed in one element. The function behind it (that`s

the actual feature) but will show only one of the symbols as active. Independent from that is, whether the symbols carry the same group address or not.

In brief. Die Figure 60 shows a group switch with two functions, at one point the gate and at another point the barrier. If now for every function a different group address will be used, it has to be assured, that always only this group address will be displayed as active, which was released at last. In a regular channel, such a function has to ensured lavishly, that always only one group address resp. symbol may be shown as active. In the scene

element, this function already is implemented.

Layout of the element`s outline will be selectable freely. Figure 60, Figure 62 und Figure 61 display several layouts. In a height unit, it can be utilized four function inclusive symbols at a max, but without lettering. The other two layouts offer a display over two height units. On the one hand for two functions with symbol and a long lettering and on the other hand with four functions with symbols and a short lettering. For selection there are 30 several symbols available.

Beside the different group addresses, values and data types can be selected certainly.

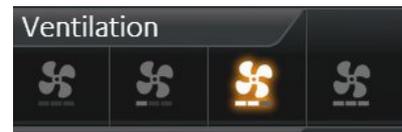


Figure 61 Element group switch – only icons

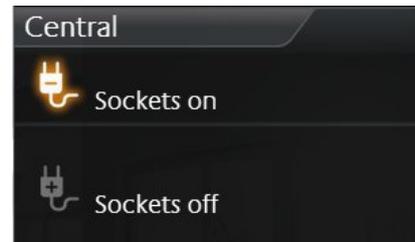


Figure 62 Element group switch - icons and a long text



Figure 63 Element group switch - Icons and a short text

This element has got following configuration fields (identifier see figure 64):

1. **Width for function.** With it, the layout of the element will be determined. For selection are available “Icons” (figure 61), “icons and a short text” (see figure 63) and “Icons and a long test” (figure 62).
2. **Highlight active.** One option, whether the symbols in active state also will be highlighted.
3. **Functions.** This window lists the group addresses for the functions. For administrating of group addresses, buttons „Append“, „Modify“ and „Delete“ are available below the list
4. **Configuration window functions.** Figure 64 show the possibilities of configuration.
 - a. Icon. Here are situated over 30 different icons, for realizing an optical hint to a function.
 - b. Name. The name will be displayed with its icon, except the single-line layout, which only shows the icons.
 - c. Address. Group address, on which it will be transmitted, if this function is released.
 - d. Data type. Choice of data type (DTP 5.010 (EIS14u) and DTP 1.001 (EIS1)) of the value, which will be sent and received.
 - e. Value. The value, which should be sent to the group address, can be entered here.

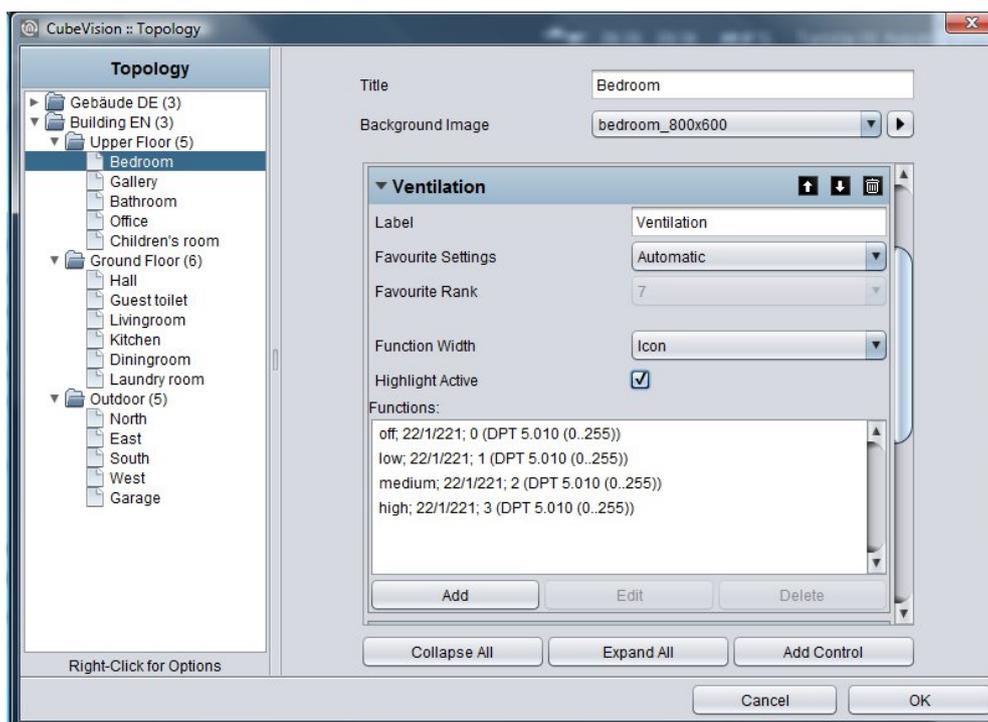


Figure 64 Configuration window of „group switch/scene“

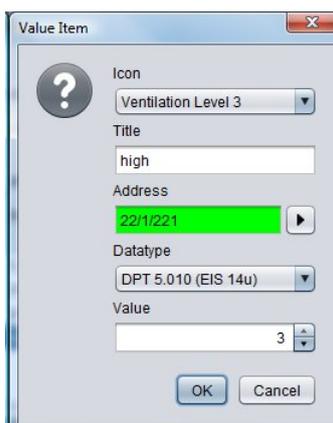


Figure 65 Scenes element “appending group address”



5 APPENDIX

5.1 ICONS FOR CONTROLS

In the following figure, all 34 icons of controls are displayed:



Figure 66 Icons for controls

For following function, icons are available, each for active and inactive (sequence from left to right):

- | | |
|--------------------|----------------------------|
| 1. "Central ON", | 18. "Wind", |
| 2. "Central OFF", | 19. "Door open", |
| 3. "Lighting", | 20. "Door closed", |
| 4. "Socket", | 21. "Barrier open", |
| 5. "Door", | 22. "Barrier closed", |
| 6. "Garage", | 23. "Locked", |
| 7. "Caution", | 24. "Unlocked", |
| 8. "Bath taken", | 25. "Music", |
| 9. "Sunblind", | 26. "Heating ON", |
| 10. "Fan On", | 27. "Heating OFF", |
| 11. "Fan off", | 28. "Water faucet open", |
| 12. "Fan level 0", | 29. "Water faucet closed", |
| 13. "Fan level 1", | 30. "Mail", |
| 14. "Fan level 2", | 31. "Keycard present", |
| 15. "Fan level 3", | 32. "Keycard absent", |
| 16. "Scene", | 33. "Bell" and |
| 17. "Rain", | 34. "Watering", |